



# ACHORD

Alliance for Canadian Health  
Outcomes Research in Diabetes

## ACHORD Research Forum: Quality of Diabetes Care

September 24-26, 2004 Calgary, Alberta

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ACHORD is providing another opportunity to bring diabetes health services researchers together by hosting an invitational ACHORD Research Forum on September 24-26, 2004 in Calgary, Alberta. The main theme of the presentations and discussion will be research efforts aimed at improving the management of diabetes in our health care system, including cost-effectiveness of diabetes prevention and quality improvement efforts in diabetes.

We are extremely fortunate to have three leading international scientists as keynote speakers. Dr. Michael Engelgau is one of the leading public health scientists in diabetes surveillance and quality of care in North America. Dr. William Herman is the Principal Investigator in the cost-effectiveness study of the Diabetes Prevention Program, a landmark trial which demonstrated the efficacy of prevention strategies for diabetes. Dr. Jan Hux has been extensively involved in quality improvement

interventions research. We feel that bringing these individuals to the table will positively impact the diabetes health research community in Alberta.

An important aspect of the ACHORD research program is the translation of research evidence to health policy implementation. The format of our forum will allow Drs. Engelgau, Herman and Hux to interact directly with investigators and collaborators of the ACHORD group, as well as with invited participants, which will potentially foster new research ideas and collaborations. Invitees include health services researchers, research trainees, local health policy decision-makers (provincial and regional), and health research funding agencies with interests in diabetes health outcomes research.

*The ACHORD Research Forum is partially being funded through grants from CIHR Institute of Nutrition, Metabolism and Diabetes and AHFMR.*

## ACHORD: Seen and Heard

### Publications:

Maddigan SL, Feeny DH, Johnson JA, for the DOVE Investigators. Construct validity of the RAND-12 and Health Utilities Index Mark 2 and Mark 3 in type 2 diabetes. *Quality of Life Research* 2004;13:435-448.

Johnson JA, Maddigan SL. Performance of the RAND-12 and SF-12 summary scores in type 2 diabetes. *Quality of Life Research* 2004;13:449-456.

Klinke JA, Johnson JA, Guirguis LM, Toth EL, Lee TK, Lewanczuk RZ, Majumdar SR. Underuse of aspirin in type-2 diabetes mellitus: prevalence and correlates of therapy in rural Canada. *Clinical Therapeutics* 2004;26:439-446.

Supina AL, Guirguis LM, Majumdar SR, Lewanczuk RZ, Lee TK, Toth EL, Johnson JA. Treatment Gaps for Hypertension Management in Rural Canadian Patients with Type 2 Diabetes Mellitus. *Clinical Therapeutics* 2004;26:598-606.

Maddigan SL, Majumdar SR, Guirguis LM, Lewanczuk RZ, Lee TK, Toth EL, Johnson JA. Improvements in Patient-Reported

Outcomes with an Intervention to Enhance Quality of Care for Rural Patients with Type 2 Diabetes: Results of a Controlled Trial. *Diabetes Care* 2004;27:1306-1312.

Eurich DT, Majumdar SR, Tsuyuki RT, Johnson JA. Reduced Mortality Associated with the Use of Angiotensin-Converting Enzyme Inhibitors in Patients with Type 2 Diabetes Mellitus. *Diabetes Care* 2004;27:1330-1334.

Ohinmaa A, Jacobs P, Simpson SH, Johnson JA. The projection of prevalence and cost of diabetes in Canada: 2000 to 2016. *Canadian Journal of Diabetes* 2004;28(1):116-123.

Bowker SL, Mitchell CG, Majumdar SR, Toth EL, Johnson JA. Lack of Insurance Coverage for Testing Supplies is Associated with Poorer Glycemic Control in Patients with Type 2 Diabetes. *CMAJ* 2004;171(1):39-43.

Yee A, Majumdar SR, Simpson SH, McAlister FA, Tsuyuki RT, Johnson JA. Statin use in type 2 diabetes mellitus is associated with a delay in starting insulin. *Diabetic Medicine* 2004;21:962-967.

## Report from the Chair



Jeffrey A. Johnson

Another summer has come and gone – how quickly time passes by! And with it come and go many faces and projects for our ACHORD group. Since our last newsletter, we held an ACHORD Retreat in Banff, which was a success in many ways. Participants shared their background and interests in their “15 minutes of fame” and a number of new collaborations have arisen.

It is with mixed emotions that I share recent news about changes in our ACHORD group. In July, Alison Supina defended her MSc thesis at the University of Alberta, and has recently begun her PhD in Epidemiology at the University of Calgary. More recently Dr. Scot Simpson, who has been a very productive Research Associate with ACHORD at the IHE, has accepted a position as Assistant Professor at the Faculty of Pharmacy & Pharmaceutical Sciences, University of Alberta. In this new position, Scot will continue in his lead role on the Vascular Intervention Program, a study of a co-managed, pharmacist-lead clinic for patients with type 2

diabetes within the Capital Health Authority. I am pleased that Scot will stay closely linked with ACHORD as an ongoing collaborator.

For the coming months, we are very excited about hosting a second ACHORD invitational research meeting this fall, where we are privileged to host Dr. Jan Hux from ICES in Toronto and Drs. Michael Engelgau and Bill Herman, two very prominent US-based scientists, all interested in diabetes epidemiology, health services and health outcomes research in diabetes. This forum will be a great opportunity for ACHORD investigators and trainees to interact with these leading scientists, and foster broader collaborations for our research.

And finally, we are looking forward to the 2004 Annual CDA meeting in Quebec City in October, where we will share the results of several ACHORD projects, including recent work on diabetes and depression and the STRIP-Type 2 study. For more information on these and other projects, I invite you to check our website for regular updates.

### Project Highlights: Study of Testing Response in Patients with Type-2 Diabetes (STRIP – Type 2)

Self-monitoring of blood glucose (SMBG) is considered a cornerstone of self-care for patients with diabetes, although the precise role of SMBG is not clear. This leaves us with vague recommendations in current clinical practice guidelines. The cost of SMBG is not small. Each SMBG testing strip costs approximately \$1, which, with more frequent testing to achieve optimal glycemic control, can lead to substantial costs to individuals and health care systems. The Alberta Monitoring for Health (AMFH) Program, a joint program between Alberta Health & Wellness (AHW) and the Canadian Diabetes Association (CDA), provides financial support for SMBG supplies for Albertans with diabetes. In May 2003, AHW announced the Alberta Diabetes Strategy 2003-2013, which included substantial funding increases for the AMFH, and expanded the financial coverage of testing supplies for Albertans with diabetes.

The Study of Testing Response in Patients with Type-2 Diabetes (STRIP – Type 2) was a randomized controlled trial to evaluate the clinical and behavioural impact of providing free SMBG supplies to patients with type 2 diabetes not on insulin and without private insurance for SMBG supplies. We hypothesized that patients

who received free testing strips would have significantly improved A1c and self-reported SMBG. Two papers have been published on the baseline, cross-sectional data from the STRIP-Type 2 study. One paper, entitled “Lack of insurance coverage for testing supplies is associated with poorer glycemic control in patients with type-2 diabetes”, was published in CMAJ in July of this year; the other paper, entitled “Lack of correlation between patient-reported outcomes and glycemic control in type-2 diabetes” is forthcoming in the Canadian Journal of Diabetes.

The full follow-up of the STRIP-Type 2 study has now been completed. We found that reducing financial barriers to SMBG by providing free testing strips did not lead to improved glycemic control in patients with type 2 diabetes not managed with insulin.

The results of the STRIP-Type 2 study will be presented at the annual CDA meeting this year, to be held in Quebec City. The results of the main study will be submitted for publication in a leading clinical journal. We think this work will have significant policy implications with respect to reimbursement for testing supplies for people with type 2 diabetes.

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*Main results of the STRIP study will be presented at the CDA/CSEM Professional Conference & Annual Meeting, Quebec City, October 27-30, 2004*

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## Recent Literature:

Ohinmaa A, Jacobs P, Simpson SH, Johnson JA. The projection of prevalence and cost of diabetes in Canada: 2000 to 2016. *Canadian Journal of Diabetes* 2004;28(1):116-123.

### What was the study about?

Management of diabetes and its associated co-morbidities places a substantial burden on our health care system. The increasing prevalence of diabetes is well recognized, however, the future impact on Canadian health care costs is not known. This study pooled resources from a number of data sources to project the prevalence of diabetes and associated costs for the years 2000 to 2016. Statistics Canada population projections for Canada and all provinces and territories provided an estimate for the base population during the study years. Age-specific prevalence and incidence rates, projected using a model developed in Manitoba, were then used to estimate the population of Canadians with diabetes. Per capita annual health care costs were estimated based on administrative health care data from the province of Saskatchewan in 1996, grouped by 5-year age bands, and stratified according to incident or prevalent cases.

### What were the results?

The model predicted that the number of prevalent diabetes cases will increase by 74% from 1.4 million in 2000 to approximately 2.4 million in 2016. The total health

care costs to manage people with diabetes are estimated to increase from \$4.7 billion in 2000 to \$8.1 billion in 2016. The model predicted that the increase in cost is largely due to an 81% increase in the cost to manage prevalent cases of diabetes.

### What are the implications of this study?

The projection model shows that, if the current trends continue, both the number of individuals with diabetes and health care costs will increase more than 70% by 2016. During the same time period, the population of Canada is estimated to increase by 12%. Strengths of the model include a conservative estimate for Canada's population growth and use of 5-year age bands to estimate incidence, prevalence, and death rates, as well as health care costs. This allows for a more flexible model to reflect changes in population and disease progression. The model assumes that management strategies for diabetes and its co-morbidities remain constant during the study time. Therefore these observations may serve as a benchmark to compare strategies to reduce the future burden of this disease.

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*Our model predicted that the increase in costs of diabetes is largely due to an 80% increase in the cost to manage existing cases of diabetes.*

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## Meet the Staff:

Samantha Bowker , BA, MSc

Samantha Bowker received her Bachelor of Arts in Economics at the University of Alberta in 1997. She went on to complete a Master of Science in clinical epidemiology at the University of Alberta in 2000. Her thesis was in the area of infectious diseases, specifically focusing on HIV and Hepatitis C co-infection. Samantha has been a Research Associate with ACHORD and the Institute of Health Economics (IHE) for the past 2 years. Samantha will begin her PhD in clinical epidemiology in January 2005 under Dr. Jeff Johnson's supervision. Samantha's PhD

thesis will be on the epidemiology of the metabolic syndrome, specifically comorbid diabetes and cancer, which is her current research interest. During this project, Samantha will use the administrative dataset from Saskatchewan Health (1991-2001). Other ACHORD projects Samantha has worked on include developing a set of quality indicators for type-2 diabetes and the Study of Testing Response in Patients with Type-2 Diabetes (STRIP-Type 2).



Samantha Bowker



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# ACHORD

## Alliance for Canadian Health Outcomes Research in Diabetes

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### Staff & Research Trainees

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Ms. Lauren Brown  
Mr. Dean Eurich  
Ms. Maria Kotovych  
Ms. Jackie Lewyk  
Dr. Nan Luo  
Ms. Sheri Maddigan  
Dr. Scot Simpson  
Ms. Betsy Thomas

### Why this Newsletter?

The purpose of the ACHORD Newsletter is to keep you updated on the activities of the ACHORD group and to provide reviews of recent, relevant diabetes literature. The newsletter is published three times a year.

You can expect to see the following in every issue:

- *Report from the Chair*
- *Meet the Staff/Trainee*
- *ACHORD Project Highlights*
- *ACHORD Seen and Heard*
- *Review of Recent Literature*

If you have any questions about the newsletter, please call Jeffrey Johnson or any of the ACHORD staff at the Institute of Health Economics at (780) 448-4881.

### Diabetes Events

CDA/CSEM  
Professional Conference & Annual Meeting  
October 27-30, 2004  
Quebec City, QC

### ACHORD Events

ACHORD Research Forum  
Calgary, Alberta, September 24-26, 2004