

An Environmental Scan of

Best Practices in Public Health Undergraduate Medical Education

REPORT 4:

Interviews with International Experts

MARCH 2009

Prepared by the Nevis Consulting Group for the
Association of Faculties of Medicine of Canada (AFMC)
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This Environmental Scan was conducted from February to May 2008 and produced by the Nevis Consulting Group:

Michael Rowlands
President, Nevis Consulting Group Inc.

Robert Spasoff, MD, MSc
Emeritus Professor of Epidemiology & Community Medicine
University of Ottawa

Report 5 (Teaching Methods) and additional material on education methods were contributed by:

Ingrid Tyler MD, CCFP, MHSc, MEd
Community Medicine Resident
Dalla Lana School of Public Health
University of Toronto

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For enquiries: publichealth@afmc.ca

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I have yet to meet a UG medical student in Australia who didn't think PH was a waste of time and totally uninteresting. They believe they have come to medical school to learn about medicine and find PH makes little or no contribution to this objective. **La Trobe**

The original concept of this study called for data to be gathered mainly from interviews with Undergraduate course directors in Canada's 17 schools of medicine and from peer-reviewed/grey literature scans. It was later agreed, however, that the work might well benefit from a small number of interviews with selected experts at overseas universities, who are involved in dealing with similar challenges to those in Canada. In this way, it was hoped to identify some additional insights from further afield.

Six candidates were selected for interview on the basis of the relevance of their published literature in most cases. One or two made the list because they were already known personally to the authors of this report. Some others were also asked to participate, but were unable to do so, mainly because their areas of interest and/or responsibility had changed over the years. The final interviewees were from the US, the UK and Australia.



1. THREE GOOD IDEAS

A. MONASH HEALTH ENHANCEMENT PROGRAM ¹

Being a medical student is a tough assignment. It lasts longer than most degree courses and students can be subject to serious stress arising from fears about their own performance, family expectations, dealing with death and suffering and so on. With stress can come depression and other forms of emotional distress that studies suggest affect as many as 30% of medical students. Alcohol (45%) and other substance abuse (22%), which has been shown to peak during residency years in Australia, can also take their toll.

Traditionally, medical schools have not done very much about this, leaving it to the students to sort out their own problems, or referring individuals to university medical services. Monash University in Melbourne, Australia, however, has been offering their students stress management workshops as an integral part of their first year curriculum since 1992. Their new medical curriculum introduced in 2002 includes a more broadly-based Health Enhancement Program to foster student well-being and to promote self-care. This is a mindfulness-based stress management program that has also been used successfully with nurses, social workers, counsellors and psychotherapists.

The main objectives of HEP are to help students to:

- Learn self-care strategies to manage stress and maintain a healthy lifestyle
- Enhance their physical health
- Establish clinical skills in managing stress and healthy lifestyle change
- See how HEP content derives from biomedical, psychological and social sciences
- Understand the mind-body relationship
- Develop a holistic approach to healthcare
- Grow support among the student body
- Improve performance

The course includes 40 hours of combined face-to-face teaching and self-directed learning, interwoven with eight lectures throughout the semester that provide the evidence base on which HEP is constructed. The class is then split into groups of 15 or so students to participate in the Stress Release Program (developed originally for the Royal Australian College of General Practitioners to help doctors with personal and professional stress) and the ESSENCE lifestyle program, that allows participants to explore a lifestyle model based on seven topics that are discussed on a weekly basis.

¹ Craig Hassed: "*Healer Know Thyself: Mindfulness in the training of health professionals*" - Psychotherapy in Australia, Vol 13 No4, August 2007

The Monash program is possibly the first of its kind in the world to be fully integrated into core curriculum and it is now being piloted at other medical schools. It has the added advantage of providing tools that students may likely find useful in their practice after graduation.

B. SYDNEY'S FAMOUS EIGHT ESSENTIAL QUESTIONS²

The University of Sydney has developed the famous **8 Essential Questions** that enable users to link PH considerations to every medical situation. It has been demonstrated consistently that the clear articulation of learning outcomes and the use of a student toolkit of eight questions can provide a simple framework that will help students derive a population perspective in relation to clinical problems. The eight essential questions can also be used to develop learning outcomes, learning activities and assessments to achieve the goal of integrating population health within medical curricula in a clinically relevant and engaging manner.

The PH teaching group in Sydney first used the 8 Essential Questions to help them bridge the gap between individual and population health care when building their whole curriculum. This mental prompt relates directly to the theme goals shown in the diagram below. Using the example given in the Trevena paper, we can consider the cardiology block at the point where students discuss a patient with cardiac failure. During that week, they learn about the anatomy of the heart and great vessels, clinical signs, and symptoms of heart failure and the physiology of flow and pressures within the circulation. When considering how the Eight Essential CDT³ Questions might apply to this problem they learn about the increasing prevalence of heart failure with age, the potential burden from an ageing population, the causes of heart failure, prevention through reducing coronary heart disease, the high costs of hospitalization attributable to heart failure, current government policies, and recommended practices to improve health outcomes and reduce the incidence of heart failure in our community.

² Lyndal J. Trevena, et al: Population Health Integration Within a Medical Curriculum: An Eight-Part Toolkit- AM J Prev Med 2005; 29(3)

³ Community and Doctor Theme

The community and doctor theme across the 4-year degree structure

| | | | | | |
|-------|---------------------------------|------------------------------------|----------------------|------------|------------|
| BCS | Stage 1 | | | | |
| Pt-Dr | Block 1 | Block 2 | Block 3 | Block 4 | Block 5 |
| CDT | Foundation | Drug & alcohol/ musculoskeletal | Respiratory | Hematology | Cardiology |
| PPD | | | | | |
| BCS | Stage 2 | | | | |
| Pt-Dr | Block 6 | Block 7 | Block 8 | Block 9 | |
| CDT | Neurosciences | Gastroenterology & endocrine | Renal & reproductive | Cancer | |
| PPD | | | | | |
| BCS | Stage 3 | | Stage 4 | | |
| Pt-Dr | Integrated clinical attachments | | Clinical rotation | | Elective |
| CDT | | | | | |
| PPD | | | | | |
| BCS | | | | | |
| Pt-Dr | Clinical rotation | Clinical rotation | Clinical rotation | Pre-intern | |
| CDT | | | | | |
| PPD | | | | | |



Community and doctor theme goals (individual and community level)

After completing the course, graduates will be able to:

| | | | |
|--|--|---|---|
| 1. Evaluate the distribution of and risk factors for disease and injury, and understand how to use disease- and injury-prevention practices in the care of individual patients and communities. (Q1-3) | 2. Make evidence-based, ethical, and economically responsible decisions about the most appropriate management of health problems in individuals and in communities. (Q4,5) | 3. Identify the economic, psychological, occupational and sociocultural factors that contribute to the development and/or continuation of poor health, and explain how it affects individuals and communities. (Q6,7) | 4. Evaluate the economic, political, social, and legal factors that determine the way individuals and communities respond to health problems, and describe how public and population health strategies are systematically planned and implemented. (Q8) |
|--|--|---|---|



Student toolkit for population perspectives to health problems
Eight essential CDT questions

| | | | |
|--|--|--|--|
| Q1. DISTRIBUTION How common is the problem in the total population and in different subgroups? | Q3. PREVENTION How can the problem be prevented? | Q5. EVIDENCE BASE How strong is the evidence about the distribution and cause of the problem, its prevention and its management? | Q7. SOCIETAL EFFECTS What are the effects of the problem (and its management) on, and in, society? |
| Q2. CAUSE What causes the problem? | Q4. MANAGEMENT What is the most appropriate management of the problem at individual system and population levels, and how can systems be continually improved? | Q6. PERSONAL EFFECTS What are the personal effects of having the problem? | Q8. SOCIETAL RESPONSE How does (and could) society respond to the problem? |



Population health learning outcomes

BCS⁴
 Pt-Dr⁵
 PPD⁶

⁴ Basic and Clinical Science

⁵ Patient –Doctor

⁶ Personal and Professional Development



C. THE NEWCASTLE UPON TYNE QA BREAKTHROUGH - STILL THE ONE TO BEAT?

The new PH course: The whole thing was rather opportunistic. There was a major UG medical curriculum change at Newcastle in the mid 1990s that coincided with a report from the General Medical Council (GMC) urging the teaching of a broader understanding of PH in UK medical schools. In addition, the PH team had good support from the faculty and was able to get PH accepted as a specialty. Even more surprisingly, PH was allocated a junior rotation when the school increased the number of rotations and made them each shorter to fit the available teaching time.

The new PH curriculum came in two parts – the Core subjects that were (and still are) taught in Y1 & Y2 under the general title of “Medicine in Society” and the Optional subjects that included the Junior Rotation in PH Medicine during Y3 (4 weeks, 20 students max) and various student electives in PH during Y4.

The Junior Rotation in PH is one of ten “clinical” rotations undertaken by students in Y3. It used to last 3 weeks, one for preparation at the university (critical appraisal techniques, etc.) plus two weeks with the National Health Service (NHS) Public Health department working on pre-arranged problems/projects with PH practitioners. This arrangement worked very well. Unfortunately, it is now compromised by a reduction to two weeks, almost all at the university, because the NHS no longer has the resources to handle the students. There are still some days spent at the NHS, however.

This unique initiative fundamentally altered the standing of PH at Newcastle, putting it on the same footing as internal medicine, general surgery, and primary health care. As far as we know, no other UK medical school has included a PH rotation in their UG program.

Quality Assurance (QA): Because PH was not highly rated in the old curriculum, the new PH team went all out to achieve excellence across the board with their new courses. QA was applied across all seven stages of the program: curriculum development, staff development, course management, student assessment, course evaluation, external assessment and continuous quality improvement.

Following the introduction of QA, they obtained excellent volunteer support from NHS physicians willing to teach on a goodwill basis. The first five or six years of their QA program were a great opportunity. All the participants had trained together and enjoyed the great feeling of making it happen. There were 12 or 13 Health Authorities in those days and Directors of PH were very supportive.

Today they have a serious problem because the NHS has been reorganized again, is not really there for the universities now and because there is big curriculum time pressure. Members of

the original team still at Newcastle believe QA is even more important today than it was nine years ago, since NHS physicians are now very thin on the ground. Another one has just left for Nepal, indefinitely.

2. INTERNATIONAL TEACHING METHODS

They use lectures together with tutorials mainly. Lectures are practical and filled with examples from PH practice. Tutorials are carried out in project groups (numbering 6 or so students) and are dedicated to generic principles with applicable projects. They find project work very energizing and that it adds real value. Students find them inspiring plus they get marked – so they really work at them! At the same time, they learn how to do knowledge management and literature appraisal. **Monash**

Computer-based modules are used extensively in the 4th & 5th years to allow more flexible learning schedules during these busy years with rotations/ electives. **Monash**

There's no doubt that PH presents students with a steep learning curve - especially during the second year when PH represents 19% of their final mark. Some students have difficulties, most often with literature reviews and group working. However overall, students report enjoying the experience - providing positive feedback, especially because they learn by doing at Monash rather than trying to soak up knowledge in the classroom. Student tests and exams show a really good grasp of PH too. **Monash**

[Back in 1995] we had a good education committee then - we often discussed core issues like how much public health do medical students really need to learn? **Sydney**

There is more web-based UG PH training going on now in UK. Our informant is not sure how good it is though. Certainly there is no central source of good material as yet. **Cambridge**

We are moving away from big set-piece exams to more practical evaluations throughout the UG program. PH is now part of final exams, however, including knowledge of EBH⁷ being tested. The main challenge of increasing PH content in UG teaching is the sheer lack of time - due to pressures from the massive clinical workload on medical students - even though they are required to learn fewer facts these days. **Cambridge**

It can be hard to engage students and have them see that PH is important, compared with all the exciting doctoring stuff that is going on the same time. The PH team at Newcastle tries to make the rotations deal with real decisions that the NHS has to make on the allocation of funds,

⁷ Evidence-Based Healthcare

etc. They find the projects offered are a bit lame these days - mainly health promotion topics like alcohol, smokes, fast food. Certainly bread & butter PH, but not the big issues. They want to confront students with more substantial challenges and would welcome more time than the two weeks allocated. **Newcastle upon Tyne**

Courses at SUNY⁸ involve **about 50% lectures and supporting tutorials**. Students say they like these. They know what they're supposed to know at the end of each. No loose ends. Epidemiology and Biostatistics are taught by lectures only (two of them).

Case studies have been used in teaching PH at SUNY for at least 10 years now. Faculty size has limited the number of break-out groups – so each totals about 25 students (too many). They have experienced quite vigorous push-back from the students, who said that cases took too long compared with lectures, etc. On the other hand, student evaluations of the case studies complained that there was not enough time allocated to get them done properly!

SUNY does some **self-directed projects**, mainly on evidence-based critical appraisal. They leaves students with open-ended questions. Fresno tests⁹ are used for evaluation.

Link Lists are provided on all PH courses, so that students can get self-directed help. This works well and reduces faculty load from students wanting recaps/help with assignments after lectures, etc.

There two or three exams on PH each year. All are done on one day. There are also some on-the-fly critical appraisals. **SUNY**

3. HOW ABOUT PBL?

Our informant remains agnostic about PBL. It seems to be working quite well, but there is not much formal research on its effectiveness and what there is fails to show conclusively whether it produces better outcomes than other instructional methods. Students like it in principle, but regularly point out that they are left unsupported and wondering what they ought to have learned from the sessions. Anecdotally, schools – especially the new schools of medicine in the UK - are reporting increased numbers of graduates coming out with distinct interest in public health careers. Some believe this is because of fairly recent changes to increase PH curriculum content during the first two foundation years of UG medical training (F1, F2). F2 in particular

⁸ State University of New York

⁹ Fresno test measures a wide range of knowledge and skills necessary for evidence-based practice. Standardised grading systems produced high degree of consistency between graders. Experts score significantly higher than novices in evidence-based medicine.

now includes five day "taster programs" in PH (and other specialties) for medical students - quite similar to the old SHO¹⁰ course in public health. **Cambridge**

Y1 & Y2 were actually designed to be didactic at Newcastle, so PBL is not really run as a big thing. They have not seen good evidence that PBL produces better results than traditional teaching, or that it doesn't. The whole UK medical teaching set-up is unsure on the issue, they are on the fence and the jury's out at the moment. **Newcastle upon Tyne**

4. INTEGRATION OF CLINICAL/PH TEACHING - A HELP OR HINDRANCE?

Epidemiology - being an evidence-based discipline - has the most potential to be relevant to medical students. The concepts of health promotion are also introduced in their undergraduate medical program. However, the material crops up here and there in the curriculum and there is no overall conceptual framework that students can get hold of. Might work better if health promotion and the social determinants of health were integrated with medical courses on diseased organs? **La Trobe**

PH is well integrated with the clinical curriculum at Monash. The Dean's commencement lecture to new UG medical students strongly underlines the close links between PH and clinical practice. Integration is reported to help teaching of PH and school's engagement in PH factors enormously. This all happened with the curriculum change in 2002. PH is no longer peripheral, it is a core learning requirement for all medical students. And the PH content is 100% assessed - informally and/or in written exams. **Monash**

Y1/Y2 are on campus so a good deal of integration is possible. But Y3/4 in the hospitals makes it harder to track and match the *problem of the week* with suitable PH tutorials. **Sydney**

Seems hard to change the curriculum at traditional medical schools in the UK. But the UK's new medical schools¹¹ are doing things differently and not purely along PBL lines. At the University of East Anglia, for example, PH teaching is integrated with clinical PBL and taught by a variety of faculty - not just PH people. No doubt integration helps, because it links PH considerations (like determinants of health/sickness) with training on disease diagnosis and treatment. They are also seeing more side by side teaching of amenable topics. They would

¹⁰ Senior House Officer

¹¹ School of Medicine Health Policy and Practice, University of East Anglia, Norwich; Hull York Medical School, University of York; Peninsula Medical School, Plymouth; Brighton and Sussex Medical School, Brighton and School of Medicine, Lancaster University, Lancaster.

like to have PH at the bedside, for example, but sessions would have to be rather people limited (100 undergraduates round the bed could be quite claustrophobic). **Cambridge**

Integration came later than the Newcastle QA initiative itself. The UG curriculum is said to be integrated now, but it seems to our informant that it is virtual integration really. There is a case book for each semester. Lecturers/tutors are required to mention the case currently on the table when doing PH sessions. Otherwise, there is not much actual integration. **Newcastle upon Tyne**

The faculty has been rather up and down on integration of PH with the clinical curriculum. The PH side of the house would like to see more now – linking clinical prevention with taking medical history and observing behavioural change. Our informant is in no doubt that integration absolutely helps. In fact, he feels that the school should be fully integrated by now. **SUNY**

5. FAILURES

One area of failure at present is the on-going lack of a central agreed UK curriculum for PH in UG medical teaching. The UK Medical Schools Council study group on this issue says it's a good idea, but schools don't want it to be imposed. They would prefer a sharing approach on teaching resources and methods. Cambridge believes that there must be a common curriculum on sharp-edged courses like epidemiology, statistics, and public health law & ethics - which is now in their final exam. **Cambridge**

We would never do it again - the crazy bioterrorism participation exercise. Took all 150 students on board, divided them up into groups representing the local public health department, hospital management, press, military, city council, etc. Total mayhem. About 30 students really became involved and participated actively – the remainder dropped out, did nothing, looked out the window, etc. Disaster. **SUNY**

6. WISH I HAD TIME TO ...

Establish an even closer link with experiential, deep learning. Students moving from the small to the large picture, applying strategic thinking to themselves. Tackling lifestyle, psychological stress management, etc. via community-based projects. Our informant would also like to find time to prepare some really good on-line formative quizzes. **Monash**

Do more project work – like COPC¹² funded projects that allow students to look into the community to find a problem to research and propose a solution. Allows room for intelligent

¹² Community Outreach Partnership Centers (federal funding)

reflection – work with a hypothesis, engage some critical thinking – then go back to clinical medicine class. **SUNY**

Introduce mastery learning¹³ and the related evaluations - but it is tough to make a sensible transition from the existing set-up. **SUNY**

Do more small group teaching. They used to have two field trips during the clinical years visiting prisons, outreach centres, etc. Now they have too many students and can't find enough volunteers to manage these programs - a common problem everywhere, it seems. **Sydney**

7. WHO ARE THE BEST TEACHERS?

Enthusiasm is the best teacher, no matter the academic or professional background of the person teaching. **Sydney**

As in many medical schools there are no teachers at Monash who are 100% dedicated to PH. All regular teachers however are from the medical faculty and several dedicate around half their time to PH education. They find that this wide range of interests on the part of staff provides some useful perspectives for students - including general practice, epidemiology and health services management. **Monash**

Monash also has a close relationship with VicHealth for placements and some teaching - including a 2 hour session each year with the agency's CEO. PH physicians are always popular lecturers – in part because they are able to communicate their enthusiasm for the job. Even so, according to student reports, even they find it hard to enliven the drier subjects like biostatistics and epidemiology. **Monash**

Sydney did a study (in 2002) on what medical students value in a PH tutor¹⁴. Whilst a degree of content expertise in population health was desirable in a tutor, this was rated secondary to good facilitation skills and an enthusiasm for teaching when evaluated by students working on self-directed study portions of a PBL-based curriculum. **Sydney**

¹³ In conventional teaching a class lasts for a fixed period of time during which students achieve various levels of understanding depending on their intelligence, aptitude, interest, etc. In Mastery teaching, the standard to be achieved by all students is set at the outset (say 84% = mastery) and then teaching proceeds until all students in the class have met that standard. Brighter students are provided with other improving tasks until all class members can proceed together to the next module. Clearly there can be scheduling difficulties with this method.

¹⁴ Lyndal J. Trevena: *What Medical Students Value in a Population Health Tutor: Characteristics for Consideration in Staff Recruitment and Development* - Education for Health, Vol 16, No. 1, 2002, 51-58

UK students like to have teachers with hands-on experience of the topic being taught, as well as people who are excited about their specialty and able to communicate that excitement to the students. On the whole younger is better, especially if well-trained in teaching techniques and still getting regular updates on topics and methods. Above all, charismatic teachers are absolutely the best. Cambridge is now offering more teaching training for new staff when they join the team. Courses are well attended as they allow people to tick the education box in the teaching section of job applications. **Cambridge**

8. EVALUATION: WHAT TURNS STUDENTS ON TO PH?

Their students are keen on Health Protection, particularly as there is now a relatively new integrated Health Protection Agency in UK. They also go for Global PH (GPH) - via electives. Climate change is a good driver. There are numerous opportunities at the UG level for GPH since 40% of the medical students at Cambridge are from second generation UK immigrant families that originated in India, China, SE Asia, etc. Parents are often well-connected and can help secure placements back home for their student and possibly other Cambridge UGs. **Cambridge**

There seems to be a small surge at the moment of UGs that are fired up on PH. Meanwhile, there are more non-medical people finding their way into senior PH management positions now - via MPH mainly, but also direct from non-medical specialties like economics, management, etc. They wonder if this will mean more competition for positions that were the sole preserve of physicians for generations? **Cambridge**

Their students are quite easy to hook quickly. It turns out they are all interested in global health, where PH is a world-wide problem. Our informant has worked in Africa, has plenty of slides and reports that he "gets them gripped". He has also been able to steer them into electives that will affect future careers. **Newcastle**

SUNY is trying to use epidemiology simulation to train students in tracking an epidemic, constructing a hypothesis, inserting death rates, etc. Students are quite happy with computer-based methods like this, but it can be hard to grade 150 students who have been sitting at computers for an hour or two. **SUNY**

They have PH electives in Y4. About 8/10 students go for them each year out of the total of 140/150 UG medical students. He admits that some take the PH route for a "light" elective due to the pressure of working to get into the residency program of their choice. **SUNY**

9. SUMMARY

International teaching methods

- They find project work very energizing and that it adds real value. Students also find it inspiring, plus they get marked – so they really work at it!
- Computer-based modules allow students to work in spare time as it becomes available during the busy 4th/5th years.
- Students prefer to learn by doing rather than trying to soak up knowledge in the classroom. Student tests and exams show a really good grasp of PH too.
- Courses involve about 50% lectures and supporting tutorials. Students like these. They know what they're supposed to know at the end of each. No loose ends.
- Link lists are provided on all PH courses, so that students can get self-directed help.

How about PBL?

- UK is still agnostic about PBL.
- They have not seen good evidence that PBL produces better results than traditional teaching, or that it doesn't.
- The whole UK medical teaching set-up is unsure on the issue, they are on the fence and the jury's out at the moment.

Integration of Clinical/PH Teaching - a help or hindrance?

- PH no longer peripheral, it is a core learning requirement for all medical students.
- Integration now links PH considerations (like determinants of health/sickness) with training on disease diagnosis and treatment (in UK).

Problems

- On-going lack of a central agreed UK curriculum for PH in UG medical teaching.
- Avoid bioterrorism exercises.

Wish I had time to ...

- Prepare some good on-line formative quizzes.
- Do more projects (especially government funded ones).
- Introduce mastery learning.
- Do more small-group teaching.

Who are the best teachers?

- People who are excited about their specialty and able to communicate that excitement to the students.
- Charismatic teachers are absolutely the best.
- Public health physicians.
- Teachers with hands-on experience of the topic being taught.

What turns students on to PH?

- Global Health.
- Health protection.
- Computer simulations instead of lectures for epidemiology.

10. CONCLUSIONS ¹⁵

A. WHAT WORKS IN TEACHING PH IN OTHER COUNTRIES?

- Monash Health Enhancement Program. (79)
- Sydney's Famous Eight Essential Questions.(80)
- Newcastle-upon-Tyne's approach to re-building an undergraduate PH program, including an undergraduate rotation in PH medicine. (81)
- More learning by doing - - similar to clinical approach. (82)
- Excellence in PH teaching, courses and teachers. (83)
- Global Health teaching modules and international attachments. (84)
- Computer-based modules that allow students to study when convenient and that can deal with epidemiology and biostatistics efficiently. (85)
- Lectures (not too long) plus supporting tutorials. Students can readily understand what needs to be known. Can get knowledgeable answers on the spot, too. (86)
- Link lists help with self-directed study and lecture follow-up. (87)
- PBL widely used, but questions about its effectiveness remain. (88)
- Integration of PH in clinical teaching widely accepted as the way forward. (89)
- Five "taster" programs in PH. (90)

B. WHAT DOESN'T WORK?

- Getting increasingly hard to arrange field trips, attachments and projects with local public health agencies due reduced PH staffing. (91)
- Increasing PH teaching hours is an uphill battle because of the high clinical workload for medical students. (92)
- PH teaching that fails to show its relevance to clinical practice. (93)
- Case studies that take too long. (94)
- Maybe PBL. (95)
- Agreeing a national curriculum for PH in UG medical teaching in the UK. (96)
- Bioterrorism exercises in the US. (97)

¹⁵ Numbers in parentheses indicate a method's numbering in the Executive Synthesis Report

C. BOTTOM LINE

Our PH teaching colleagues in the US, UK and Australia seem to be facing a very similar set of challenges to those found in Canada. They have some novel ideas to offer as well as having adopted a number of solutions already in use here.

11. CONTRIBUTORS

Dr. John Epling

Assoc Prof. Family Medicine
State University of New York (SUNY)
Syracuse, NY, USA

Dr. Steve Gillam

Institute of Public Health
University of Cambridge, UK

Dr. Craig Hasted

DEPM
Monash University
Melbourne
Victoria Australia

Dr. Vivian Lin

Chair of Public Health
Faculty of Health Sciences
La Trobe University
Melbourne
Victoria, Australia

Dr. Lyndal Trevena

School of PH
University of Sydney
NSW Australia

Dr. Martin White

Institute of Health & Society
University of Newcastle upon Tyne, UK

