

CHANGING PHYSICIAN PRESCRIBING BEHAVIOUR

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ABSTRACT

Didactic approaches to educating physicians and/or other health professionals do not produce changes in learner behaviour. Similarly, printed materials and practice guidelines have not been shown to change prescribing behaviour. Evidence-based educational approaches that do have an impact on provider behaviour include: teaching aimed at identified learning needs; interactive educational activities; sequenced and multifaceted interventions; enabling tools such as patient education programs, flow charts, and reminders; educational outreach or academic detailing; and audit and feedback to prescribers. Dr. Jean Gray reflects over the past 25 years on how there has been a transformation in the types of activities employed to improve prescribing practices in Nova Scotia. The evolution of Continuing Medical Education (CME) has resulted in the creation of the Drug Evaluation Alliance of Nova Scotia (DEANS) program, which is one exemplar of an evidence-based educational approach to improving physician prescribing in that province.

Key words: Evidence-based, education, prescribing

Before a drug can be administered to a patient, the manufacturer must meet regulatory requirements, the physician writing the prescription must be licensed, and, for the most part, the care should be evidence-based. But when an educational approach is administered to a learner, whether to a student or a practicing health professional, there are far less stringent requirements. Although most educational programs are accredited, the accreditation system has never been validated. Few health professional teachers have been trained to teach and there is little attention paid to “evidence-based education”. As the health professions embrace the concept of lifelong learning, encompassing not just the undergraduate and residency components of education but the absolute necessity of continuing education for the remainder of the practitioner’s professional lifetime, it is imperative that we begin to devote as much attention to educational

research in Clinical Pharmacology/Clinical Pharmacy as we do to the process of evidence-based prescribing.

Recognition of this need came relatively early in my career. Like many of the Clinical Pharmacology groups across Canada, I worked with my Continuing Medical Education (CME) colleagues at Dalhousie in the 1970’s to design and implement a Therapeutics Course for practicing physicians. The course consisted of three days of didactic presentations with some skills-based workshops and was given every second year in the month of February. Teachers consisted of local Dalhousie faculty with guest speakers drawn from the Clinical Pharmacology community in both Canada and the US. One year we invited registrants to write blinded duplicate prescriptions for a month prior to the course, a month following the course, and again 6 months later. With the consent of the registrants, the

group was randomly split in two, with about 100 physicians not attending the course, thereby serving as the control. The control group received special consideration at subsequent courses, in recognition of their “sacrifice”. Ten “teaching points” were embedded in the course materials, both verbal and written, and monitors attended to assure that the points were emphasized during the presentations. One month after the course, the attendees had changed their behaviour in only one area, the prescribing of long-acting benzodiazepines. The other nine areas did not change. Even more discouraging is that at six months all prescribing behaviour had returned to the baseline for those who had attended the course. Clearly, a Therapeutics Course was important for the practicing doctors in confirming what they did right but did little to change their prescribing behaviour.

With the assistance of colleagues in both pharmacy and medicine, we began providing unbiased, evidence-based information on new drugs and therapeutic approaches through a variety of publications. *Drugs and Therapeutics for Maritime Practitioners* was published six times a year for 25 years. It was financed by contributions from the medical and pharmacy societies in the three maritime provinces as well as private subscriptions. Despite several offers from both industry and government to fund the publication, no external funding was accepted. The peer-reviewed articles were republished in other journals as well as websites of several licensing authorities across the country.

Two other publications also provided evidence-based information to practitioners with the support of the Canadian Pharmacists Association we began a new endeavor in 1993, *Therapeutic Choices (TC)*. The book was designed to provide therapeutic information to complement the monographs in *Compendium of Pharmaceutical Specialties (CPS)* for an audience of primary care, community-based practitioners.

In 2002, the British publisher Remedica, approached me to create a publication aimed specifically at specialists. Volume 1 of *Drug Advances* appeared in 2003 and was intended to be an annual publication, covering topics ranging from new approaches to disease management through to a broadened understanding of the role of established drugs. Unfortunately the publisher

encountered difficulties midway through the 2004 edition and it never appeared. Rigorous research and review projects undertaken by Dr. Dave Davis, initially at McMaster University and subsequently at the University of Toronto, demonstrated the relative lack of efficacy of published information to influence physician's behaviour. In a series of seminal papers for the Cochrane Collaboration in the 1990's^{1,2}, Dr. Davis and his coworkers showed that much of what I had been doing was ineffectual, including didactic lectures, print and audiovisual materials as well as practice guidelines. What did work in his studies was teaching aimed at identified learning needs; interactive educational activities; sequenced and multifaceted interventions; enabling tools such as patient education programs, flow charts, and physician reminders; educational outreach or academic detailing; and audit and feedback to prescribers.

In 1996, an opportunity to work in the Dalhousie Continuing Medical Education program (CME), coupled with several national opportunities, allowed us to develop the evidence-based educational tools necessary to influence physician prescribing behaviour in Nova Scotia. The Canadian Drug Guide was a research project funded by Health Canada to examine the development and uptake of therapeutic patient education materials. Through the Standing Committee of Continuing Medical Education of the Association of Canadian Medical Colleges, Dalhousie became involved in a national program to influence physician prescribing of benzodiazepines. During this project, we were able to develop the rudiments of academic detailing and the fundamentals of physician prescribing audit and feedback. At the same time, the Nova Scotia Department of Health (NSDOH) decided to link all health care institutions in the province using videoconferencing technology, and our group led the initial four-site pilot project and the final province-wide evaluation of the technology as both a patient-care and an educational tool. Finally, a program funded by the Medical Society of Nova Scotia enabled us to get valuable experience in developing and evaluating both web and CD-ROM based educational programs. But the project that truly influenced (DEANS).DEANS grew out of meetings involving CME, the Dalhousie Faculty of

Medicine and College of Pharmacy, the advocacy and regulatory authorities for physicians and pharmacists, the NSDOH, and the NS Seniors Secretariat. The mission of DEANS is to contribute to the health of Nova Scotians by encouraging appropriate drug use. Using objective needs assessments, the telehealth network, province-wide academic detailing, patient education programs, on-line CME, audit and feedback, as well as standard CME teaching programs, a variety of prescribing issues have been addressed. Funding for the projects that arise from DEANS comes from the NSDOH. A number of DEANS projects have now come to a successful conclusion with cooperation from patient advocacy groups, voluntary health agencies, and other health professionals. Examples include management of Type 2 diabetes, osteoarthritis, chronic obstructive lung disease, and dementia. Not all projects are equally successful in changing physician behaviour (e.g. the use of audit and feedback to influence the prescribing of topical steroids), but all projects are submitted for presentation at major national and international meetings and for publication in peer-reviewed journals.

Another educational tool that CME has developed and evaluated is a comprehensive educational needs assessment. Funded by Cancer Care Nova Scotia, an evaluation of the cancer-related learning needs of primary care physicians, nurses, pharmacists, and other health professionals has been undertaken and published. Both detailed written questionnaires and focus groups involving family physicians, specialists (both generalist specialists such as general surgeons and general internists as well as oncology specialists), other health professionals, and patients identified the learning needs of each professional group. Educational programs are now underway to provide both the knowledge and skills training necessary for good cancer care within the province. Although this was not the first educational needs assessment undertaken by CME, it was the most comprehensive, using both subjective and objective sources of information, as well as quantitative and qualitative methodologies.

Stimulated and funded by the College of Physicians and Surgeons of Nova Scotia, CME piloted a program of multisource feedback to

primary care practitioners in the early years of this decade, based on the Alberta Physician Achievement Review (PAR).³ Using psychometrically developed questionnaires, physicians undergo a self-assessment, as well as assessments by colleagues (other primary care physicians and referring specialists), coworkers such as nurses and support staff, as well as by patients. The confidential report they receive from the Nova Scotia Physician Achievement Review (NSPAR) provides information on medical knowledge and skills, attitudes and behaviours, professional responsibilities, practice improvement activities, administrative skills, and personal health behaviours. This initiative is now evaluating the role of individual feedback through this program in helping physicians to determine their own use of continuing medical education tools and programs.

Over the last decade, our understanding of CME and its role in shaping physician behaviour, including prescribing behaviour, has undergone a major change. Whereas CME has been understood to represent medical education after certification and licensure, *continuing professional development* (CPD) is a term that more accurately reflects the professional learning and personal growth that all health professionals need to undertake once in practice. More recently, Dr. Dave Davis has described the even more important role of *knowledge translation*: “the exchange, synthesis and ethically sound application of knowledge – within a complex system of interactions among researchers and users – to accelerate the capture of the benefits of research”⁴ Knowledge translation will take place primarily in practice settings and will use methods for overcoming barriers to change such as prompts, reminders and patient education programs. Targets for knowledge translation will extend beyond clinicians to include health care teams, health care systems, patients, populations, and policy makers. Content will focus on evidence-based information, and the models will be holistic (including more than just the clinician-learner) and evidence-based (from content of activity to testing of interventions). Relevant disciplines needed to assist in shaping knowledge transformation will include medicine, education, educational psychology, social psychology, systems managements, health services research,

social marketing, bioinformatics, and others. Recently, the Institute of Medicine in the US has called on disciplines such as Clinical Pharmacology to assist in defining care gaps, those areas in which current patient care lags behind the scientific evidence, and then to design evidence-based educational interventions (and evaluations) to correct these care gaps. This will require the use of information technology more extensively than is done at present and possibly the alignment of payment policies with improvement in the quality of care (as is being introduced in Britain). Changes of this type will require careful preparation of health care providers, through education and feedback. To undertake such a role, the clinical pharmacology discipline needs to accept that traditional CME didactic lectures will not change physician behaviour or improve patient outcomes. The use of targeted, multiple and sequenced activities can make a small change in physician prescribing behaviour but much more educational research is necessary to determine ways and means of making larger changes.

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