Research In Family Medicine: An Outsider’s View

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Probably no other group of physicians in Canada have faced more far-ranging changes and challenges in recent years than have family physicians. For instance, you are being asked by the College of Family Physicians to adopt a new role in primary care, a role which is much easier to spell out on paper than it is to implement in practice. You are also being urged to create a new health care team in your practices, consisting of a variety of health workers who are perceived by some as eroding the physician’s traditional authority. You are being encouraged to develop community health centres, a move which some of you feel is just another step toward government control of your practices. Universities have opened their doors to family physicians and placed them in a new academic role, one which some of you have described as making you feel like a fish out of water. Finally, you are being encouraged, if not cajoled, into becoming researchers. In response to this latter point, some of you balk and wonder if you do not have enough to do just taking care of your patients.

To those of you who despair the thought of doing research, my answer is this: Research into family medicine most definitely has to be carried out on a substantial scale, but not all family physicians need to conduct research, nor does all research in family medicine have to be carried out by family physicians.

Obviously, research is vitally important to the growth of any discipline, but it should be stressed that research is doubly important to a discipline like your own which is faced with monumental changes and challenges. You cannot rely only on the informed opinion or the collective wisdom of your colleagues in carving out a new role for family medicine, or in designing new methods and organizations for providing health care, or in developing academic departments of family practice. Informed opinion has its place in these endeavors, but it must be supplemented with sound data arising from careful research.

Various Research Roles For Family Physicians

Family physicians can play various roles in research, in a continuum ranging from negative, to neutral, to positive orientations. On the negative end of the continuum there are two orientations to research which are identified by the word NO. The first type is the non-believer in research who holds, for various philosophical or practical reasons, that he himself or family physicians in general, should not engage in research. The other type of negative orientation is the obstructionist. He is opposed to research in family medicine; directly or indirectly, he undermines the attempts of others to carry out research. If you are oriented to research, naturally you do not take too kindly to the obstructionist, but fortunately there are not too many of this type around.

Silent Majority

In the middle of the continuum is the vast silent majority of family physicians in Canada. This is the BLA group of physicians — the bored, the lethargic and the apathetic — as far as research is concerned. They are probably bored by the frequent missionary appeals of the pro-research group; their lethargy may stem from a lack of time, skill or knowledge related to research; and their apathy might possibly stem from a belief that research is “... an idle pursuit, fit only for those unwilling, or unable, to make an honest living practicing medicine”.

I would like to offer new hope to the NO and the BLA groups: there are a variety of rewarding roles which can be played in relation to research, other than actually setting up and carrying out a research project. Before describing these roles, I should emphasize that some persons may be able to fill only one or two of these roles, while others can take part in all of them. The important point to remember is that each of these roles or functions is important to the entire research endeavor in your discipline. Hopefully, all family physicians will eventually find a useful niche in this mosaic of activity.

First, the supporter of research is a person who, for any variety of reasons, is unable to implement research projects himself, but helps out by facilitating the research of others. For instance, he cooperates by filling out questionnaires, providing willing patients for a research project, or by making his office or patient records available on a confidential basis to researchers. In this way, he is contributing to research and should feel that his contribution is genuinely essential and useful.

The educator or teacher of research is a person who shares his research knowledge and skills with colleagues. To be sure, teaching can take place by means of the written word, but I have in mind face-to-face teaching. This type of education is an essential component in research, since many re-
search skills can best be conveyed to others by personal means. The pool of research educators in family medicine should enlarge beyond its current meager size as more physicians try their hand at research.

The third research role is that of the applicant or user of research findings. Ideally, this person keeps up-to-date on research in family medicine and incorporates into his practice those results which are relevant to him. Before you accuse me of being unrealistic, I will acknowledge that much research seems impractical or irrelevant to the practitioner's needs. What this suggests is that the producer and the user of new knowledge must strive to understand better one another's needs, problems, and language so that research will benefit them both.

Next comes the role of critic. Research in any discipline is stimulated through constant scrutiny and informed criticism by colleagues in research. Certain individuals are particularly adept at examining critically the research methods and findings of others. Although family physicians are not accustomed to criticizing or questioning the work of their colleagues in public, those who engage in research will have to become used to the critic, who has an implicit obligation to inform the research community of his evaluations. You may rest assured, however, that criticism is not a one-way street and that the critic is also subject to scrutiny by colleagues.

Some people are particularly well-suited to the role of research head worker. He is the theorist and generator of researchable ideas. He has a knack for identifying the important problems that need to be studied and for knowing what problems are incapable or unworthy of study. He may also be a synthesizer of new knowledge, even though he himself is not inclined to become involved in research projects.

**The Role of Researcher**

Finally, we come to the role of researcher — the individual who sets out to collect data which will allow him to answer well-defined questions or hypotheses. Some researchers can best be called 'followers', in the sense that they participate in projects conceived and designed by others. The 'leaders' in family medicine research are those who initiate original projects, design unique research methods or instruments, and stimulate others to conduct research.

Research leadership requires, among other traits, a sense of 'organized curiosity', an ability to think about a problem in abstract and general terms, an ability to work out — often creatively — the many details involved in a research project, and a willingness to wait months or years for the results. Some of these traits are not nurtured in the busy clinician, who, for example, becomes accustomed to thinking about the unique rather than the general characteristics of people and their behavior, and who has learned to expect relatively fast results from his clinical activities.

But the person interested in research should not become dismayed if he cannot initiate or take part in original and imaginative research. My point in mapping out the different roles of research is that family physicians can surely find something in them to his liking.

I would like to comment briefly on two other matters concerning research in family medicine. First, I am sometimes asked: "What type of research can the family physician do best?", or: "What sort of research problems should he investigate?" The individual
Keflex (cephalexin monohydrate, Lilly) is a semisynthetic cephalosporin antibiotic intended for oral administration. It is 7-[l-α-aminoo-β-phenyloxacyteloxy]-3-methyl-3-cephem-4-carboxylic acid, monohydrate.

**Microbiology** — In vitro tests demonstrate that the cephalosporins are bactericidal because of their inhibition of cell wall synthesis. Keflex is active against the following organisms in vitro:

- Beta-hemolytic and other streptococci (many strains of enterococci, e.g. Streptococcus faecalis, are resistant)
- Staphylococci, including coagulase-positive coagulasenegative, and penicillinaseproducing strains (a few strains of staphylococci are resistant to cephalaxin)
- Diplococcus pneumoniae
- Escherichia coli
- Proteus mirabilis
- Klebsiella pneumoniae
- Many strains of Hemophilus influenzae

Keflex is not active against most strains of Proteus mirabilis or Proteus vulgaris. It has no activity against Pseudomonas species. Keflex resists destruction by penicillinase, but is sensitive to β-lactamase produced by certain gram-negative bacilli.

**Pharmacology** — Keflex is rapidly absorbed after oral administration. Following doses of 250 and 500 mg, average peak serum levels of approximately 9 and 18 mcg per ml, respectively were obtained at one hour. Measurable levels were present six hours after administration. Over 90 percent of the drug is excreted unchanged in the urine within eight hours. Peak urine concentrations are approximately 1,000 mcg per ml during this period following a 250-mg dose.

**INDICATIONS**
Keflex is indicated in the treatment of infections of the respiratory tract, genito-urinary tract, skin, and soft tissues when the infection is caused by susceptible organisms.

**CONTRAINDICATIONS**
Keflex is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

**WARNINGS**
In penicillin-sensitive patients, cephalosporin antibiotics should be used with great caution. There is clinical and laboratory evidence of partial cross-allergenicity of the penicillins and the cephalosporins. Instances of patients who have had severe reactions to both drugs (including fatal shock-like after parenteral use) have been reported. As with oral penicillins, immediate and severe reactions are much less likely to occur after administration of Keflex, an oral cephalosporin.

Any patient who has demonstrated some form of allergy, particularly to drugs, should be advised to receive antibiotics cautiously and then only when absolutely necessary. No exception should be made with regard to Keflex.

**PRECAUTIONS**
As is the case with all new drugs, patients should be followed carefully so that any side-effects or unusual manifestations of drug idiosyncrasy may be detected. If an allergic reaction to Keflex occurs, the drug should be discontinued and the patient treated with the usual agents (e.g. epinephrine, antihistamines, pressor amines, or corticosteroids).

Prolonged use of Keflex will result in the overgrowth of non-susceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Like other potent antibacterial agents excreted by the kidney, Keflex should be administered with caution in the presence of impaired renal function.

**PRESCRIBING INFORMATION**

Under such conditions, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended. If Keflex is to be used for long term therapy, periodic monitoring of hematologic, renal and hepatic functions should be done.

Safety of this product for use during pregnancy has not been established.

Indicated surgical procedures should be performed in conjunction with appropriate chemotherapy; e.g. the incision and drainage of abscesses.

Keflex may produce a false-positive reaction for glucose in the urine with Benedict’s or Fehling’s solution or with Clinitest tablets, but not with Tes-Tape (urine sugar analysis paper, Lilly).

**ADVERSE REACTIONS**

**Gastro-intestinal** — The most frequent side-effect is diarrhea. In the majority of patients, it was not severe enough to warrant cessation of therapy. Nausea and vomiting have also occurred. Dyspepsia and abdominal pain have been reported.

**Hypersensitivity** — Allergies (in the form of rash and urticaria) have occurred. These reactions usually subsided upon discontinuation of the drug.

**Other reactions** have included genital and anal pruritus, genital moniliasis, vaginitis and vaginal discharge, dizziness, fatigue, and headache.

**Eosinophilia** has been reported; approximately 13% of patients demonstrated an increase above 4%. Leucopenia and neutropenia have been observed in a few patients.

**SYMPTOMS AND TREATMENT OF OVERDOSE**

No information is available on the treatment of overdose with Keflex. There is no specific antidote.

**DOSEAGE AND ADMINISTRATION**
Keflex is administered orally. The adult dosage ranges from 4 to 8 Gm. daily in divided doses. The usual adult dose is 250 mg every six hours. For more severe infections or those caused by less susceptible organisms, larger doses may be needed. If daily doses of Keflex, greater than 4 Gm, are required, parenteral cephalosporins, in appropriate doses should be considered.

The recommended daily dosage for children is 25 to 50 mcg and divided q.i.d. doses.

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<tr>
<th>Child’s Weight</th>
<th>250 mg/5 ml</th>
<th>500 mg/5 ml</th>
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<tbody>
<tr>
<td>10 Kg (22 lb)</td>
<td>1 to 2 tsp, q.i.d.</td>
<td>1 to 2 tsp, q.i.d.</td>
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<tr>
<td>20 Kg (44 lb)</td>
<td>1 to 2 tsp, q.i.d.</td>
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<tr>
<td>40 Kg (88 lb)</td>
<td>1 to 2 tsp, q.i.d.</td>
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In severe infections, the dosage may be doubled.

In the treatment of streptococcal infections, a therapeutic dosage of Keflex should be administered for at least ten days.

**HOW SUPPLIED**
Pulvules Keflex, equivalent to 250 mg cephalaxin (No. 402) are supplied in bottles of 50. Identicode H69.

Keflex 500 mg Tablets (T. 1895), equivalent to 500 mg cephalaxin, are supplied in bottles of 50. Identicode U49.

Keflex Oral Suspension (M-201) equivalent to 125 mg cephalaxin per 5 ml teaspoon, in 100 ml — size packages. Bubble gum flavour. Identicode W21.

Keflex Oral Suspension (M-202) equivalent to 250 mg cephalaxin per 5 ml teaspoon, in 100 ml size packages. Peach coloured granules, bubble-gum flavour. Identicode W68.

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**References**