

# Keeping up with the evolution of healing: Attitudes of Dalhousie medical students toward the integration of CAM into the undergraduate medical curriculum

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**Objectives:** This study investigated the knowledge and attitudes of undergraduate medical students at Dalhousie Medical School toward complementary and alternative medical therapies (CAM). It also sought to assess the level of interest in integrating CAM education into the medical curriculum. Based on this study and the current literature, recommendations are given for the integration of CAM in the undergraduate medical curriculum at Dalhousie.

**Methods:** An anonymous self-report questionnaire was distributed to undergraduate medical students at Dalhousie Medical School. The questionnaire sought information on knowledge of CAM therapies, personal experience, attitudes toward CAM, and level of interest in CAM education.

**Results:** The majority of respondents (99.2%) felt that familiarity with CAM was important for future physicians and 72.5% believed that CAM should be a formal part of the medical curriculum. The most popular choice for integration was using case studies that address patients using both conventional and CAM therapies. Half of the respondents (50.2%) have used CAM therapies. Self-reported knowledge of CAM varied widely with the discipline and was acquired most frequently from personal use (35%) and least frequently from medical school lectures (7%). General attitudes toward the importance of physician knowledge of CAM were positive, with respondents most strongly agreeing that physicians need to be aware of safety risks.

**Conclusions:** Medical students are interested in being educated about CAM therapies. Medical schools should make appropriate curriculum reforms to train future physicians to address the changing needs of the patient population with respect to CAM use. Recommendations are given for the integration of CAM into the undergraduate medical curriculum.

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## Introduction

### What is CAM?

Discussion of Complementary and Alternative Medicine (CAM) within the conventional medical community has often been met with skepticism and dismissal. Long associated with a lack of satisfactory scientific basis, these therapies have been considered by many to be incompatible with the philosophy of conventional medicine. However, attitudes have shifted in response to increasing research and recognition of the widespread use of CAM in the Western world. In turn, the definition of CAM has evolved.

The Cochrane Collaboration has adopted a definition based on the premise that CAM includes a broad range of practices that differ from the “politically dominant health system of a particular society or culture in a given historical period”<sup>1</sup>. Others have defined CAM therapies as practices “not taught widely in medical schools nor generally available in hospitals”<sup>2</sup>. However, the latter definition is quickly becoming obsolete as medical schools throughout the Western world acknowledge the changing needs of the health care system. A combination of several key defining elements was used for this study:

CAM includes a broad range of health care practices that are used to heal or prevent illness and also to maintain well-being and enhance quality of life. The commonality

among these systems is that they differ from the politically dominant one in a given culture at a given time. They are usually not taught in medical schools nor provided in hospitals.

### Why is knowledge of CAM important?

Use of CAM therapies is increasing. A 1998 nation-wide telephone survey of American adults (n=2055) indicated that between 32% and 54% of the population were using some form of non-conventional medical therapy (varying with sociodemographic group), with total visits to alternative medical practitioners exceeding the total number of visits to all US primary care physicians<sup>3</sup>.

Regardless of the reason, increasing numbers of patients are turning to CAM therapies, and in many cases they are not informing their primary care physician. In the United States, it has been documented that approximately 40% of patients using a CAM therapy do not disclose their use to their physician<sup>3</sup>. There may be a number of reasons for this, including the anticipation of a negative response from the physician, a sense that the physician is not interested or that disclosures of CAM use are irrelevant, and lack of confidence in the physician’s ability or willingness to contribute useful information<sup>4</sup>.

Investigations of physicians’ attitudes toward CAM reveal that most believe that their knowledge is lacking<sup>5</sup>. This raises

urgent questions about the quality of health care being delivered as evidence mounts for the both the effectiveness and potential harm of CAM therapies and their potential interactions with conventional medical practices. Health professionals are coming to appreciate the value of being familiar with CAM therapies in order to enhance communication with patients who use them, to increase skills in working with all practitioners involved in providing care for a patient, and to increase clinical options .

The public is searching for help in navigating through the complex web of available health care services, some of which may be harmful or may interact with their conventional treatments, but there is no gatekeeper to provide direction and advice. Perhaps by becoming knowledgeable about CAM therapies, effectiveness, and associated risks, physicians can act as true primary health care providers in concert with other health care practitioners to provide the best possible health care.

### **CAM in medical education**

At the core of preparing future physicians to respond to the growing trend of CAM use is the ability of the medical curriculum to adapt. As of 2000, 79 of 124 (63.7%) American medical schools offered education opportunities in CAM education in the undergraduate medical curriculum<sup>7</sup>. A study of medical schools in the European Union in 2001 found that 43 (40%) of the medical schools who responded to the survey offered courses on unconventional medicine<sup>8</sup>. A 1998 survey of Canadian medical schools indicated that 13 of 16 schools were offering education in CAM as part of the undergraduate curriculum<sup>9</sup>. A 2001 Japanese survey found that 16 (20%) of their medical schools offered CAM education<sup>10</sup>. However, there is significant variation in the nature and extent of the educational opportunities at various institutions.

Graduation from an accredited medical school implies a certain level of competency that is relatively consistent among graduates. Therefore, it is important to address the importance of consistent recommendations for the integration of CAM into medical education. Curriculum guidelines have been proposed by several bodies. The Society of Teachers of Family Medicine Group on Alternative Medicine has proposed a detailed list of guidelines based on the premise that graduating residents should have the knowledge, skills, and attitudes required to “function as unbiased advocates and advisors to patients about CAM”<sup>11</sup>. The Prince of Wales’s Initiative on Integrated Medicine published a detailed report on action required in the fields of research, regulation, education and training, and the delivery of integrated care<sup>12</sup>. In the field of education, the focus is on developing common core elements in the curriculum of every health care profession to give a foundation in both orthodox and complementary therapies with more emphasis on human, social and spiritual factors<sup>12</sup>.

### **Student Attitudes toward CAM**

Medical student support is a major factor in determining

the success of a curriculum change. A number of studies have been conducted at various medical schools throughout the United States, Canada, the U.K. and Australia to determine student attitudes toward CAM and its integration into the curriculum<sup>13-19</sup>. The attitudes have been consistently and overwhelmingly positive.

This study has been designed with the intent of elucidating the attitudes of students at Dalhousie Medical School to evaluate the likelihood of success of integrating CAM into the undergraduate curriculum as well as to elicit opinions about how this integration might be carried out successfully in our curriculum.

### **Curriculum at Dalhousie Medical School**

Currently, CAM is not a formal part of the curriculum at Dalhousie Medical School, though there has been some integration of CAM into COPS cases and the Clinical Epidemiology and Critical Thinking Unit. As well, students have the option of pursuing an elective in this area. Several years ago, a proposal was drafted outlining the goals and objectives for the integration of CAM in the medical curriculum. However, the proposal was not completed nor acted upon. Currently, there is a student initiative to complete a proposal for the COPS Curriculum Committee on integrating CAM into medical education at Dalhousie. The results from this study will be helpful in directing the proposal.

## **Methods**

### **Survey**

A survey was conducted using an emailed self-report questionnaire among first, second, third, and fourth year medical students at Dalhousie Medical School in April 2002 (n=360). The questionnaire was loosely based on questions used by two published studies<sup>1,16</sup>. A combination of closed-ended, Likert scale-type questions and open questions were used. Questions were modified and added in order to address the specific objectives of this survey.

Basic demographic data was obtained to determine relevant correlations of data. Other questions addressed familiarity with various CAM disciplines, personal experiences with CAM therapies, general attitudes toward CAM and physician practices, education and training in CAM (experience and interest), and how CAM might be integrated into the undergraduate medical curriculum at Dalhousie Medical School.

A definition of complementary and alternative medicine (CAM) was given at the beginning of the questionnaire to ensure that all respondents had an equivalent understanding of the basis of the survey. Therapies addressed in the questionnaire included chiropractic, acupuncture, osteopathy, homeopathy, naturopathy, traditional Chinese medicine, massage therapy, and herbal medicine. These therapies were chosen based on similar questionnaires conducted at other medical schools<sup>16,20</sup> and modified in consultation with a physician who is familiar with CAM therapies. Although this is certainly not an exhaustive list, it

represents common disciplines while maintaining the survey at a reasonable length.

### Data Analysis

Descriptive statistical analysis was performed on all data (calculation of proportions and means). A weighted score was determined for students' choices for the role of CAM in undergraduate medical education (first choice weighted at 3, second choice at 2, third choice at 1).

Linear correlations were determined with a Pearson product moment correlation coefficient and test statistic at a significance level of 0.01. Responses from students in all four years of medical school at Dalhousie were analyzed as a single population as responses did not vary by year ( $p < 0.01$ ).

### Assessment of Clinical Epidemiology Topics

As part of the first year Clinical Epidemiology and Critical Thinking course, students are asked to perform a critical analysis of the medical literature with respect to a specific clinical question of their choice. The topics chosen by each student for the last four years were obtained from the course director. The number of topics with a CAM-related theme was counted. Because the students freely choose the topics, they may serve as an indicator of the level of self-directed interest of medical students at Dalhousie in Complementary and Alternative Medicine.

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## Results

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### Demographics

Forty-eight (54.5%) first year medical students, 43 (47.8%) second year students, 16 (17.8%) third year students and 17 (18.5%) fourth year students responded to the survey. The respondents were 59.7% female and 40.3% male with an age range of 21 to 36 (median and mode = 25); 17.7% had an immediate family member who was a physician; 4.8% had an immediate family member who was a complementary medicine practitioner.

### Familiarity with CAM disciplines

Self-reported familiarity with the principles of CAM disciplines was variable among disciplines. The best-known

therapies were massage therapy, acupuncture, and herbal medicine (ranging from 79.8% to 73.4% who were either very or somewhat familiar with the principles). Knowledge was low with respect to osteopathy (91.9% of respondents were not at all familiar), traditional Chinese medicine, homeopathy and naturopathy.

Respondents who indicated familiarity with one or more disciplines were asked to indicate how they acquired that familiarity. The majority indicated that they became familiar with a CAM discipline through personal interest or use. Lectures in medical school were indicated by only a small number of respondents (Figure 1).

### Experiences/Practices

Of the respondents, 63 (50.8%) have used one or more of the complementary therapies listed in the survey. The most commonly used therapies were herbal medicine (26.6%), massage therapy (24.2) and acupuncture (10.5%). Of those who had used CAM, 77.0% felt that they had benefited from the experience.

### General Attitudes toward CAM

The attitude of medical students at Dalhousie toward CAM is positive. Respondents most strongly agreed that physicians should be able to identify safety risks associated with CAM use, that physicians should include questions about CAM in history taking, and that physicians should have some knowledge about the most common CAM therapies (Table 1).

Attitudes were generally neutral with respect to whether CAM therapies not tested in a scientific manner should be discouraged and whether CAM stimulates the body's natural healing powers.

There were no correlations between attitudes and year in medical school, age, residence, or having a physician or CAM practitioner in the family. There was also no correlation between attitudes and personal use of CAM, training in CAM, or opinion about whether CAM should be integrated formally or informally in the curriculum.

However, there were correlations between attitude and

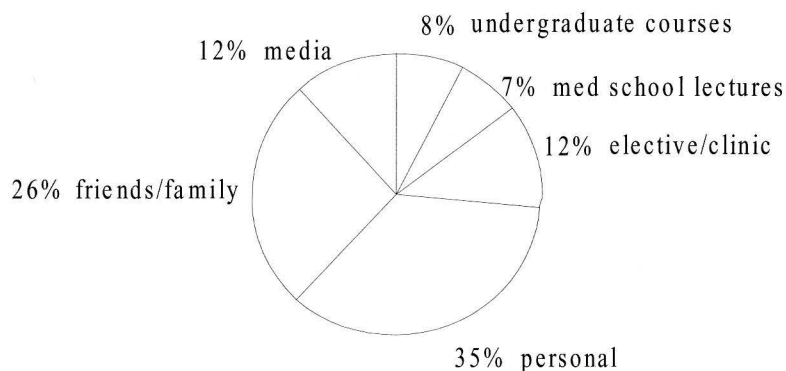


Figure 1. Source of medical students' familiarity with CAM

Attitude	Mean (scale 1-5)	95% C.I.	Interpretation
CAM is a useful supplement to regular medicine	4.056452	0.121493	Agree
CAM includes ideas and methods from which conventional medicine could benefit	4.104839	0.132435	Agree
CAM is a threat to public health	2.362903	0.166954	Disagree
CAM therapies not tested in a scientific manner should be discouraged	3.580645	0.165076	Neutral/ weakly agree
Most CAM therapies stimulate the body's natural healing powers	3.064516	0.128425	Neutral/ weakly agree
Physicians should have some knowledge about the most common CAM therapies	4.556452	0.09062	Strongly agree
Physicians should be aware of what CAM therapies are available in their geographic area	4.427419	0.093009	Agree
Physicians should be able to advise their patients about commonly used CAM therapies	4.040323	0.849669	Agree
Physicians should not discuss CAM therapies with their patients as it may prompt them to use them	1.879032	0.781834	Disagree
Physicians should include questions about CAM in history taking	4.685484	0.117412	Strongly agree
Physicians should be able to identify safety risks associated with CAM use	4.725806	0.106079	Strongly agree

**Table 1.** General attitudes towards CAM. C.I. = confidence interval

chosen specialty. Students who had indicated an interest in pursuing a specialty were more likely to disagree that CAM is a useful supplement, that CAM therapies stimulate the body's natural healing powers, that physicians should know about CAM therapies and be aware of those available in their area, and that physicians should be able to advise their patients about CAM therapies. Students interested in family medicine were more likely to agree with these statements ( $p < 0.01$ ).

### Education and Training

Of the respondents, 26 (30.0%) claim to have had some education or training in the area of complementary and alternative medicine. With the exception of one student, all respondents felt that familiarity with CAM is important for future physicians. The majority (72.5%) felt that it would be more appropriate for CAM to be a formal part of the medical curriculum (all students exposed) rather than an optional part (available for interested students).

Students were asked to rank their first, second, and third choices from a list of potential ways to integrate CAM into the undergraduate medical curriculum at Dalhousie. Once scores were weighted according to rank, the most popular choice was to integrate COPS cases that address patients using both conventional medicine and CAM (Figure 2). The second choice was to invite CAM practitioners to speak in the curriculum. This was chosen in preference to CAM practitioners speaking in an extracurricular series. Other choices are shown in Figure 2.

Students were most interested in learning about herbal medicine (89.5%), followed by acupuncture (87.9%) and

chiropractic (84.7%). Although osteopathy garnered the least interest, the percentage of students interested in learning about it was still high (71.0%).

### CAM themes in Clinical Epidemiology Papers

Of the current first year medical class, at least 14 papers of 87 (16.1%) addressed a CAM topic. In the previous year, the incidence was at least 7 papers of 88 (8%), and in the two years before that (data was pooled), at least 21 papers of 173 (12.1%) addressed CAM.

Common topics addressed the use of St. John's Wort, Echinacea, glucosamine, shark cartilage, fish oil, garlic, benefits of cranberry juice on urinary tract infections, benefits of red wine, use of acupuncture, music therapy, and various dietary, herbal and vitamin supplements.

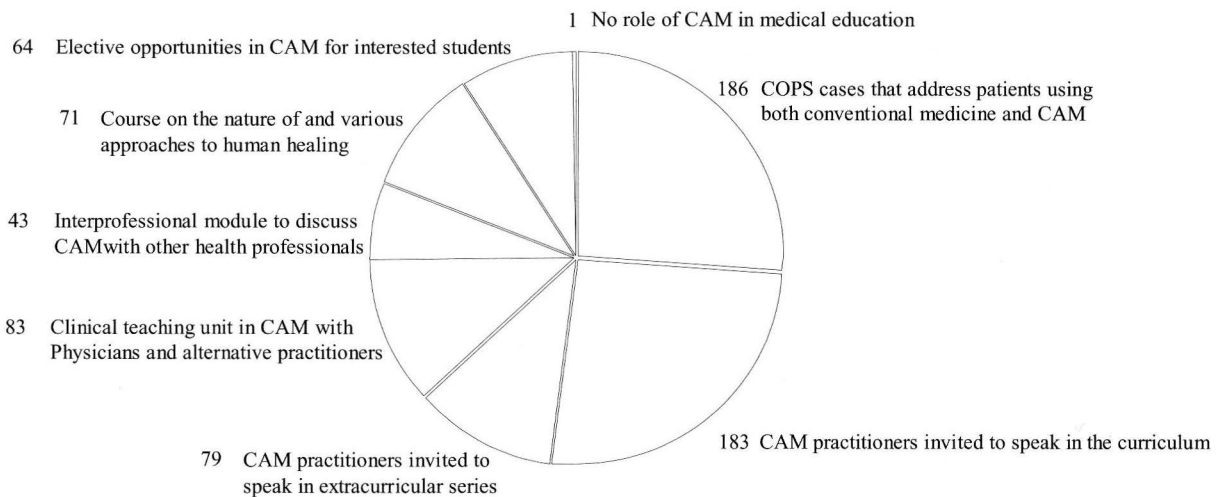
This gives an indication of a minimal proportion of first year medical students who have an interest in CAM that is significant enough to warrant their self-directed engagement in the evaluation of a CAM therapy.

## Discussion

### Medical Student Attitudes

This study reveals that many students at Dalhousie Medical School feel that exposure to Complementary and Alternative Medicine is important to the quality of their medical education. Of the respondents, 99.2 per cent felt that familiarity with CAM was important for future physicians. Other studies of medical student attitudes have found a substantial interest in integrating CAM into the medical curriculum, but none were as high as the interest indicated





**Figure 2.** Medical students' views on ideal role of CAM in undergraduate medical education at Dalhousie University (weighted scores: values are relative).

in this study<sup>14-17</sup>. A study of first year medical students at an American university indicated that 72% wanted exposure to alternative medicine during their training<sup>15</sup>, compared with 84% of first year medical students at the University of Calgary<sup>16</sup>. A study of first, third, and fifth year students at two universities in Melbourne, Australia indicated that 54% wanted some form of CAM training in the undergraduate curriculum<sup>17</sup>.

The level of student interest in CAM was also indicated by the proportion of students freely choosing to pursue a CAM topic for their first year clinical epidemiology critical analysis. In addition to this self-directed learning, a number of students (both undergraduate and post-graduate) have pursued electives in CAM<sup>6</sup>.

The reason for the consistent identification of CAM as an important part of medical education probably stems from a combination of medical students' own experience with CAM therapies (though self-reported knowledge was low in all studies), the widespread coverage of CAM therapies in the media, the increasing number of studies that validate the efficacy of certain CAM therapies, and the increasing realization that there are a number of serious health consequences that can arise from combinations of therapies, including conventional medical treatments.

Consistent with other studies, medical students at Dalhousie have generally positive attitudes toward CAM and believe that physicians should be able to practice with an awareness of CAM in order to provide the best health care. Clearly, there is a discrepancy between what medical students want from their undergraduate medical education and what they are receiving.

Although students' attitudes were generally positive about the value of CAM, there was some discrepancy as to why

they felt it was valuable. The overall attitude was neutral with regards to the mechanism of its efficacy (whether CAM stimulates the body's natural healing powers and whether scientific validation is important in encouraging CAM therapies).

This raises an important point about the nature of the integration of CAM into medical education. Evidence-based medicine is a standard for the acceptance of evolving medical practices and theories. Many argue that it is crucial to maintain this standard in considering the integration of CAM into conventional medical teaching<sup>1,2</sup>. Physicians who blindly accept or advocate CAM therapies can be just as harmful to the quality of care as those who refuse to acknowledge its importance. One study found that of 56 American medical schools offering CAM-related courses, only four took a critical approach<sup>22</sup>. A balance must be sought between respecting the diverse philosophical foundations of CAM therapies and the medical community's ability to justify the acceptance of their place in health care.

### Integrating CAM into the Curriculum

Given the diversity of students' exposure to CAM and the importance of providing relatively consistent education to future physicians, the nature of the integration of CAM into the curriculum must be carefully considered. There are multiple aspects to be addressed, but foremost is whether the integration should be part of the required or optional components of the curriculum.

The majority (72.5%) of respondents to this survey felt that CAM should be a formal part of the medical curriculum. This implies that all students would be exposed rather than just those who chose to pursue a self-directed or elective study of CAM. The most popular choices of Dalhousie

medical students for modes of integration are discussed below in "Recommendations".

The students' support for integrating CAM formally into the curriculum at Dalhousie is promising for the potential success of implementing a curriculum proposal. Advocates of integrating CAM argue that the material must be part of the required curriculum in order for it to elicit critical evaluation. There is the danger that informal integration of CAM through electives or self-directed study may lack the structure necessary to encourage critical appraisal of the efficacy and safety of CAM therapies.

### Limitations of this Study

Response bias may have had an impact on the nature of the responses to this survey, since students who were already interested and/or knowledgeable about CAM were probably more likely to respond. Although the response rate was less than ideal, the results are strong enough to warrant some conclusions and further investigation.

### Recommendations

The medical literature includes a number of evaluations of CAM courses that have been integrated into medical school curricula<sup>3-9</sup>. Methods of integration vary from multimedia electives (lectures, films, observation, hands-on experience, discussions)<sup>23</sup> to full integration of CAM into family medicine residencies<sup>27</sup>. The specific guidelines proposed by many of these evaluations have common elements that apply across the spectrum of course modalities and may be used to guide the development of new courses, and perhaps eventually a curriculum guideline that is used consistently among medical schools of the Western world.

The following recommendations are made with regard to introducing a CAM curriculum at Dalhousie Medical School (adapted from recommendations of the Society of Teachers of Family Medicine<sup>11</sup>, Dr. Ste-Marie's drafted proposal for CAM integration at Dalhousie, and the student values elucidated in this study):

### Goals:

- to facilitate the acquisition of the knowledge, skills, and attitudes required to allow future physicians to function as unbiased advisors to patients about CAM, including sufficient knowledge of commonly used CAM therapies to counsel patients about:
  - i) potential harm/ risks
  - ii) potential interactions with other therapies (conventional or complementary)
  - iii) potential beneficial effects on disease, prevention, and maintenance of health
  - iv) to facilitate the ability of future physicians to communicate effectively with CAM practitioners to optimize the health care given to the patient

### Learning Objectives:

- prevalence and patterns of use of CAM, including

regional variation, the role of a patient's social/ ethnic/ cultural system in determining health choices, and reasons why a patient may seek CAM therapy.

- legal issues regarding referral, documentation, and collaboration with unconventional practitioners.
- insurance reimbursement for CAM therapies
- application of the principles of evidence-based medicine to CAM
- training, licensing, and credentialing standards for practitioners of the major CAM therapies
- basic principles, philosophy, clinical applications, potential adverse effects, efficacy, cost-effectiveness, and sources of reliable information regarding the major CAM therapies (this study indicated that educational interest was highest in the areas of herbal medicine, acupuncture, and chiropractic, though there was substantial interest in all listed therapies)

### Attitude Objectives:

- to be supportive of patient choices
- to understand the role of CAM use in patient-centered medicine, including the importance of open communication
- to provide patients with unbiased information on potential risks and benefits of therapy
- to respect the potential of certain CAM therapies to be equally or more effective for certain conditions than conventional practices.
- a willingness to collaborate with CAM practitioners when appropriate by identifying qualified CAM practitioners (ensures patient access to quality CAM)
- to understand and respect cultural/ ethnic influences on health care choices.

### Skills Objectives:

- to apply principles of evidence-based medicine to assess CAM therapies (including safety, efficacy, cost-effectiveness)
- acquire the ability to inquire about patient use of CAM in a non-threatening and non-judgmental manner
- acquire the ability to counsel patient on how to integrate conventional and CAM therapies to maximize benefit and/or minimize harm

Students may choose to pursue basic practical training in CAM therapies for clinical application (for example, acupuncture, nutritional medicine, herbal medicine, relaxation techniques).

### Implementation in undergraduate curriculum at Dalhousie Medical School:

Options listed in survey:

- COPS cases that address patients using both conventional medicine and CAM (rated 1<sup>st</sup> choice by respondents)

- CAM practitioners invited to speak in the curriculum (rated 2<sup>nd</sup> choice by respondents)
- Clinical teaching unit in CAM with physicians and alternative practitioners (rated 4<sup>th</sup> choice – 3<sup>rd</sup> choice was an extracurricular integration)
- Interprofessional module to discuss CAM with other health practitioners (5<sup>th</sup> choice)
- Course on the nature of and various approaches to human healing (6<sup>th</sup> choice)
- Elective opportunities in CAM for interested students (least popular choice)

#### Other potential modes of integration:

- Use of simulated patients using CAM therapies in Patient-Doctor Units
- Further integration of CAM into Clinical Epidemiology and Critical Thinking Unit (Med 1)
- Integration of objectives into Population Health Unit (Med 2)
- Specific knowledge, attitudes, and skills objectives integrated into Clinical Clerkship Units

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### Conclusion

This study reflects that Dalhousie medical students are interested in learning about complementary and alternative medical therapies. It is well established that complementary and alternative medicine is widely used among the public. Students need to understand this trend and how it will affect the way they will practice medicine.

With student interest already established, the path is paved for the integration of CAM into the formal medical curriculum. By developing and implementing a set of goals and guidelines for this integration, Dalhousie will be able to prepare its medical students for the evolving needs of the health care system.

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### References

- Zollman, C. (1999) ABC of Complementary Medicine: What is complementary medicine? *BMJ* 319:693-696.
- Eisenberg, DM, Kessler RC, Foster C *et al.* (1993). Unconventional medicine in the United States – prevalence, costs, and patterns of use. *New England Journal of Medicine*. 328:246-252.
- Eisenberg DM, Davis RB, Ettner SL *et al.* (1998) Trends in Alternative Medicine use in the United States: 1990-1997. *JAMA* 280(18): 1569-1575.
- Adler SR, Fosket JR. (1999) Disclosing complementary and alternative medicine use in the medical encounter. *Journal of Family Practice* 48:453-458.
- Carlston M. (1998) The revolution in medical education: Complementary medicine joins the curriculum. *The Healthcare Forum Journal* 41(6): 25-31.
- Gold E, Kaufman DM (unpublished) From students' brown bag lunches to curriculum integration: Medical education in Complementary and Alternative Medicine (CAM).
- Bhattacharya B. M.D. programs in the United States with Complementary and Alternative Medicine Education opportunities: an ongoing listing. *The Journal of Alternative and Complementary Medicine*. 6(1): 77-90.
- Barberis L, De Toni E, Schiavone M *et al* (2001). Unconventional medicine teaching at the universities of the European Union. *The Journal of Alternative and Complementary Medicine*. 7(4): 337-343.
- Ruedy J, Kaufman DM, MacLeod H. (1999) Alternative and complementary medicine in Canadian medical schools: a survey. *CMAJ* 160(6): 816-817.
- Tsuruoka K, Tsuruoka Y, Kajii E. (2001) Complementary medical education in Japanese medical schools: a survey. *Complementary Therapies in Medicine* 9(1):28-33.
- Kliger B, Gordon A, Stuart M, Sierpina V. (2000). Suggested curriculum guidelines on complementary and alternative medicine: recommendations of the Society of Teachers of Family Medicine Group on Alternative Medicine. *Family Medicine* 31(10):30-33.
- Coates JR and Jobst KA (ed). (1998). Integrated healthcare: a way forward for the next five years?: A discussion document from the Prince of Wales's Initiative on Integrated Medicine. *The Journal of Alternative and Complementary Medicine*. 4(2): 209-247.
- Chez RA, Jonas WB, Crawford C. (2001). A survey of medical students' opinions about complementary and alternative medicine. *American Journal of Obstetrics and Gynecology* 185(3):754-757.
- Bagniet J, Boon H, Ostbye T. (2000). Complementary/alternative medicine: comparing the views of medical students with students in other health care professions. *Family Medicine* 32(3):178-184.
- Greiner KA, Murray JL, Kallail KJ (2000). Medical student interest in alternative medicine. *The Journal of Alternative and Complementary Medicine* 6(3): 231-234.
- Duggan K, Verhoef MJ, Hilsden, RJ (1999). First-year medical students and Complementary and Alternative Medicine: Attitudes, Knowledge and Experiences. *Annals RCPSC* 32(3): 157-160.
- Hopper I, Cohen M. (1998). Complementary therapies and the medical profession: a study of medical students' attitudes. *Alternative Therapies Health Med* 4(3): 68-73.
- Derr S, Shaikh U, Rosen A, Guadagnino P. (1998) Medical students' attitudes toward, knowledge of, and experience with complementary medicine therapies. *Academic Medicine* 73(9): 1020.
- Perkin MR, Percy RM, Fraser JS. (1994). A comparison of the attitudes shown by general practitioners, hospital doctors and medical students towards alternative medicine. *Journal of the Royal Society of Medicine* 87: 523-525.
- Verhoef M, Best A, Boon H (2001). Email survey of Canadian medical educators. Health Canada, Health System Division.
- Marcus DM. (2001). How should alternative medicine be taught to medical students and physicians? *Academic Medicine* 76(3): 224-229.
- Sampson W. (2001) The need for educational reform in teaching about alternative therapies. *Academic Medicine* 76(3): 248-250.
- Laken MP, Cosovic S. (1995) Introducing Alternative/Complementary Healing to Allopathic Medical Students. *The Journal of Alternative and Complementary Medicine*. 1(1): 93-98.
- Jeffries WB. (2001) A fourth-year elective course in alternative medicine. *Academic Medicine*. 76(5): 525-526.
- Barker S, Horn S, Owen D. (2000). 'I wished I was the patient'. An evaluation of a complementary medicine module for third year medical students. *Medical Education*. 34:159.
- Greenfield SM, Wearn AM, Hunton M, Innes MA. (2000) Considering the alternatives: a special study module in complementary therapy. *Complementary Therapies in Medicine*. 8(1).
- Kemper KJ, Vincent C, Scardapane JN. (1999) Teaching an integrated approach to complementary, alternative, and mainstream therapies for children: a curriculum evaluation. 5(3): 261-268.
- Owen D, Lewith GT. (2001) Complementary and alternative

medicine (CAM) in the undergraduate medical curriculum: the Southampton experience. *Medical Education* 35:73-77.

29. Owen D. (1999) Familiarizing medical students with complementary and alternative medicine: encouraging new attitudes and ideas. *Complementary Therapies in Medicine* 7(1): 38-41.

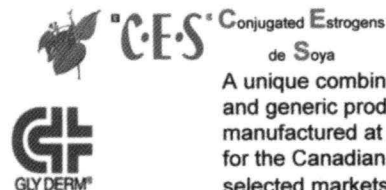
### About the Author

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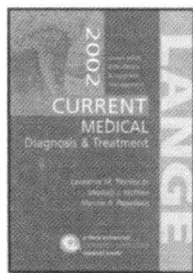
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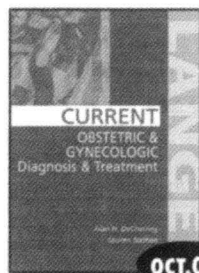
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Locum support is provided by the Ministry of Health, Underserved Area Program. \$300.00 per day honorarium, travel and accommodations plus \$590.00 stipend or fee for service.

We have full time and locum positions available for:

Family Physicians	Psychiatrist
Obstetrician/Gynecologist	Anesthetist
General Internist	

Come and join our dynamic Health Care Team

Please forward CV: Brenda Corbeil, Human Resources Department, Timmins and District Hospital, 700 Ross Avenue East, Timmins, Ontario, P4N 8P2 Telephone: 705-267-6371; fax: 705-360-6008; e-mail: [jobs@tadh.com](mailto:jobs@tadh.com)