

Chiropractic physicians for the twenty-first century?

I.D. Coulter Ph.D.*

This paper examines a recent report on Medical Education entitled "Physicians for the Twenty First Century." The conclusions of this study are summarized. Using the Canadian Memorial Chiropractic College as the focus, chiropractic education is then examined with regard to these same solutions. The results of this comparison show that in many areas, chiropractic education is favourably positioned vis-a-vis medical education, but in other areas it shares the same or similar problems. In the areas of problem based learning and competency based learning, CMCC has already implemented programmes. Further, the objective of our programme is the graduation of a "general" practitioner and our programme is, therefore, a broad based, general professional education. In the areas of the humanities and the social sciences, our programme is deficient and this is something that must be addressed in the coming years.

KEY WORDS: chiropractic, education

Cet article examine un compte-rendu récent sur la formation médicale intitulé "Médecins pour le vingt-et-unième siècle." Les conclusions de cette étude y sont résumées. En se servant du "Canadian Memorial Chiropractic College" comme référence, la formation en chiropraxie est étudiée en ce qui concerne ses propres solutions. Les résultats de cette comparaison montrent qu'en de nombreux domaines, la formation en chiropraxie est mieux placée que ne l'est la formation médicale, mais que dans d'autres domaines, elle fait face aux mêmes problèmes ou à des problèmes similaires. Dans les domaines de l'apprentissage reposant sur l'analyse d'un problème, et l'apprentissage de l'art, le CMCC a déjà mis en pratique ses propres programmes. De plus, l'objectif de notre programme est l'obtention du grade de praticien "généraliste," et par conséquent, notre programme est une formation professionnelle générale, à base large. Dans les domaines des sciences humaines et sociales, notre programme est déficient, et c'est ce à quoi nous devons nous attacher dans les années à venir.

MOTS-CLEFS: chiropraxie, formation

Introduction

*"We can draw lessons from the past,
but we cannot live in it"*

L.B. Johnson

In 1981, the Association of American Medical Colleges (which also includes Canadian medical schools) established a panel to examine the same question posed here, that is, to assess current education of medical students in relationship to what kind of medical physician will be needed in the next century. In the process of doing this, they produced the most important critique of medical education since the Flexner Report in 1910.¹

It is, therefore, of some interest to examine the findings of this prestigious panel and to extract from their deliberations the lessons that are applicable to chiropractic and chiropractic education. In an age of "bottom lines," it is highly instructive to quote that of the panel:

"The panel's deliberations are rooted in the question of whether or not common attributes should characterize all physicians. Our answer is affirmative. We believe that every physician should be caring, compassionate, and dedicated to patients — to keeping them well and to helping them when they are ill. Each should be committed to work, to learning, to rationality, to science and to serving the greater society. Ethical sensitivity and moral integrity, combined with equanimity, humility and self-knowledge, are quintessential qualities of all physicians."²

The problem

They conclude from this that medical education should be a general professional education whose goal is both the acquisition of *personal* attributes and the *preparation* for specialized education in medicine. The emphasis should be on the whole person. Their other major conclusion is that present medical education has been distorted away from this goal.

The panel identified seven factors that have contributed to, or will contribute to, the erosion of general education for physicians:

1. Rapid advances in biomedical knowledge
2. Chemical, mechanical and electronic technologies available for prevention and treatment of disease will become even more complex, powerful, effective and potentially dangerous.
3. Medical practice using these technologies will require an even higher degree of specialization.
4. There will be an increasing recognition that many factors determining health and illness are not directly influenced by interventions of the health care system but are the consequence of life-style, environmental factors and poverty.
5. Patients will increasingly need and demand advice and counsel from physicians and other health professionals about how to use special medical services to improve personal health.
6. The principal providers of medical service in the near future are likely to be physicians employed by large corporations or by health service organizations covering specific population groups.
7. The environment of medical education will be heavily influenced by the agencies that pay for medical services and that will shape the future of these services. In a time of concern for continuing medical costs, medical and financial

*Professor, Canadian Memorial Chiropractic College,
1900 Bayview Avenue,
Toronto, Ontario M3G 3E6
© I.D. Coulter 1986

incentives will be less and less congruent, complicating and intensifying ethical dilemmas in medicine.

In the face of these pressures, they conclude "that the present system of general professional education for medicine will become increasingly inadequate unless it is revised."³

The solutions

Overall, their solution is to seriously reconsider not so much the contents of medical education, but the emphasis given to their contents. The panel came to five major conclusions, with a set of recommendations for change for each.

1. Purposes of a general professional education

Vital to these purposes are:

- a) Values and attitudes that promote caring and concern for the individual and society.
- b) Concepts and principles derived from knowledge of the natural sciences, the social sciences, and the humanities.
- c) Skills in the collection of information from and about patients in the establishment of rapport with patients to facilitate both diagnosis and therapy, in the application of the scientific method to the analysis, synthesis and management of problems, in the identification and critical appraisal of relevant literature and clinical evidence, and in the continuation of effective learning.

To achieve this they recommend: A shift in emphasis from acquiring knowledge (information-intensive approach) to an emphasis on acquiring values, attitudes, skills and knowledge; a clarification of knowledge and skills actually necessary; adapting to changing demographics and the health care system; emphasizing health promotion and disease prevention for individuals and communities.

2. Baccalaureate Education

- They recommend: that a broad baccalaureate, and not a narrow scientific one, be the basis for preparing for entrance to the medical programme and should include both social sciences and the humanities; admission criteria should be modified and only essential courses specified and reflect the above; baccalaureate education should reflect scholarly activities and effective writing skills; students should be selected using criteria judging their abilities to learn independently, acquire critical analytical skills, and develop the attitudes of caring and to contribute to society; medical schools should communicate clearly to colleges about the criteria to be used.

3. Acquiring learning skills

A general education must produce a graduate committed to life-long learning.

"Active, independent, self-directed learning requires among other qualities the ability to identify, formulate and solve problems; to grasp and use basic concepts and principles; and to gather and assess data rigorously and critically."⁴

Their recommendations here include: developing criteria for evaluating ability to learn independently; curriculum must be structured to allow for free time and self-directed learning; lecture hours must be reduced;* students must be given learning experiences that require them to be active, independent problem solvers; evaluation of students must assess analytical skills and not memorized information; students must be introduced to information retrieval, management and analysis.

4. Clinical Education

Here the focus of learning should be patients and patients' families. They recommend: Faculties should specify the clinical knowledge, skills, values and attitudes that students should develop and acquire; faculties should describe clinical settings appropriate for clinical education and plan to provide them; those responsible for clinical education must be given the necessary time to do this; explicit criteria for systematic evaluation of the students' clinic performance must be developed; basic science and clinical education should be integrated to enhance the learning of key scientific principles and concepts and to promote their application to clinical problem solving.

5. Enhancing Faculty Involvement

Here they suggest that: interdisciplinary teams and interdepartmental ones, formulate a coherent and comprehensive educational programme and select the instructional and evaluation methods to be used; they should have the authority and responsibility to plan, implement and supervise an integrated programme; faculty should have the time and opportunity to establish a mentor relationship with individual students; programmes should be established to assist faculty to expand their teaching responsibilities.

Chiropractic Education – how are we faring?

Interestingly, not only is CMCC faring very well in comparison to medical schools, but over the past ten years has become a leader in chiropractic education through confronting some of these same problems. However, in some very key areas we share either the same problems as medicine or are in danger of making the same mistakes. Let us examine the same areas as listed above.

A Generalist Degree

The chiropractic degree is, and always has been, a generalist degree. Further, since our students do not generally go on to specialist training, it has not become distorted in that direction. Since all of our graduates must work in general practice, there has always been a strong continuity between our education and our practice. In 1984, in an article comparing medical and chiropractic education (Coulter, 1984)⁵ this same point is made. Medical students train in very exotic settings, the teaching hospital, and under very exotic conditions when in reality only five per cent of all physician/patient contacts result in hospi-

* They found 1,000 pre-clinical hours excessive. CMCC has 3,427 hours.

talization. In many ways our lack of acceptance into hospital settings has reinforced our status as general practitioners. Although we offer postgraduate education in the clinical and roentgenology residences, these have not given rise to specialties and, hopefully, never will. What we do require is specialists (persons with advanced knowledge and skills) but not specialties.

Traditionally, chiropractors have been shown to be persons who are caring, compassionate and dedicated to patients. They were not, however, always committed to learning, rationality and science. With the move to university trained students, however, this has drastically changed.

The problem for us now is how to find the correct balance between the traditional values and academic demands.

Our programme still focuses very heavily on prevention but in areas such as nutrition and exercise much more knowledgeably than in the past. In an independent study conducted for Ryerson College, we were judged to have the strongest programme in nutrition of all the health sciences with the exception of nutrition.

The major problem here is that the game has changed considerably. Areas like exercise, nutrition, lifestyle counselling and health promotion have now become disciplines in their own right and it becomes increasingly difficult to keep up with such developments. Chiropractic used to be amongst the leaders in these areas, partly because no one else was bothering. We, therefore, resembled the one-eyed person in the land of the blind. Our challenge will be to remain as knowledgeable as possible. To do this, our faculty are seeking advanced degrees or qualifications in this area (e.g. the master's programme in nutrition; the fellowship in sports science).

In summary, we have maintained a generalist degree even in the face of an exploding bio-medical science base, but are now facing the same kind of knowledge explosion in the holistic components of the paradigm and in the social sciences.

Purpose of our Education

Once again, CMCC fares well in this respect. Much of our programme is oriented towards educating the student into our values, attitudes, principles, philosophies. No other health science in Canada that I am aware of has the equivalent of what we term principles. Furthermore, CMCC itself reviewed the principles courses and that of the other chiropractic colleges in 1982. It was our opinion then, and one expressed by several of them, that ours was one of the most systematized attempts to create a coherent, consistent, approach to principles; to create, in other words, a body of knowledge. Our students receive lectures on our history, our rationales, our science, our philosophy, our ethics on professionalism, and on jurisprudence.

Furthermore, while the basic sciences are strong at CMCC, and important, the overwhelming focus is on chiropractic. In a comparison in 1983 with the Californian colleges, CMCC had some 2400 hours in chiropractic subjects, compared to 1600 hours for them. On the other hand, all of them taught

more basic science than CMCC.

A major weakness, however, is a complete absence of any of the humanities in our programme and, with the exception of psychology, the absence of the social sciences. To the extent that we claim to be holistic practitioners, the absence of an education in basic forms of human interactions, the social institutions and structures that impinge upon such interactions and health, is as serious an absence as it would be if we decided to stop teaching anatomy or physiology. Likewise, our students receive a minimal education in the structure of the health care system and nothing in the politics of health. Although they now receive an introduction to issue and policy analysis in community health, this constitutes only four hours in their total programme. For the most part, our students are not socially or politically literate. This problem is exacerbated by the fact that we recruit students with a science background with no requirement for a humanities or social science credit.

Baccalaureate Education

In this area, partly through choice and partly through CCE requirements, we do favour science baccalaureates. However, we have also accepted persons with a range of degrees:

1985 - B.Sc.	59
B.A.	13
B. Phe.	7
B. Scn	2
B. Ed.	2
M. Sc.	4
M. Ed.	1
Ph.D.	1
	<hr/>
	89

In addition, in 1984 we also accepted persons with the following degrees: B.S.W., B. Comm., M.A., M.B. Furthermore, since we also place great importance on the interview in which practitioners participate, we do look closely at personal attributes in addition to academic standing. We try to choose those we feel will be good practitioners. How well do we do? This is difficult to say, but we consider it of sufficient importance that in the fall we shall be conducting an external review of our recruitment system. Subjectively, those of us who also teach at the university find CMCC students a delight to teach and, on the average, better and more committed than university students. The problem is no student, no matter how good, can handle our programmes unless they have a good background in the sciences. One solution would be to require the student to complete a degree prior to entry and insist it includes science, arts, humanities and social science credits. Another is to lengthen our own programme by adding such programmes to CMCC. The latter would mean more costs for the students and for the profession.

Learning Skills

In this area, CMCC is at the forefront in chiropractic education.

For several years, CMCC has accepted the fact that educational efforts should be towards developing a student committed to self-learning. The first positive step towards it, however, was the establishment of a research requirement for graduation. Here the students must select and work independently on an original research project. However, the approach has found its fullest expression in diagnosis where CMCC has introduced problem based learning. The purpose here is to educate the student in decision making and to relate learning to the solving of diagnostic problems. CMCC developed the first chiropractic portable patient problem pack (P4) for this purpose.

More recently, CMCC has also introduced competency based learning in the area of technique. This is an attempt firstly to isolate the clinical competencies (both effective and psychomotor) and to establish set levels of performance and to evaluate these levels. Students are not permitted to advance until they can perform certain skills at, for example, a 90% competency level. In the past year, CCE has moved to require all colleges to initiate competency based clinical education.

A third area developed for self-directed learning is simulated learning. CMCC has available to its students a whole range of audio-visual material, mannequins, and live actors to allow the student to acquire and evaluate their skills. This is used for heart-sound recognition, eye, rectal, vaginal, breast examinations etc., where we can duplicate a whole range of conditions for the students' education. The student, for the most part, pursues these studies independently in the Library.

A fourth area has been the development of information retrieval skills. Through computer search capabilities, and because of CRAC, students now graduate with superb skills in accessing the literature. With the research courses, they are also trained in the critical analysis of research literature. A future development here will be the initiation of clinical librarianship. At the moment, a student working up a case in the clinic is expected to review the relevant literature and CRAC has proved to be invaluable in this area. Again, CMCC is amongst the first colleges in the world to establish a CRAC type system. Since all the articles reviewed in CRAC are available in the library, this generation of chiropractic students is the most literate we have ever produced, and are now publishing literature reviews prior to graduation.

The problem we face is that still far too much of our programme, despite the above, consists of lectures. Unfortunately, our profession still treats the colleges as trade schools and insists on hourly requirements for subjects. Beside the obvious inconvenience of this, its validity is also suspect. Assuming a student has 200 hours in anatomy or x-ray, in no way ensures they are well educated or competent in those subject matters.

Clinical Skills

Many of the above also address the question of delineating clinical skills. However, CMCC has also initiated assessment of clinical skills. In the past, a student entered the clinic, met certain requirements and graduated. This has now changed.

Firstly, the student must pass an entrance examination to get into the clinic. Secondly, the student must pass two OSCE evaluations. OSCE stands for objective structured clinical evaluation, and CMCC was possibly the first chiropractic college in the world to introduce this system, although it is now used by several other colleges. The first OSCE, in the fall, assesses the students' competence in physical examination; the second, in mid-term, assesses clinical reasoning in the areas of diagnostic, therapeutic and prognostic skills; and the third, the exit exam, tests whether a student has reached a level of competence to manage patients without supervision. The strength of OSCE is that it is objective and not subjective. Further, its development forced the College to spell out the minimum competencies for a student to graduate. If that does not seem very significant, our profession has yet to establish any objective minimum level of continuing competency for practitioners and has no objective system for evaluating those getting a licence for the first time.

The outstanding problem here is really the one medicine shares, the appropriateness of the clinical setting, but for totally different reasons. The teaching clinics do more closely resemble practice clinics, but we now know their patient populations are atypical and we know that the students are not exposed to sufficient pathology, and a sufficient range of health problems. The problem is practically the reverse of medicine's. Three years ago, CMCC began the process of developing a new model for a teaching clinic. Firstly, we examined several other colleges. Secondly, we concluded that our clinic is really an intern-based clinic and not a clinician-based clinic. While it does develop independence in the student, it does not expose them to exemplary role models, that is, they have good teachers but they do not experience those clinicians as clinicians. This means they may never observe exemplary management given by outstanding clinicians simply because our clinicians are, in fact, not managing the patient, the student is. Thirdly, we have concluded that we need a compromise between what we have and the teaching hospital. We would like to create a clinic containing several distinct elements. To aid in this, we have established the specialty clinics. If we can encourage the field to use these, and encourage outstanding practitioners to serve in them, or encourage them to run part of their clinic in our faculty, we could establish a limited practitioner-based system. Unfortunately, this requires that the profession undertake a fundamental change in attitude and develop the habit of extensive intra-professional referral.

This past year, CMCC has turned to the larger question of an integrated curriculum structure. We established two committees, the first called the **Curriculum Development Group** whose function is to review every single course at CMCC, to document what is being done, what ought to be done, and what resources are required. A second group, chaired by Dr. A. Grice and using outside field practitioners, is called the **Paradigm Development Group**. Its function is first to establish agreement on the major principles/rationales of chiropractic

and second, to examine our total curriculum to see if the curriculum is an expression of these principles, and to see if the expression is consistent and coherent over all the divisions (i.e. is it integrated). If, for example, homeostasis is a fundamental principle, is it taught explicitly and if so, where, and further is it expressed as a principle *throughout* all our programmes.

If CMCC is successful in completing this task, it will be possibly the first health science institution to have a genuinely integrated curriculum structure.

Enhancing Faculty Involvement

Practically everything described above has been the result of faculty development. CMCC provides teacher effectiveness programmes at the College put on by Seneca College; we support faculty in university programmes teaching problem based learning; we bring onto campus university experts to train our faculty in these new educational techniques. We allocate development funds and travel funds to send faculty to seminars etc., and we hold several annual development days or retreats. It is this development that has made CMCC a leader in chiropractic pedagogy.

Conclusion

In summary, it is clear that in many areas, chiropractic educationalists have responded very well to the types of concerns addressed here. In part, perhaps this has been a matter of "luck" rather than planning. Excluded from mainstream health education and from their related health institutions such as the teaching hospitals, we have had to evolve our own educational forms and, therefore, to evolve a model of more direct relevance to chiropractic practice. However, in the more recent developments (problem based, competency based, simulated based education), these have been planned responses. In the Canadian context, this work, and particularly the attempt to develop an integrated curriculum, has placed the College very favourably vis-a-vis the other health sciences. There are, however, some major outstanding problems. Most can be reduced to the simple fact that there remains too much to be accomplished within too short a time. While there is an urgent need to add new programmes (e.g. social sciences), there is simply no available time. Either the programme is extended or the requirements for entrance altered. Both solutions would involve additional costs for the students and in one solution, additional costs for the field.

For the most part, we know what the problems are and although we may not always know the solution, we are actively engaged in the discussion. For most of our history, chiropractic education struggled simply to be as good as the other health sciences. For perhaps the first time in our history, we have the possibility to be the very best. Not the very best perhaps at everything, but the very best at those things we have chosen as important and significant, and by which we wish to be judged.

"For all sad words of tongue and pen
the saddest are these: It might have been."

J. Whittier⁶

What kind of chiropractic physician for the twenty first century?

"Caring, compassionate, dedicated to patients ... committed to work, learning, rationality, science and to serving society. Ethically sensitive, with moral integrity ... with equanimity, humility and self-knowledge."

Those qualities that should characterize all those who wish to lay claim to the title - healer.

References

- 1 Flexner, A. Medical Education in the United States and Canada: A Report to the Carnegie Foundation for the Advancement of Teaching. Bulletin No. 4, Boston, Massachusetts: Updyke, 1910.
- 2 Physicians for the Twenty-First Century. Association of Medical Colleges. The GPEP Report, 1984, Introduction pg xi
- 3 Ibid. Introduction pg xiii
- 4 Ibid. Page 9.
- 5 Chiropractic and Medical Education. A Contrast in Models of Health and Illness. The Journal of the Canadian Chiropractic Association. Vol 27:4. Dec., 1983.

ROBERT & FILS/SON Inc.

Supplying:

- BIO-VITA NUTRITIONAL SUPPLEMENTS
- Dr. RECKEWEG HOMEOPATHIC SPECIALITIES
- STANDARD PROCESS LABORATORIES
- THERAPEUTIC FOODS COMPANY
- VITAMIN PRODUCTS COMPANY

7521 rue Boyer, Montreal, Quebec H2R 2R9
Telephone (514) 274-2568
(416) 629-2699 in Ontario