The evaluation of trustworthiness to identify health insurance fraud in dentistry

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ABSTRACT

Objective: According to the investigations of the U.S. Government Accountability Office (GAO), health insurance fraud has caused an enormous pecuniary loss in the U.S. In Taiwan, in dentistry the problem is getting worse if dentists (authorized entities) file fraudulent claims. Several methods have been developed to solve health insurance fraud; however, these methods are like a rule-based mechanism. Without exploring the behavior patterns, these methods are time-consuming and ineffective; in addition, they are inadequate for managing the fraudulent dentists. Methods: Based on social network theory, we develop an evaluation approach to solve the problem of cross-dentist fraud. The trustworthiness score of a dentist is calculated based upon the amount and type of dental operations performed on the same patient and the same tooth by that dentist and other dentists. Results: As shown in the simulation, this specific type of fraud can be identified effectively using our evaluation approach. A retrospective study for the claims is also performed. The result shows the effectiveness of the proposed method in identifying the fraudulent dentists. Conclusions: We provide a new direction for investigating the genuineness of claims data. If the insurer can detect fraudulent dentists using the traditional method and the proposed method simultaneously, the detection will be more transparent and ultimately reduce the losses caused by fraudulent claims.

Keywords: Fraud identification, social network, trustworthiness evaluation, dentistry

REFERENCES


