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# Using Group Concept Mapping to Identify a Pharmacy-Based Trigger Tool to Detect Adverse Drug Events

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**Abstract :** The trigger tool is the low-cost, low-tech method to detect adverse events through clues called triggers. The Institute for Healthcare Improvement (IHI) has developed the Global Trigger Tool for measuring and preventing adverse events. However, this tool is not specific for detecting adverse drug events. The pharmacy-based trigger tool is needed to detect adverse drug events (ADEs). Group concept mapping is an effective method for conceptualizing various ideas from diverse stakeholders. This technique was used to identify a pharmacy-based trigger to detect adverse drug events (ADEs). The aim of this study was to involve the pharmacists in conceptualizing, developing, and prioritizing a feasible trigger tool to detect adverse drug events in a provincial hospital, the northeastern part of Thailand. The study was conducted during the 6-month period between April 1 and September 30, 2017. Study participants involved 20 pharmacists (17 hospital pharmacists and 3 pharmacy lecturers) engaging in three concept mapping workshops. In this meeting, the concept mapping technique created by Trochim, a highly constructed qualitative group technic for idea generating and sharing, was used to produce and construct participants' views on what triggers were potential to detect ADEs. During the workshops, participants (n = 20) were asked to individually rate the feasibility and potentiality of each trigger and to group them into relevant categories to enable multidimensional scaling and hierarchical cluster analysis. The outputs of analysis included the trigger list, cluster list, point map, point rating map, cluster map, and cluster rating map. The three workshops together resulted in 21 different triggers that were structured in a framework forming 5 clusters: drug allergy, drugs induced diseases, dosage adjustment in renal diseases, potassium concerning, and drug overdose. The first cluster is drug allergy such as the doctor’s orders for dexamethasone injection combined with chlorpheniramine injection. Later, the diagnosis of drug-induced hepatitis in a patient taking anti-tuberculosis drugs is one trigger in the ‘drugs induced diseases’ cluster. Then, for the third cluster, the doctor’s orders for enalapril combined with ibuprofen in a patient with chronic kidney disease is the example of a trigger. The doctor’s orders for digoxin in a patient with hypokalemia is a trigger in a cluster. Finally, the doctor’s orders for naloxone with narcotic overdose was classified as a trigger in a cluster. This study generated triggers that are similar to some of IHI Global trigger tool, especially in the medication module such as drug allergy and drug overdose. However, there are some specific aspects of this tool, including drug-induced diseases, dosage adjustment in renal diseases, and potassium concerning which do not contain in any trigger tools. The pharmacy-based trigger tool is suitable for pharmacists in hospitals to detect potential adverse drug events using clues of triggers.

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