Association for the Improvement of Mental Health Programmes

Dialogue on Diabetes and Depression

Full Year 2012

Projects Completed and in Progress

EXTERNAL COMMUNICATION ON COMORBIDITY

- Development and public dissemination of educational materials (Communications Committee activities)
  a. Update and reformatting of the DDD website
  b. WPA slide set summarizing Wiley-Blackwell book *Diabetes and Depression*, edited by W. Katon, M. Maj, and N. Sartorius. (Now available in 19 languages on WPA website)

- Symposia, keynote speeches and other lectures on co-morbid diabetes and depression organized by the DDD at international congresses and major meetings or events
  a. **WPA/Wonca Thematic Conference** on Mental Health and Primary Health Care, Granada, Spain. 8-11 February 2012
  b. **European Psychiatric Association**, Prague, Czech Republic; March 3-6, 2012
  c. **Diabetes UK** Professional Conference; Glasgow, UK; March 7-9, 2012
  d. **ALAD Regional Forum** on Diabetes and Depression: Buenos Aires, Argentina; March, 2012
  e. **International Society of Affective Disorders**: *Affective Disorders – Mind, Body and Society*; London, UK; April 18-20, 2012
  g. **European Congress of Social Psychiatry**; July 4, 2012; Geneva, Switzerland. Norman Sartorius chaired a symposium on co-morbidity of chronic physical illness and depression.
i. **EASD Annual Meeting**; Berlin, Germany; October 1-5, 2012

j. **WPA International Congress**; Prague, Czech Republic, October 17-21: **Norman Sartorius** chaired a symposium on the co-morbidity of mental and medical illness 18 October, entitled “Co-morbidity of mental and medical disorders” – sessions included:
   i. **Christian Lauber** on the complex relationship between mental disorders and cancer
   ii. **Thomas Becker** on the management of physical illness in mental health services, including a network of 40 European centers dealing with treatment of physical illness in mentally ill and the neglect of physical illness in institutions for the mentally ill
   iii. **Cathy Lloyd** on the transcultural equivalence of screening methods in co-morbid mental and physical illness (This lecture was presented by **Linda Gask**).

k. **Pacific Rim College of Psychiatry** Scientific Meeting; Seoul, Korea. October 26. **Norman Sartorius** chaired a symposium on co-morbidity – speakers included:
   i. **In-Kyoon Lyoo** from the Korean Brain Institute on “Neural Substrates of Depression in Diabetes”
   ii. **Juliana Chan** from the Chinese University of Hong Kong reported on the results of her research on depression in diabetes centers and validation of the PHQ-9 in 600 Chinese patients and found twice the rate of depression in this population compared to the general population.
   iii. **Professor Ee Heok KUA**, President of the PRCP, spoke about depression and dementia.

l. **IFPMA Assembly**, Geneva, Switzerland. October 2012. Norman Sartorius commentary in panel discussions on co-morbidity as a major opportunity for innovation and collaboration between industry and not-for-profit organizations.

m. **Pan Arab Psychiatric Association**; Dubai, Arab Emirates; November. **Helen Millar** chaired a symposium on diabetes and depression involving local experts.


   - Symposia and other lectures on co-morbid diabetes and depression currently being developed by the DDD for presentation in 2013
     a. **Indian Psychiatric Society** conference; Bangalore, India; January, 2013; plenary lecture given by **Norman Sartorius** (COMPLETED)
     b. **Diabetes UK** Annual Professional Conference from 13-14 March 2013 in Manchester, UK. Opening plenary symposium of the conference is the showcase event and is titled: “Depression and Diabetes” (IN PROGRESS)
        i. Co-chairpersons: Kath Barnard, David Cavan
        ii. **Professor Sir David Goldberg** - epidemiology, co-morbidity of depression and diabetes and the NICE guidelines
iii. **Professor Richard Holt** - mechanisms underlying the association and clinical consequences of depression in diabetes

iv. **Professor Frank Snoek** - treating depression and distress

v. DDD pre-meeting sponsored and organized by The Open University.

c. **18th Psychosocial Aspects of Diabetes (PSAD) Spring Meeting**; Zadar, Croatia, April 12-14, 2013 (Franz Pouwer is the current president) **Norman Sartorius** will deliver the keynote lecture on diabetes and depression. (IN PROGRESS)

d. **World Psychiatric Association** Regional Congress; Bucharest, Romania; April 10-13, 2013; Norman Sartorius will give a keynote address about the links of primary health care and specialist care and use the example of comorbidity between diabetes and depression to illustrate the issues emerging (IN PROGRESS)

e. **World Congress of Social Psychiatry**; Lisbon, Portugal; June 29-July 3, 2013; President Driss Moussaoui to co-chair a symposium involving, as speakers, Silver Bahendeka or S.K. Chaturvedi to talk about ways of dealing with co-morbidity in a LAMIC. Henk Parmentier (WONCA) will present the perspective of the Family Doctor. Joao Nabais (president, IDF Europe) will present the perspective of the diabetes patient. Anne Marie Felton (President, FEND, Federation of European Nurses in Diabetes) will present the perspective of the diabetes nurse. (IN PROGRESS)

f. **World Federation for Mental Health (WFMH)** World Congress; Buenos Aires, Argentina; August 25-28, 2013; Helen Millar and Larry Cimino to co-chair a symposium (both are WFMH board members). Adriana Alvarez will talk about the prevalence of depression in Argentine diabetes services. Alfredo Cia, president of APAL, will talk about the challenges of optimal depression screening in diabetes centers. A representative of ALAD will also participate. (IN PROGRESS)

- Scientific Publications (Preparation of manuscripts, books, articles, etc)
  a. Books published or in progress:
     i. Screening for depression in diabetes; a practical guide
        - **Cathy E. Lloyd and Norbert Hermanns**
        - Publisher: Springer-Verlag (published in 2012)
     ii. **Karger Press** has invited **Norman Sartorius** to edit a new book on co-morbidity of mental and physical illness. While it will include at least one chapter on diabetes and depression, it will also expand the discussion to include the co-morbidity of other mental disorders and medical conditions. (IN PROGRESS)
        - **Richard Holt** and **Mario Maj** will assist in the editing and several DDD participants have expressed interest in submitting articles from their different professional perspectives.
  b. Supplement to the *Journal of Affective Disorders* vol. 142/S1 (2012) S1–S88, ELSEVIER.
     A special Supplement to the *Journal of Affective Disorders* on diabetes and depression was published early in October 2012 and distributed to subscribers and members of the *International Society of Affective Disorders*. The DDD distributed copies to all DDD members and participants of the NIH international conference on diabetes and depression in...
Washington, D.C. in October. A complete list of the articles and papers included in the supplement is provided below. Each paper represents the culmination of original work organized and accomplished through DDD collaboration.

i. Editorial
   i. Dialogue on Diabetes and Depression: Dealing with the double burden of co-morbidity. R.I.G. Holt and W.J. Katon (UK, USA) S1

ii. Commentary
   i. The Dialogue on Diabetes and Depression (DDD): Origins and achievements. N. Sartorius and L. Cimino (Switzerland, USA) S4

iii. Papers
   i. Epidemiology of depression and diabetes: A systematic review. T. Roy and C.E. Lloyd (UK) S8
   iv. Excess burden of type 1 and type 2 diabetes due to psychopathology. E. Atlantis (Australia) S36
   v. Economic aspects of the association between diabetes and depression: A systematic review. I. Molosankwe, A. Patel, J.J. Gagliardino, M. Knapp and D. McDaid (UK, Argentina) S42


c. Other published articles:
   i. The Co-Occurrence of Diabetes and Depression: An Example of the Worldwide Epidemic of Comorbidity of Mental and Physical Illness; *Annals Academy of Medicine, Singapore*. October 2012. N. Sartorius, L. Cimino.
   ii. “Addressing mental disorders in medicine and society” Oxford University Press Blog on WMHD
   iv. “Depression Screening Tools used for measuring depression among people with type 1 and type 2 diabetes; a systematic review.” Accepted
TRAINING AND EDUCATION ON COMORBIDITY

- **ICN / DDD African Nurse Training Program**
  a. The DDD completed the 6th and 7th African Nurse Training Programmes in Ethiopia from 23 to 25 July and in Kenya from 26 to 28 July. Thirty (30) nurses, most of them teachers in nursing schools, were trained in each country representing a good geographic distribution. In both cases the nurses included in the courses were highly experienced and participated very actively in the instruction. Good cascading of the learning is expected as a result of strong action plans and expressed interest in opportunities to collaborate on international projects.
  b. Media coverage was good in both countries as exemplified by the following YouTube link uploaded from a TV station in Kenya: [http://www.youtube.com/watch?v=ZJrtVF2oBNM](http://www.youtube.com/watch?v=ZJrtVF2oBNM)
  c. This brings to seven the number of ANTP programmes in Africa including previous programs (2011) in South Africa, Botswana, Lesotho, Swaziland and Uganda.
  d. These events were developed through a collaboration of International Council of Nurses (ICN), Association for the Improvement of Mental Health Programmes, International Diabetes Federation with in-kind support from World Federation for Mental Health, Diabetes-UK and the National Nurses Associations of Ethiopia and Kenya. Eli Lilly and Company and Lundbeck Institute of Neuroscience also contributed both financial support and logistical support to the projects.
  e. Several planning meetings were held to organize these events – including a Technical Advisory Committee meeting in London on January 26, 2012
  f. A wrap-up meeting for the Africa Nurse Training Programme was held in Copenhagen in November to debrief the recent nurse trainings in Ethiopia and Kenya and to capture the learning from all of the completed trainings in the 7 African countries.
  g. The training modules are now being further refined and streamlined to be utilized by the ICN for further nurse training in Africa – and in the preparation of materials for courses in other regions, such as the Far and Middle East and the countries of the Western Pacific (IN PROGRESS).

- **DDD / WPA International Psychiatrist Training Programme in Co-Morbid Diabetes and Depression (IN PROGRESS)**
  a. In 2012, the World Psychiatric Association expressed interest in developing an international psychiatrist training programme on diabetes and depression that can be offered during WPA congresses and meetings.
  b. In October, Norman Sartorius and Larry Cimino attended the World Psychiatric Association (WPA) International Conference in Prague and met with the Secretary for education of the WPA, the chairperson of the WPA Education Section and members of the Educational Committee of the WPA to discuss the development of this international training programme. The DDD subsequently developed and submitted a programme proposal which was presented to the WPA Executive
Committee at the end of November.

- **Development of DDD Psychiatrist Training Course on Co-Morbid Diabetes and Depression at European Psychiatric Association meeting (IN PROGRESS)**
  a. In late 2012, the European Psychiatric Association accepted a DDD proposal to include a course on co-morbidity for psychiatrists in Nice, France at its April 2013 meeting. This programme will serve to further develop the curriculum and materials to be used in the training of psychiatrists. **Dr. Sartorius** will be the director of the course and **Linda Gask** and **Richard Holt** have volunteered to serve as co-directors and faculty members.
  b. The above programme will also serve as the basis for 4 separate activities directed at psychiatrists at the **Asian Federation of Psychiatric Associations 4th World Congress** that will take place in Bangkok, Thailand from the 19th to the 23rd of August 2013. Norman Sartorius will deliver a keynote lecture to the assembly on comorbidity. The DDD will have the opportunity to share details of its international psychiatrist-training course with the presidents of the national societies, and will then conduct a 4-hour training programme for congress participants. Finally, the DDD has been asked to organize a symposium on the topic of diabetes and depression as part of the scientific programme of the congress. (ALL PLANS ARE IN PROGRESS)

- **Development of DDD/WONCA Co-morbidity Training Programmes for Family Doctors (IN PROGRESS)**
  a. Several discussions were held with WONCA in 2012 regarding the potential for a training programme on co-morbidity for family physicians – starting with an in-person meeting on January 27th in London.
  b. In November, 2012, the DDD held a preliminary planning meeting in Copenhagen with **Jan de Maeseneer** representing WONCA and **Richard Holt, Linda Gask, Helen Millar and John Hayes** contributing their DDD experience along with **Norman Sartorius and Larry Cimino**.
  c. Further programme planning will proceed at a meeting that **Dr. de Maeseneer** will host at the University of Ghent in Belgium on the 7th and 8th of March, 2013 to agree on the programme that best meets the needs of family doctors. Training for family doctors will focus on development of clinical skills for use in identification and management of co-morbid diabetes and depression.
  d. **Professor Franz Caspar**, the President of **the International Federation of Psychotherapy (IFP)** will also attend the planning meeting, as the IFP will join DDD as one of its member associations.
  e. **Dr. Johan Wens, President of Primary Care Diabetes Europe and Mrs. Anne Mari Felton, President of FEDN (Federation of European Nurses in Diabetes)** will also participate in this planning meeting to consider future collaborations with DDD to address the training needs of their constituencies.
  f. The course for general practitioners will take place in October 2013 under the joint, DDD and WONCA aegis (possibly with the co-sponsorship of IFP). Family physicians from 6 to 8 European countries will be trained and also provide feedback on how the programme might be improved. It was stressed that it is likely that the programme will be particularly important for countries where family physicians have little or no access to specialists.
• Miscellaneous Courses
  a. The first Kazakhstan EASD Postgraduate course – Almaty, Kazakhstan, 25-27 October 2012, featured a session by Richard Holt on “Dealing with Diabetes and Depression”
  b. European Psychiatric Association (EPA) special summer school course on co-morbidity; July, 2012, was co-chaired by Norman Sartorius and Norbert Hermanns with Henk Parmentier (UK), Lauber (Germany) and Dieffenbacher (Germany) serving as faculty.

RESEARCH PRIORITIES IN COMORBID DIABETES AND DEPRESSION
• NIDDK / NIMH International conference on Diabetes and Depression, October 9 – 11, 2012; Washington, DC.
  a. The US National Institutes of Health (NIDDK and NIMH) sponsored an International Conference on diabetes and depression in Washington, DC, on the 9th and 10th of October. The DDD participated in the organization of the meeting and helped to make it truly international by supporting the travel of experts from a number of countries. The aim of the conference was to review current knowledge about comorbid diabetes and depression and identify the gaps in knowledge that should be addressed by research, by assembling and examining information from services and through collaboration between scientists and practitioners working in this field.
  b. A smaller group convened for a half-day Summation Meeting on October 11th to synthesize the key takeaways from the meeting and identify the major research gaps in this field.
  c. Summaries of the discussion concerning gaps and directions for future research in concerning (i) Pathogenesis and (ii) Treatment, Prevention and Public Health were produced.
  d. The final conference agenda, a list of conference participants, and a summary of the research gaps and opportunities are included as attachments with this document.
  e. A small subset of speakers are developing a draft paper about the meeting and key findings, to be submitted to a number of diabetes, mental health and primary care journals (IN PROGRESS)
  f. Additionally, the findings from the meeting will be circulated within NIDDK and NIMH to inform future research priorities
  g. Several planning meetings and teleconferences were held in the months leading up to the NIH meeting, including a 17th September pre-conference speakers teleconference to organize the panel discussion “Dissemination, Implementation and Public Health”

• International Epidemiology Study of Diabetes and Depression (IN PROGRESS)
  a. A proposal for an international study of the frequency of depression in centers for the treatment of diabetes, developed by Cathy Lloyd and other colleagues, was submitted to EFSD for funding consideration. Six centres in Europe and 6 in other parts of the world expressed their interest to participate in this work. Additional funds have been solicited to support the launch of this study from a variety of funders.
b. The DDD are proceeding with an even broader study on this topic in target countries around the world. Prospective researchers in a number of countries, both in Europe and elsewhere, have agreed to undertake the study with their institutions covering local expenses with their own resources supplemented in some cases by additional local funding sources. Therefore, the study will include research institutions in Brazil, China, Ethiopia, Germany, India, Italy, Kenya, Mexico, Pakistan, Poland, Russia, Serbia, Thailand and Ukraine. Cathy Lloyd is also seeking local support for UK participation in the study.

c. A start up meeting of principal investigators from each country in March in the form of a symposium adjunct to the Diabetes UK meeting will take place in Manchester (9 – 11 March 2013).

DDD PLANNING AND DEVELOPMENT

- Teleconferences and other routine communications with the DDD
  a. Global Community Teleconferences: January 10, February 7, March 17, April 21, May 24, June 18, July 16, August 20, September 17, October 30, December 4
  b. Comprehensive written updates of projects, status, and action items following each Global Community Teleconference
  c. Regular distribution of new articles (with executive summary) on co-morbid diabetes and depression to the DDD community.
  d. Thematic slide sets produced and provided on the website to the DDD community as a resource for development of scientific presentations; including topics such as epidemiology, pathogenesis, treatment and health economics

- In-person planning meetings
  a. In October, on the day before the NIH International Conference, 21 DDD participants met to share ideas and insights about current programmes and the priorities for the coming year.
    i. The group also identified additional stakeholder groups who should be invited to participate in the DDD, in order to harness expertise from all aspects of comorbid care.
    ii. Several planning meetings took place during August and September to develop the agenda and materials for this meeting. Outreach to these new groups is ongoing (IN PROGRESS)

- Ongoing communication with sponsoring institutions (corporations and foundations)
  a. Ongoing project discussions with BMS, Eli Lilly and Company, Johnson and Johnson, Lundbeck Institute of Neuroscience, Merck, Novo-Nordisk, Pfizer and Sanofi,
  b. Ongoing project discussions with Nestlé and Pepsico,
  c. Ongoing communication and participation in the outreach activities of the IFPMA (International Federation of Pharmaceutical Manufacturers and Associations).
Identification and recruitment of new participating members (professional associations, government agencies, research institutions, individual experts)
  a. Official participating membership of the International Federation of Pharmaceutical Manufacturers & Associations (IFPMA)
  b. Official participating membership of the World Association for Social Psychiatry (WASP)
  c. Official participating membership of the International Pharmaceutical Association (IPF), the international association of pharmacists
  d. Official participating membership of the US-based National Network of Depression Centers (NNDC)
  e. Official participating membership of the International Society for Bipolar Disorder (ISBD)
  f. In discussions with the NCD Alliance, Primary Care Diabetes Europe, Federation of European Nurses in Diabetes and the International Federation of Psychotherapists regarding official participating membership of the DDD.

Appendices
NIH / DDD International Conference on Diabetes and Depression

1. Agenda
2. Roster of participants
3. Gaps, Opportunities, Resources and Recommendations
<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Speaker</th>
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<tbody>
<tr>
<td>8:30 a.m.</td>
<td>Introduction—Opening Remarks</td>
<td>Christine Hunter, National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK)</td>
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<td>Remarks From NIMH: Setting the Stage</td>
<td>Tom Insel, Director, National Institute of Mental Health (NIMH)</td>
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<tr>
<td>8:45 a.m.</td>
<td>Broad Overview of the Meeting and the State-of-the-Science:</td>
<td>Sherita Golden, The Johns Hopkins University School of Medicine (JHUSM)</td>
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<td>Incidence, Prevalence, and Bi-directionality of the Diabetes and Depression Association</td>
<td>Norman Sartorius, Dialogue on Diabetes and Depression</td>
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<td>Public Health Impact of Co-morbid Diabetes and Depression</td>
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<tr>
<td>9:15 a.m.</td>
<td>Mechanisms Linking Diabetes and Depression: Session Introduction</td>
<td>Irwin Lucki, University of Pennsylvania</td>
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**Session 1: Mechanisms Linking Diabetes and Depression**

**Session Chairs: Irwin Lucki and Sherita Golden**
<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Speaker</th>
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<tbody>
<tr>
<td>9:20 a.m.</td>
<td>Overview of Potential Mechanisms for the Link Between Diabetes and Depression</td>
<td>Khalida Ismail, King’s College London</td>
</tr>
<tr>
<td>9:40 a.m.</td>
<td>The Role of the HPA Axis in Neuroplasticity as a Link to Depression and Cognitive Co-morbidities in Animal Models of Diabetes</td>
<td>Alexis Stranahan, Georgia Health Sciences University</td>
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<tr>
<td>10:00 a.m.</td>
<td>Evidence of HPA Axis Dysfunction in Depression and Diabetes in Clinical and Population-based Studies</td>
<td>Sherita Golden, JHUSM</td>
</tr>
<tr>
<td>10:15 a.m.</td>
<td>Depression and Risk of Cognitive Decline in Diabetes—Evidence From Human Studies</td>
<td>Rachel Whitmer, Kaiser Permanente Division of Research</td>
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<tr>
<td>10:30 a.m.</td>
<td>Question-and-Answer Session</td>
<td>Moderator: Irwin Lucki, University of Pennsylvania</td>
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<tr>
<td>10:50 a.m.</td>
<td>Remarks From NIDDK: Setting the Stage</td>
<td>Griffin Rodgers, Director, (NIDDK)</td>
</tr>
<tr>
<td>11:00 a.m.</td>
<td>The Role of Circadian Rhythms in Regulating Metabolism—Basic Science Mechanisms</td>
<td>Orfeu Buxton, Brigham and Women’s Hospital</td>
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<tr>
<td>11:20 a.m.</td>
<td>Effects of Sleep Disturbances on Metabolic Function, Diabetes Risk, and Depression</td>
<td>David Ehrmann, The University of Chicago</td>
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<tr>
<td>11:35</td>
<td>LUNCH (Boxed Lunch With Advance)</td>
<td>Moderator: Irwin Lucki, University of</td>
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**NEUROENDOCRINE FACTORS**

Hypothalamic-Pituitary-Adrenal (HPA) Axis
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<th>Time</th>
<th>Topic</th>
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<tr>
<td>a.m.</td>
<td><strong>Purchase)</strong></td>
<td>Pennsylvania</td>
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<tr>
<td>11:50 a.m.</td>
<td><strong>Inflammation</strong></td>
<td>Robert Dantzer, MD Anderson Cancer Center</td>
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<tr>
<td>12:10 p.m.</td>
<td>Evidence of Inflammation in the Pathophysiology of Depression and Diabetes in Human Studies</td>
<td>Charles Raison, University of Arizona</td>
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<tr>
<td>1:10 p.m.</td>
<td>Question-and-Answer Session</td>
<td>Moderator: Sherita Golden, JHUSM</td>
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<tr>
<td>1:25 p.m.</td>
<td><strong>BEHAVIORAL, PSYCHOSOCIAL, AND ENVIRONMENTAL FACTORS</strong></td>
<td>Tiffany Gary-Webb, Columbia Mailman School of Public Health</td>
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<tr>
<td>1:40 p.m.</td>
<td>Contextual Factors in Diabetes and Depression</td>
<td>Mary de Groot, Indiana University School of Medicine (IUSM)</td>
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<td>1:55 p.m.</td>
<td>Diabetes Distress Versus Depression: Implications for Glycemic Control</td>
<td>Jeffrey Gonzalez, Yeshiva University</td>
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<td>2:10 p.m.</td>
<td>Adherence to Diabetes Self-care Behaviors in Depression</td>
<td>Maria Kovacs, University of Pittsburgh School of Medicine</td>
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<td>2:25 p.m.</td>
<td>Question-and-Answer Session</td>
<td>Moderator: Peter Muehrer, (NIMH)</td>
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<td>2:40 p.m.</td>
<td><strong>BREAK</strong></td>
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<td>2:55 p.m.</td>
<td>Antidepressant Treatments in Animal Models of Diabetes</td>
<td>Irwin Lucki, University of Pennsylvania</td>
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<tr>
<td>3:15 p.m.</td>
<td>Association of Antidepressant and Antipsychotic Treatments With Obesity and Incident Diabetes in Population-based Studies</td>
<td>Richard Holt, University of Southampton</td>
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<tr>
<td>3:35 p.m.</td>
<td>Question-and-Answer Session</td>
<td>Moderator: Sherita Golden, JHUSM</td>
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<td>3:50 p.m.</td>
<td>Question-and-Answer Session</td>
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<td>4:05 p.m.</td>
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<td>4:25 p.m.</td>
<td>Panel Discussion: Implications for Clinical and Behavioral Research? What Are the Crucial Unanswered Research Questions? Question-and-Answer Session</td>
<td>Alan Jacobson, Winthrop University Hospital, and Robert Ratner, American Diabetes Association (ADA) Moderator: Christine Hunter, NIDDK</td>
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<tr>
<td>5:05 p.m.</td>
<td>Wrap-up and Logistics for Day 2</td>
<td>Christine Hunter, NIDDK</td>
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**Day 2–October 10, 2012/Cirrus Ballroom (Lobby Level)**

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<tr>
<th>Time</th>
<th>Topic</th>
<th>Speaker</th>
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<tr>
<td>8:00 a.m.</td>
<td>Welcome Back and Orientation to the Day’s Schedule</td>
<td>Peter Muehrer, NIMH</td>
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**Session 2: Treatment**

**Session Chair: Wayne Katon and Mary de Groot**
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<tr>
<th>Time</th>
<th>Topic</th>
<th>Speaker</th>
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<tbody>
<tr>
<td>8:10 a.m.</td>
<td>Session Introduction</td>
<td>Wayne Katon, University of Washington</td>
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<tr>
<td>8:15 a.m.</td>
<td>Are Evidenced-based Depression Treatments Effective in Treating Co-morbid Depression in Patients With Diabetes, and Do These Treatments Improve Diabetes Disease Control?</td>
<td>Christina Van der Feltz-Cornelis, Trimbos Institute</td>
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<tr>
<td>8:35 a.m.</td>
<td>Question-and-Answer Session</td>
<td>Moderator: Mary de Groot, IUSM</td>
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<tr>
<td>8:50 a.m.</td>
<td>Improving Depression Outcomes in Large Populations of Patients With Diabetes: Collaborative Depression Care</td>
<td>Paul Ciechanowski, University of Washington</td>
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<tr>
<td>9:10 a.m.</td>
<td>Question-and-Answer Session</td>
<td>Moderator: Wayne Katon, University of Washington</td>
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<tr>
<td>9:25 a.m.</td>
<td>Multi-condition Collaborative Care for Both Depression and Diabetes</td>
<td>Wayne Katon, University of Washington</td>
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<tr>
<td>9:45 a.m.</td>
<td>Question-and-Answer Session</td>
<td>Moderator: Mary de Groot, IUSM</td>
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<td>10:00 a.m.</td>
<td><strong>BREAK</strong></td>
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<tr>
<td>10:20 a.m.</td>
<td>Effect of Improving Diabetes Disease Control in Large Populations of Patients With Diabetes on Psychological Distress and Well-being</td>
<td>Patrick O’Connor, HealthPartners Institute for Education and Research</td>
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<tr>
<td>10:40 a.m.</td>
<td>Question-and-Answer Session</td>
<td>Moderator: Wayne Katon, University of Washington</td>
</tr>
<tr>
<td>10:55 a.m.</td>
<td>Improving Depressive Symptoms and HbA1C Outcomes in Patients With Type I Diabetes</td>
<td>Alan Jacobson, Winthrop University Hospital</td>
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<tr>
<td>11:15 a.m.</td>
<td>Question-and-Answer Session</td>
<td>Moderator: Mary de Groot, IUSM</td>
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<tr>
<td>11:30 a.m.</td>
<td>Comments on the Treatment Session</td>
<td>Mary de Groot, IUSM</td>
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<td>Time</td>
<td>Topic</td>
<td>Speaker</td>
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<tr>
<td>11:40 a.m.</td>
<td>Panel Discussion: What Are the Crucial Unanswered Research Questions?</td>
<td>John Hayes, National Network of Depression Centers, and Arie Nouwen, University of Birmingham</td>
</tr>
<tr>
<td></td>
<td>Question-and-Answer Session</td>
<td>Moderator: Peter Muehrer, NIMH</td>
</tr>
<tr>
<td>12:15 p.m.</td>
<td><strong>LUNCH</strong> (Boxed Lunch With Advance Purchase)</td>
<td></td>
</tr>
</tbody>
</table>

### Session 3: Prevention and Public Health

**Session Chairs: Richard Holt and Norman Sartorius**

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Speaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:15 p.m.</td>
<td>Session Introduction</td>
<td>Richard Holt, University of Southampton</td>
</tr>
<tr>
<td>1:30 p.m.</td>
<td>Prevention of Diabetes in Those With Depression: Findings From the Major Diabetes Prevention Trials</td>
<td>David Marrero, Indiana University School of Medicine</td>
</tr>
<tr>
<td>1:50 p.m.</td>
<td>Question-and-Answer Session</td>
<td>Moderator: Richard Holt, University of Southampton</td>
</tr>
<tr>
<td>2:05 p.m.</td>
<td>Prevention of Depression in Those With Diabetes</td>
<td>Edwin Fisher, University of North Carolina at Chapel Hill (UNC)</td>
</tr>
<tr>
<td>2:25 p.m.</td>
<td>Question-and-Answer Session</td>
<td>Moderator: Richard Holt, University of Southampton</td>
</tr>
<tr>
<td>2:40 p.m.</td>
<td><strong>BREAK</strong></td>
<td></td>
</tr>
<tr>
<td>3:00 p.m.</td>
<td>Roundtable</td>
<td>Chair: Norman Sartorius, Dialogue on Diabetes and Depression</td>
</tr>
<tr>
<td></td>
<td>Dissemination, Implementation, and Public Health Panel: The Evidence and</td>
<td>Panel:</td>
</tr>
<tr>
<td>Time</td>
<td>Topic</td>
<td>Speaker</td>
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<tr>
<td>4:30 p.m.</td>
<td>Concluding Remarks</td>
<td>Sherita Golden, JHUSM, and Norman Sartorius, Dialogue on Diabetes and Depression</td>
</tr>
</tbody>
</table>
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Gaps, Opportunities, Resources, Recommendations—Speaker Input

- **Sherita Golden, The Johns Hopkins University School of Medicine (JHUSM)**
  - Uniform cortisol sampling protocols and analytic strategies
  - Incorporation of dynamic measures of HPA axis function into human studies
    - Dexamethasone suppression test
    - Cortisol response to standardized mental stress
  - Understanding how currently used HPA axis measures relate to overall HPA axis activity and dynamics
  - Understanding predictive implications of the “blunted” diurnal cortisol profile for mental health and metabolic risk
  - Future studies focused on type 1 diabetes and depression and the implications for predicting diabetes control and complications
  - Examination of the neurohormonal response as a novel approach to primary prevention of type 2 diabetes in the setting of depression (complementing established measures)—evaluating the impact of corticotrophin releasing hormone and 11-beta hydroxysteroid dehydrogenase-1 antagonists and behavioral interventions on HPA axis function

- **Norman Sartorius, Dialogue on Diabetes and Depression**
  - Develop a roadmap that will help to direct research to problems related to comorbidity of mental and physical illness, exemplified by the diabetes/depression comorbidity
  - Help to create a network of scientists and institutions interested and willing to orient their work to comorbidity
  - Offer opportunities to increase awareness of the urgency of action concerning comorbidity

- **Irwin Lucki, University of Pennsylvania**
  - Greater development of neuroplasticity as a model for studying pathological mechanisms in animal models of diabetes
    - Translational methods – biomarkers, specimens, PET
• Models of stress/depression in diabetic animals to evaluate risk factors: genetic and epigenetic factors, environmental stress, developmental factors
• Neural circuitry associated with behavioral regulation in diabetes
• Individual differences in vulnerability and resilience
• Leading to biomarkers for personal treatments
  o Evaluation of existing antidepressant and antipsychotic medications in animal models of diabetes for mechanisms and treatments
  o Development of novel experimental treatments for diabetes and depression
    ▪ Regulation of glycemic control (direct mechanisms)
    ▪ Regulation of neuroplasticity (indirect mechanisms)
    ▪ Ex. GLP-1 agonists

• Khalida Ismail, King’s College London
  o Questions to question:
    ▪ Is there a consensus on cause-effect versus common factors for depression-diabetes link
    ▪ Amongst the many potential processes, which ones have most face validity for further study
    ▪ Is there a psychological phenotype unique to those with depression and T2DM
    ▪ Can we envisage one-for-two pharmacotherapy and/or psychotherapy for primary and secondary prevention

• Alexis Stranahan, Georgia Health Sciences University
  o Info not included in slides

• Rachel Whitmer, Kaiser Permanente Division of Research
  o How to move forward:
    ▪ longitudinal studies of diabetes, depression, and cognition
    ▪ large sample size
    ▪ treatment
    ▪ lifecourse approach
    ▪ Cross talk across disciplines
    ▪ Risk Prediction
    ▪ Targeted prevention

• Orfeu M. Buxton, Harvard Medical School
  o Role for energetics as a nodal point between sleep, diabetes, and depression?
  o Not “more funding” (not happening) but how about SPECIFIC funding for major pilot studies at the intersection of sleep or sleep disorders, diabetes, and depression?
  o CHECK population-levels studies leveraging major long-term sleep study findings
• **David Ehrmann, The University of Chicago**
  o Is the pathogenesis of depression in patients with diabetes causally linked to OSA or is the diabetic state per se the driving force in the development of depression?
  o Elucidation of disruptions in endocrine axes and neurotransmitter pathways common to depression, diabetes, and OSA.
  o Better studies needed to define mechanisms underlying improvement in depression that have been associated with improved glycemic control as well as improved OSA.

• **Robert Dantzer, MD Anderson Cancer Center**
  o • Critical gaps and opportunities for research
    ▪ Although inflammation is well known to be associated with diabetes and to cause symptoms of depression, there has been no attempt to study in a systematic manner the relationship between inflammation and depression in diabetic patients.
  o What is needed to move the science forward?
    ▪ The most straightforward approach would be the addition of biomarkers of inflammation (e.g., serum levels of CRP and IL-6, ratio of kynurenine over tryptophan) in clinical studies on the relationship between diabetes and depression providing depression is described in terms of symptoms instead of psychiatric diagnosis.
    ▪ Encourage those researchers who are engaged in preclinical studies of diabetes and cognition and/or neurogenesis to incorporate in their studies behavioral tests of depression and biochemical measures of inflammation.
    ▪ Facilitate exchanges between psychoneuroimmunologists and diabetologists by organizing a symposium on diabetes, inflammation, and depression in a diabetes meeting and inviting clinical and experimental researchers working on inflammation and depression to participate.

• **Charles Raison, University of Arizona**
  o Are inflammatory processes especially relevant to depression in the context of diabetes.
  o Would anti-inflammatory strategies be especially beneficial for the treatment of depression in the context of diabetes.
  o To what degree do overlapping developmental conditions (personal, cultural, ecological) explain comorbidity of diabetes and depression and how central are inflammatory processes to this overlap.

• **Tiffany Gary-Webb, Columbia Mailman School of Public Health**
  o Consistent relationships for neighborhood factors and depression.
o More exploration needed for neighborhood and diabetes as an outcome
o More studies needed that attempt to understand whether the depression –
diabetes relationship is modified by neighborhood factors

- **Mary de Groot, Indiana University School of Medicine (IUSM)**
o Standardize language and use of concepts in study designs and publications
o Prospective longitudinal studies of psychiatric diagnoses in type 1 and type 2 diabetes are needed to characterize the course of comorbidity
o Validation studies of diabetes-related distress in pediatric type 1 and type 2 populations
o Development of empirically-validated treatment protocols and prevention protocols to address diabetes-related distress
o Using an ecological approach: patients, family support systems, physicians
o Expanding scope of evaluation to the role of positive emotional health vis a vis behavioral and glycemic outcomes
o Treatment: Consider augmentation of treatment modalities such as exercise or community based programs, need to understand dose threshold for non-medication approaches, and is stepped care or simultaneous treatment best?

- **Jeffrey Gonzalez, Yeshiva University**
o Do we know what we are talking about?
  ▪ Measurement issues for depression – false positives
  ▪ Diabetes distress vs. depressive symptoms
  ▪ Measurement of adherence – A1C is not adherence
o Can integrative care be delivered in a sustainable manner?
  ▪ Intervention intensity matched to depression severity
  ▪ Cost-conscious and wide-reaching

- **Maria Kovacs, University of Pittsburgh School of Medicine**
o Unresolved Issues:
  ▪ The relations of self-rated depression questionnaire cut-off scores and diagnosable depression in Type 1 & 2 populations
  ▪ The rate of positive family history of
  • depression and the risk it poses for
  • depression in Type 1 & 2 youth
  ▪ Generalizability of other established risk factors for pediatric depression to these populations
  ▪ Psychophysical substrata of depression

- **Richard Holt, University of Southampton**
o What do you see as the critical gaps and opportunities for research in your area?
  ▪ Adequately powered RCT for antidepressants assessing metabolic risk
- Understanding of how psychotropic medication interacts with other risk factors
  - What is needed to move the science forward?
    - A minimum data set for reporting possible adverse metabolic consequences of treatment
    - Consideration of potential effects of psychotropic medication in future diabetes prevention trials
- **Alan Jacobson, Winthrop University Hospital**
  - In poorly controlled, depressed T1DM patients: Design and implement a carefully-crafted/well-designed multi-site, 3-arm trial comparing antidepressant treatment, psychotherapy, to controls and which includes psycho-education specific to decreasing barriers to improving glycemia.
- **Robert Ratner, American Diabetes Association (ADA)**
  - Panelist so slides not used. From my notes:
    - Need to examine different etiologies for depression and diabetes comorbidity
    - Take advantage of exiting cohorts to understand mechanisms (e.g. MESA)
    - Conduct a prospective study that includes health risk behaviors, biomarkers, risk factors, adherence, etc.
- **Wayne Katon, University of Washington**
  - Since I am very public health oriented and feel strongly about bringing effective treatments as rapidly as possible to patients I am not in favor of expending more funds on measurement issues or even epidemiological studies. Here are the three crucial recommendations for studies I suggest:
    - a multisite depression collaborative care trial for adolescents with type 1 diabetes and depression that allows choice of either CBT or meds but also allows changing or augmenting treatment for those not improving on initial choice of treatment. I don’t think we need more small efficacy studies of CBT or meds but instead an effectiveness study which determines whether we can deliver these treatments to large populations
    - a multisite trial of TEAMcare to determine whether TEAMcare can improve not only depression, glycemic, blood pressure and LDL control but also prevent complications and decrease utilization and costs which the original trial was underpowered to definitively do.
    - a just in time type of RFA to take advantage of large national experiments such as the CMS demonstration project adapting TEAMcare to 8 health systems. There is likely to be site variability in quality of care and outcomes and studying this variability can help us better understand how to scale up evidence based interventions to large systems of care
Christina Van der Feltz-Cornelis, Trimbos Institute

- The limitations of the studies regarding treatment so far is that there are few of them; that less of them address depression in the sense of major depressive disorder; and that many studies do not use the prevalence of a depression as inclusion criterion for the studies, which makes any conclusions about impact of treatment on depression invalid.
- So there should be more studies that address MDD as comorbid condition, correctly assessed at inclusion of the study.
- Furthermore, although there are many epidemiological studies, treatment studies in terms of RCTs are rare. There should be more RCTs.
- In terms of interventions, I do think that there are indications that Blended E health care interventions may be an option, as E health interventions without treatment contacts have too small results and as there are indications that they even may lead to higher mortality rates.
- Also, treatment should not only address the depression but also the diabetes management, as only treatment of the depression does not improve glucose levels enough.
- Furthermore, there is a lack of studies that evaluate screening plus follow up as intervention in diabetes, although patients ask for screening programs. It may well be the question how cost effective they are; so cost effectiveness studies in that field would be needed as well.

Paul Ciechanowski, University of Washington

- Development of case management for multiple conditions (psychiatric and medical) carried out by varying constellations of providers
- Further development, in diabetes populations, of interventions for psychiatric conditions comorbid with depression (e.g. anxiety, substance abuse, serious mental illness)
- Development of in-home, community-based interventions for diabetes and depression (e.g. PEARLS, a Community-Based Depression Treatment)
- Leveraging technologies in carrying out collaborative care, e.g. telemedicine, registries, online/mHealth access for patients/providers
- Development of fidelity measures for collaborative care interventions
- Testing of robust models of implementation (e.g. how to deliver just-in-time training, account for attrition in populations, use of online/webinar supervision, case review and booster sessions)
- Resources:
  - Resources to support online and in-person trainings of established collaborative care treatments for depression and diabetes
  - National and state initiatives to develop payment schemes supporting case management appointments, team-based care, case supervision
• Initiatives to develop “best practice” approaches for team-based care for diabetes and depression (and co-morbid conditions)

• **Patrick O’Connor, HealthPartners Institute for Education and Research**
  - Need to assess depression severity longitudinally (admissions, area under the PHQ-9 curve)
  - Need to fully assess safety of depression meds
  - Need to consider depression subtypes (cannot do at present)
  - Need to consider diabetes subtypes and phenotypes (age, race, BMI, T1/T2, GDM, Pre-diabetes, various comorbidities, duration, etc.)
  - Diabetes inception cohorts are needed
  - Mediators of non-CV increased mortality (Lin, 2009)
  - Joint attention to DM control and Depression control should be a clinical priority
  - Clinic-randomized trials of care models:
    - Case-Management Model: effective but expensive
    - Point-of-care EMR-based Clinical Decision Support: good continuing education
  - Weigh the relative benefits of Depression Control compared to the benefits of Glucose, BP, Lipid, and Tobacco Control (life expectancy, quality of life)
  - Extend research and analysis to Bipolar Affective Disorder, Schizophrenia, and Schizoaffective Disorder.
  - Large longitudinal diabetes databases (EMR-linked) would move us closer to many of these goals
  - Supreme-DM, $8M AHRQ project, has established a 1,300,000 diabetes patient EMR-linked registry with a 2.6M comparison group from source population
  - Can be used to address many of these issues moving forward
  - Helmsley Fund has sponsored a T1 Registry based at academic centers—first results this year
  - Assess natural experiments in chronic care delivery (such as case management) or innovative EMR-based care improvement strategies (such as point-of-care clinical decision support), or of novel approaches to activate and engage patients in care (NEXT-D)
  - Develop routine surveillance via EMR (NLP) for risk of depression and alert provider to intervene pro-actively.
  - Deploy “matrix surveillance” of diabetes care quality and care patterns, using a large and detailed registry, to assessing natural experiments occurring in the delivery system.

• **John Hayes, National Network of Depression Centers**
  - Panelist so slides not used. From my notes:
- Need to develop new treatment pathways (pharmacotherapy) through better understanding of mechanisms
- Need to better account for culture in how we approach treatment.

**Arie Nouwen, University of Birmingham**
- Panelist so slides not used. From my notes:
  - Need to understand what treatment works for whom under what conditions. Who should deliver the treatment, what kind of training is needed
  - Break down CBT—lots of components/what do we really mean?
  - Integrate mechanistic assessments as a part of treatment research
  - Better identify depression, primary care is still poor at recognizing and treating
  - Include patient reported outcomes in research
  - More research on other serious mental illness comorbidities with diabetes
  - Conduct a multisite trial of TEAMcare across various healthcare settings
  - Test a lay health worker model for treating depression

**David Marrero, Indiana University School of Medicine**
- We don’t know whether effective prevention or treatment of depression can reduce incidence of type 2 diabetes
  - Need for a well-controlled RCT
- We don’t know how depression impacts treatment for primary prevention
  - Need to assess depression in future prevention research
  - Need for a well-controlled RCT
- The assessment of depression is too varied
  - Need to standardize how we diagnose and classify severity of depression
  - Consensus conference
  - Training opportunities
- Need a better understanding of the mechanisms that link depression and pre-diabetes
  - Systematic collection of necessary samples (e.g., cortisol, C-reactive protein, TNF, proinflammatory cytokines
- Interventions need to explore the potential of primary prevention interventions to impact HRQoL
  - Workshops to consider counseling approaches for program participants

**Edwin Fisher, University of North Carolina at Chapel Hill (UNC)**
Major emphasis on innovative ways of addressing the millions of people with each and both who will not be reached by specialist services.

Key may be tremendous overlap so that managing one makes major contributions to managing the other.

Perhaps diabetes and much depression are two manifestations of a common set of psychological, lifestyle, and biological perturbations?

To what extent might population approaches be enhanced by focusing on the common ground of diabetes and depression and the behaviors that subtend both (healthy diet, PA, sleep, stress coping, healthy relationships), rather than on each as a separate, albeit, comorbid entity?

Final Panel—from Christine's notes

- Santosh Chaturvedi, National Institute of Mental Health and Neurosciences
  - Critical Gaps in developing countries –
    - Reasons from rapid escalation of Diabetes in developing countries; The latest projection shows that by the year 2030 India will have 79–87 million adults with diabetes. In the 1970s, the prevalence of diabetes among urban Indians was reported to be 2.1 per cent and this had risen to 12.1 per cent by 2002. Equal numbers of prediabetics are there with impaired glucose tolerance. Secular trend analysis shows an increase in diabetes prevalence among rural population at a rate of 2.02 per 1000 population per year. The rate of increase was high in males (3.33 per 1000 per year) as compared to females (0.88 per 1000 per year).
    - Psychosocial and environmental factors in this increase in prevalence.
    - Lack of in knowledge in the area of depression and diabetes in developing countries are much more than other parts of the world. There are sporadic studies on the prevalence of diabetes mellitus in India, but these give a good indication of the large numbers in near future, both in urban and rural areas.
    - Lack of research evidence for depression and diabetes comorbidity
  - Future directions in developing countries
    - To gather or generate evidence which could address the critical gaps.
    - Need for indigenous, cost effective methods of training health professionals to deal with depression and diabetes,
    - Need for research on evolving affordable methods of managing coexisting depression and diabetes, within the existing health care delivery systems.
    - Study of costs and financial loss and burden on society due to depression and diabetes
• Research on the rising risk of diabetes in the low birth weight and malnourished persons, and association of depression in this population would be of interest and importance.
• Need for services to deal with depression in diabetics and diabetes in depressives.

• Leonard Egede, Medical University of South Carolina
  o Need to understand what is satisfactory screening for depression and communicate that clearly to healthcare providers along with clear guidance about what works (with options—in situation/setting X do Y, in situation/setting A do B, etc.,)
  o More research needed to understand specifics in T1D

• Edwin Fisher, UNC
  o Diagnostic categories for depression may be the wrong paradigm. Are there other dimensions that would be more helpful for classifications such as commonalities in history or genetics

• Wayne Katon, University of Washington
  o Evaluate natural experiments in healthcare. For example CMS adopting TEAMcare and rolling it out in 8 states and various types of healthcare organizations

• David McDaid, The London School of Economics and Political Science
  o More cost analysis is needed; especially in non U/S studies
  o Could mandate that cost analysis be part of funded studies
  o Allow longer term follow up to really evaluate cost effectiveness since cost benefits not usually realized immediately
  o Support retrospective analyses of cost
  o Include non-healthcare costs—jobs, absenteeism, presenteeism

• Brian Oldenburg, Monash University
  o Need to bring together different disciplines in research and utilize new study designs (not just RCT)

• François Pouwer, Tilburg University
  o New systematic reviews on depression and A1C
  o More discussion about the role of screening—what are we measuring
  o Develop and evaluate new treatments such as the efficacy of anti-inflammatory drugs in a subset of comorbid patients
  o More focus on prevention

• Robert Ratner, ADA
  o Study of comorbidities must include other mental health conditions besides depression
  o Consider research on behavioral nudges
  o Need to include outcomes that are meaningful to patients besides mortality

• Richard Roberts, University of Wisconsin School of Medicine & Public Health
Current researched models of care do not match reality of primary care

Need to break free of RCT—Practice Based Research Networks (PBRNS), pragmatic trials, systems science, longer term studies and inclusion of patient reported outcomes

Need more research on effective health communication

Iatrogenic depression—maybe the diagnosis of type 2 diabetes is the optimal time to initiate a prevention intervention for depression