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Using linear programming optimization model analyze dentist health care fraud in Taiwan

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Introduction & Aim: It is possible for dentists to commit healthcare medical fraud under the current health care system in Taiwan. The purpose of this study is to simulate dentist's clinically disposal operation time and the application of universal health insurance benefits in Taiwan by using linear programming optimization model.

Design: This study utilizes linear programming based on the medical literatures about dentist's clinically procedure time for dental treatment procedures and the database of National Health Insurance Administration, Ministry of Health and Welfare, Taiwan about dentist's health care declaration mode under the existing health care system. It aims to identify whether the amount of reimbursement for dental application is reasonable and to predict when fraudulent medical expenses will occur.

Result: This study shows that dentists' disposal operation time will be far greater than their working hours in Taiwan. To achieve the maximum application amount of current regulations, 400,000 points per month in Taiwan, a dentist's disposal operation time will be at least 54 hours per week. However, it was claimed that the average of a dentist's working hours was 46.51 hours per week.

Conclusion: There are indeed false medical records to health insurance payment fraud in the dental profession in Taiwan. The actual crime rate should be much higher under current National Health Insurance. This study offered a new direction of thinking, as well as an alternative objective and scientific criteria to prosecutors and the judiciary in the field for dental healthcare medical fraud case.

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