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A time series analysis of the effects of financial incentives and mandatory clinical applications as interventions to improve spontaneous adverse drug reaction reporting by hospital medical staff in china

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Spontaneous reporting of adverse drug reactions (ADRs) is the most commonly method used in pharmacovigilance. However, one of its main limitations is under-reporting, which decreases sensitivity, delay detection of new ADRs, and make the system sensitive to selective reporting. Several studies showed that using a small economic inducement was associated with an increase in reported ADRs. At the First Affiliated Hospital of Zhengzhou University, Henan Province (China), we have been developing and running a pharmacovigilance programme (PhVP) since 2006. This PhVP records ADRs identified by a systematic and daily review of hospital admission diagnoses and cases of ADRs spontaneously reported by physicians. Starting in 2009, a bonus of 20 RMB (Chinese currency) was given for each spontaneous ADR report, and a fine of 50 RMB was given for any withheld ADR report. Therefore, the aim of the present study was to assess the effectiveness of this financial intervention for improving spontaneous reporting of ADRs by physicians in a hospital setting .A time series analysis using autoregressive integrated moving average models was performed to assess the changes in the total number of spontaneous ADR reports between the pre intervention period (2006-2008) and during the first (2009-2011) and second (2012-2014) intervention periods .The median number of reported ADRs per year increased from 29 in the pre intervention period to 277 in the first intervention period and to 666 in the second . The monthly number of reported ADRs was stable during the 3 periods: 3.56 ± 3.60 /month (95% (CI), 2.42-4.75) during the pre-intervention period, 21 ± 13 /month (95% CI, 16.97-25.80) in the first intervention period, and 56 ± 20 /month (95% CI, 48.81-62.17) in the second intervention period. The final research results show that a financial incentive and ADR management regulations had a significant effect on the increase of reported ADRs.

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