



## Professional Interventions to Improve Rational Prescribing and Drug Utilization: Role of Pharmacists

Maryam Taghizadeh-Ghehi<sup>1\*</sup>

<sup>1</sup>Research Center for Rational Use of Drugs, Tehran University of Medical Sciences, Tehran, Iran

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Research continually produces new findings that can improve safe, efficient, and economic use of medications. Studies have been conducted to get insight into pattern of medication utilization and prescribing. Identifying problems in use of medications or generating new evidence alone is not sufficient to make changes(1). We need to uptake research findings and evidence-based approaches into routine practice, to achieve successful and consistent changes.

A wide range of interventions aimed at affecting prescribing, have been developed based on different theories (2). In according to the taxonomy provided by Cochrane Effective Practice and Organization of Care Group (EPOC), interventions that influence the prescribing, dispensing and use of medications can be categorized as professional, organizational, financial, structural, and regulatory(3).

These interventions could be employed by different stakeholders ranging from health system payers and health insurers to health-care professionals, researchers and individual clinicians. Interventions could occur at any level in the health-care system including individual clinician/health-care professional level (micro-level), at a group or team level (meso-level) or at an organization/policy/regulatory level (macro-level).

A major challenge ahead of improving appropriate prescribing is to determine what interventions are

worthwhile, specifically when implemented by pharmacists. Hence, it would be necessary to summarize evidences to identify which interventions are effective and in what circumstances they work best (4).

Among aforementioned interventions, professional/educational types are most commonly used and widely known. These interventions are mainly focused in this paper because they could be easily employed by pharmacists and integrated into pharmaceutical care. Distribution of educational materials, educational meetings, reminders, audit and feedback and educational outreach visits have been used and studied as professional/educational interventions.

Educational materials include printed recommendations for clinical care (e.g. clinical practice guidelines), electronic publications, and audiovisual materials. The effect of printed educational materials, when used alone, on practice outcomes is not remarkable (5).

Clinical guidelines are valuable educational materials. However, studies have shown that physicians' practice might not improve following simple access to a guideline. Successful implementation of clinical guidelines requires consideration of barriers in the context they will be used and making interventions to facilitate their effective dissemination and uptake in practice (2).

Another type of professional/educational interventions is educational meeting that includes conferences, lectures,

\*Corresponding Author: Dr Maryam Taghizadeh-Ghehi,  
Research Center for Rational Use of Drugs, 4th floor, No. 92, Karimkhan Zand  
Ave., Hafe Tirs Sq., Tehran, Iran. Tel/ Fax: +982188814157.  
Email: taghizadehgm@sina.tums.ac.ir

and workshops by health care providers. Educational meetings which are usually held in form of continuing medical education (CME), improve physician performance. Moreover, CME might have a slightly positive impact on patient clinical outcomes. CME activities could result in more positive outcomes if they are more interactive, include more methods, involve multiple exposures, and have longer durations (1, 4).

Audit and feedback is another professional intervention that has been widely used to improve professional practice. Audit and feedback is any summary of clinical performance of health-care professionals provided to them to allow them assessing and improving their performance. This intervention could be implemented either alone or as a component of multifaceted interventions.

Feedback can be given in a written, electronic, or verbal format, and may include recommendations on clinical practice. Giving the clinicians information about their practices or patient outcomes specifically in comparison to other practices or with clinical guidelines, is the prototype of feedback.

Whether audit and feedback is effective in improving health-care practice or how it should be to have greater impact, is uncertain. Based on reported findings from previous studies, audit and feedback may have small to moderate positive impact on professional practice. If these small effects could be shown to be cost-effective, should not be ignored. Delivery by a supervisor or respected colleague, frequent presentation, including peer comparisons, being focused and aiming at both specific goals and action-plans are characteristics of an effective audit and feedback (2).

Reminders are also categorized as professional/educational interventions. They are individualized information, provided verbally, written or electronically, to help health professional recalling information to do or avoid some action in care of a specific patient. Reminder systems have been used in health care settings for many years and studied widely. Early systematic reviews showed that reminders could be effective in improving prescribing behavior. A recent systematic review assessed the effectiveness of computerized decision support systems. The results showed that these systems have positive impacts on adherence to recommendations (4).

Academic detailing, known as educational outreach visits, is another professional intervention. In academic detailing, a trained health care professional meets with a prescriber in their practice setting to give evidence-based information in an interactive, educational encounter in order to change the provider's practice.

In contrary to pharmaceutical detailing, academic detailers that are mostly pharmacists or physicians, could provide evidence-based, objective information. Because, they are

not employed by and do not have any financial links to the pharmaceutical industry.

Academic detailing program should be designed based on identified needs, and dilemmas as they arise. Each program should include concise, clear-cut objectives and key messages with clear relevance to patient care. Provided messages in academic detailing visits should support for clinical decision-making and facing with challenging cases. The visit aims at engaging with the prescriber to move the educational interaction beyond simple provision of information to behavior change, by using specific skills that overcome behavior change barriers (4).

Academic detailing, on its own, could be a promising intervention to influence prescribing behavior. Pharmacists could participate in academic detailing programs as academic detailer, evidence reviewer for topics, developer of key messages, and trainer of other academic detailers. It has been shown that pharmacists could play important roles in improving patient outcome by providing interventions targeted at health-care professionals, such as academic detailing (2).

In according to current evidences, traditional interventions such as passive dissemination of information should not be considered as the primary strategies to change prescribing practice. In other words, among professional interventions, more effective less-considered approaches such as academic detailing, audit and feedback and reminders should be the focus of pharmacists' effort to improve prescribing practice and rational use of medications in future professional steps.

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