50. Biener L, Harris JE, Hamilton W. Impact of the Massachusetts tobacco control programme: Population based trend analysis. *BMJ* 2000;321(7257):351-54.
51. Chaloupka FJ, Wechsler H. Price, tobacco control policies and smoking among young adults. *J Health Economics* 1997;16(3):359-73.
52. Dedobbeleer N, Beland FT, Contandriopoulos AP, Adrian M. Gender and the social context of smoking behaviour. *Soc Sci Med* 2004;58(1):1-12.
53. Farrelly MC, Pechacek T, Chaloupka F. The impact of tobacco control program expenditures on aggregate cigarette sales: 1981-2000. *J Health Economics* 2003;22(5):843.
54. Glied S. Youth tobacco control: Reconciling theory and empirical evidence. *J Health Economics* 2002;21(1):117-35.
55. Laugesen M, Swinburn B. New Zealand's tobacco control programme 1985-1998. *Tobacco Control* 2000;9(2):155-62.
56. Tauras JA, O'Malley PM, Johnston LD. Effects of price and access laws on teenage smoking initiation: A national longitudinal analysis. *ImpacTeen and Youth, Education & Society* 2001;44.
57. Wasserman J, Manning WG, Newhouse JP, Winkler JD. The effects of excise taxes and regulations on cigarette smoking. *J Health Economics* 1991;10(1):43-64.
58. Borren P, Sutton M. Are increases in cigarette taxation regressive? *Health Economics* 1992;1(4):245-53.
59. Farrelly MC, Bray JW, Pechacek T, Woollery T. Response by adults to increases in cigarette prices by sociodemographic characteristics. *Southern Economic J* 2001;68(1):156-65.
60. Stephens T, Pederson LL, Koval JJ, Macnab J. Comprehensive tobacco control policies and the smoking behaviour of Canadian adults. *Tobacco Control* 2001;10(4):317-22.
61. Wilson N, Thomson G. Tobacco taxation and public health: Ethical problems, policy responses. *Soc Sci Med* 2005;61:649-59.
62. Manske S, Maule C, O'Connor S, Lovato C, Harvey D. A call for action to support best practices in evaluation of comprehensive tobacco control evaluation strategies. *Chron Dis Can* 2003;24(1):32-37.

Received: May 20, 2005

Accepted: December 2, 2005

Book Reviews/Recension

Implementation Research: A Synthesis of the Literature

Fixsen D, Naoom S, Blase KA, Friedman RM, Wallace F. University of South Florida, Louis de la Parte Florida Mental Health Institute, The National Implementation Research Network. (FMHI Publication #231). 2005

<http://nirn.fmhi.usf.edu/resources/publications/Monograph/>

Despite significant advances in evidence-based practice, researchers, policy-makers and clinicians alike remain bedeviled by the problems of turning the evidence into sustainable programs. It is all very well to say that the evidence has been gathered in, but how can it be implemented? The synthesis of the implementation literature by Fixsen and colleagues (available at the web address above) is a timely contribution to help address this important and neglected question.

The review is methodologically sound and commendably inclusive. Its scope and multidisciplinary nature are distinct strengths. The authors reviewed almost 2,000 citations from nine health and non-health databases. From this initial pool, over 700 articles representing an eclectic mix of disciplines (as far ranging as agriculture and engineering) were included in a comprehensive content analysis and synthesis. The authors recognize, correctly in our view, the significant commonalities across disciplines in turning research into practice, and the potential for integrated and cross-cutting service delivery (e.g.,

change in adolescent mental health would necessarily involve public health, education, juvenile justice and child welfare). They propose a transactional model of implementation, from early adoption to sustainability that acts to enhance co-incident of interests, mutual support and integration. They also usefully differentiate between intervention and implementation processes, and distinguish degrees of implementation from paper to process to performance.

Of course, articulating a model does not always make things simpler. But it serves us well by revealing the complexities of implementation, including different terminologies of 'implementation' to overcome. The report also identifies four principal characteristics of successful implementation (p.vi) related to:

- The selection, training and coaching of clinicians;
- Organizational infrastructure, including process and outcome measures;
- Full participation of communities and consumers; and
- Supportive political and regulatory environments.

Sustainable implementation requires the reflexive interplay of all these elements. Without any one of these components, programs would struggle to survive. All are necessary, but individually insufficient.

The authors offer a number of recommendations for policy-makers, researchers, and 'purveyors of well-defined practices and programs' that may take implementation research out of its infancy and assist with 'real world application'. They speak

of developing "communities of practice and science", but perhaps an integration of these into a community of 'practice science' or 'implementation science' is also a constructive way forward.

The synthesis is relevant to a wide readership, from policy decision-makers to researchers to on-the-ground clinicians. It would be a valuable resource to senior undergraduate or graduate students. The review presents the material logically. It does not over-simplify, nor complicate essential elements, and gives a framework for answering the trickiest question of them all: how is it done?

Mark Welch, RPN, BA (Hons), BSc, MA, GCHE, PhD
Assistant Professor, Faculty of Nursing,
University of Alberta

Barb Riley, PhD
HSFC/CIHR Research Fellow; Scientist,
Centre for Behavioural Research and
Program Evaluation, University of Waterloo

Phyllis Montgomery, RN, MScN, PhD
Assistant Professor, School of Nursing,
Laurentian University

Linda von Tettenborn, RN, BSc(Nu), MSN
Nursing Faculty, Bachelor of Science in
Nursing, Faculty of Health Sciences,
Douglas College

Omaïma Mansi, RN, PhD(cand)
Associate Professor, School of Nursing,
McGill University

...continues on page 319

9. O'Loughlin J, DiFranza J, Tindale RF, Meshefedjian G, McMillan-Davey F, Clarke PB, et al. Nicotine-dependence symptoms are associated with smoking frequency in adolescents. *Am J Prev Med* 2003;25:219-25.

Received: March 21, 2005

Accepted: September 19, 2005

RÉSUMÉ

Contexte : Déterminer si la taxonomie recommandée des étapes menant à la décision de fumer chez les jeunes correspond aux perceptions des jeunes fumeurs.

Méthode : Le module sur le tabagisme du système SHAPES (School Health Action Planning and Evaluation System) a été administré à 23 047 élèves (de la 9^e à la 13^e année) d'un échantillon de commodité de 29 écoles secondaires pendant l'année scolaire 2000-2001 dans la province de l'Ontario. Par croisement des données, nous avons comparé l'usage du tabac perçu par l'élève et l'étape où en est cet élève selon la taxonomie actuellement recommandée de l'usage du tabac.

Résultats : Une majorité d'élèves se classait dans la catégorie des fumeurs réguliers (52,4 %), mais les fumeurs à titre expérimental (98,9 %) ne se considéraient pas vraiment comme étant des fumeurs. L'usage du tabac déclaré par l'intéressé correspondait assez bien à la taxonomie recommandée dans la catégorie des personnes n'ayant jamais fumé et dans celle des fumeurs permanents.

Conclusions : Il faudrait pousser la recherche pour élaborer une taxonomie qui corresponde aux auto-perceptions des jeunes fumeurs qui ne fument pas encore régulièrement.

Book Reviews/Recension

Comparative Quantification of Health Risks. Global and Regional Burden of Disease Attributable to Selected Major Risk Factors

Majid Ezzati, Alan D. Lopez, Anthony Rodgers, Christopher J.L. Murray (Eds.), Geneva, Switzerland: World Health Organization, 2004; 2271 pp

This work, published by the World Health Organization (WHO), is a compilation and integration of research coordinated by WHO to quantify population-level effects associated with various hazardous exposures through the comparative risk assessment project. This work attempts to apply conceptual and methodological consistency to help provide quantitative evidence for public policy decisions to reduce hazards to health. Thus, the intended audience would be public policy-makers and scientists as well as those people working with global health issues.

The CD-ROM is organized into two volumes with chapters grouped into sections. The first volume contains a chapter describing the conceptual framework and methodological issues (Chapter 1) as well as sections on childhood and maternal nutrition, other nutrition-related risk factors and physical inactivity, and addictive

substances. Volume two contains sections on sexual and reproductive health, environmental and occupational risk factors, other selected risk factors, distribution of risk factors by poverty, data analysis and results, and multi-risk factor assessment.

Except for Chapter 1 and those included in the latter three sections, each chapter focuses on a specific risk factor. Within each of these chapters, the authors define the risk factor, provide a review of previous literature and describe the process of compiling data. Prevalence of the risk factor and measures of association between exposures and outcomes are reported by age, sex and global subregion where possible. There is also a discussion regarding levels of uncertainty, the assumptions made and the limitations of the investigation. In most cases, there is an attempt to predict future trends. In addition to the information presented in the chapters, the CD-ROM contains additional data tables for each exposure, available in Excel and PDF formats.

The final three sections are spent examining the associations between risk factors of interest and poverty; reporting the analytic methods used to derive estimates and to consider multiple risk factor interventions; and presenting some of the results for individual and joint effects as well as

providing a summary of the conclusions and directions for future research.

Reading the entirety of this work could be tedious. It is long and some parts may be too detailed for all readers. To fully appreciate this work, the reader should have a strong grasp of epidemiology and efforts should be made to understand the methods and concepts as well as the assumptions and limitations revolving around the project in order to interpret the results appropriately. However, I believe this CD-ROM would be a good resource for scientists and policy-makers requiring quantitative results to aid in decision-making for global public health.

This work is available free at the following website: "<http://www.who.int/publications/cra/en/>" (accessed November 1, 2005). Additional data tables in both PDF and Excel files are available on the CD-ROM under "Annexes", available through WHO at a price of \$180 US.

Joshua A. Lawson, MSc
Department of Public Health Sciences,
University of Alberta;
Institute of Agricultural Rural and
Environmental Health, University of
Saskatchewan

...continues on page 329

15. Samantha S, Tweeten M, Rickman LS. Infectious complications of body piercing. *Clin Infect Dis* 1998;265:735-40.
16. Stewart C. Body piercing: Dangerous decoration? *Emerg Med* 2000;32(2):92-102.
17. Haley RW, Fisher RP. Commercial tattooing as a potentially important source of hepatitis C infection. Clinical epidemiology of 626 consecutive patients unaware of their hepatitis C serologic status. *Medicine* 2001;80(2):134-51.
18. Tweeten SS, Rickman LS. Infectious complications of body piercing. *Clin Infect Dis* 1998;26(5):735-40.
19. Long GE, Rickman LS. Infectious complications of tattoos. *Clin Infect Dis* 1994;18:610-19.
20. Hayes MO, Harkness GA. Body piercing as a risk factor for viral hepatitis: An integrative research review. *Am J Infect Control* 2001;29(4):271-74.
21. Pugatch D, Mileno M, Rich JD. Possible transmission of human immunodeficiency virus type 1 from body piercing. *Clin Infect Dis* 1998;26:767-68.
22. Brathwaite RL, Stephens T, Sterk C, Brathwaite K. Risks associated with tattooing and body piercing. *J Public Health Pol* 1999;20(4):459-70.
23. AEGIS. Piercing problems for 'one in five'. BBC News. 2002 Jan 8. Available online at: <http://www.aegis.com/news/bbc/2002/BB020104.html> (Accessed February 18, 2004).
24. Greif J, Hewitt W, Armstrong M. Tattooing and body piercing: Body art practices among college students. *Clin Nurs Res* 1999;8:368-85.
25. Brooks TL, Woods ER, Knight JR, Shrier LA. Body modification and substance use in adolescents: Is there a link? *J Adolesc Health* 2003;32(1):44-49.
26. Beauregard JA. Embodied identities: College women's perspectives on body piercing using developmental models of psychology (dissertation doctorale). Fairfax, VA: George Mason University, 2001.
27. Roy E, Haley N, Leclerc P, Boivin JF. Risk factors for hepatitis C virus infection among street youths. *CMAJ* 2001;165(5):557-60.
28. Marcoux D. Regard sur l'apparence et les modes corporelles à l'adolescence. *Le Clinicien* 2001;juin:103-11.
29. Atkinson M. Pretty in ink: Conformity, resistance, and negotiation in women's tattooing. *Sex Roles* 2002;47(5/6):219-35.
30. Armstrong M, Fell PR. Body Art: Regulatory issues and the NEHA Body Art Model Code. *J Environ Health* 2000;62(9):25-30.

Received: June 2, 2005
Accepted: March 5, 2006

Book Reviews/Recension

Public Health: Past, Present and Future. Celebrating Academic Public Health in Edinburgh, 1902-2002

Raj Bhopal and John Last (Eds.), Norwich, UK: The Stationery Office (Nuffield Trust), 2004

The celebration of 100 years of academic public health at the University of Edinburgh brought together approximately 330 participants with 17 contributors. The output from this meeting is the content of this book. There are three sections, as noted in the title.

The discussion of the development of Edinburgh and the effects of these developments on the health of the inhabitants speaks to the interactions of crowding, poor sanitation, poverty and poor health care on morbidity and mortality. The section on the past also outlines the roles that medical officers of health played in bringing about the changes necessary to improve the lot of the citizenry. I enjoyed the historic reviews that comprised the first five chapters. There was considerable overlap and repetition of the material, but it clearly demonstrated the interactions that occur in public health.

The next six chapters were less informative as the authors discussed issues that are currently being debated in public health circles. At times, these issues would have been better informed by the review of the past and the observations made on the past interactions of health and the environmental social and economic conditions that are relevant today. Nevertheless the issue of increasing emphasis on healthy survival, the continuing risk of communicable disease (much less than in the past but not entirely defeated) and the roles of statistics and social sciences summarized the contribution of the University of Edinburgh in these areas.

The three chapters on the future of public health include the role of genomics, legislation and public health practice. As "looks into the future", these were necessarily less evidence based.

As a light read, especially for graduates of the University of Edinburgh and particularly the Department of Public Health and the Usher Institute, this book could be worthwhile. Generally speaking I cannot recommend this book for the average reader unless there is a strong interest in history and/or in the University of Edinburgh.

Richard Mathias, Professor
Getnet Asrat, Clinical Fellow
Dept. of Health Care and Epidemiology
University of British Columbia

...continues page 341