DiabCare Malaysia 2013
Action Plan Workshop

13th November 2014
Putrajaya

Supported by
The most recent National Health and Morbidity Survey (NHMS) conducted by the Malaysian Ministry of Health in 2011 (NHMS IV) demonstrated a 31% rise in prevalence of diabetes mellitus (DM) among adults aged 18 or older in the space of 5 years, growing from 11.6% (reported in the 2006 NHMS III) to 15.2%. A more recent publication recorded an overall diabetes prevalence of 22.6% in 2013, an almost 100% increase from 2006 (Wan Nazaimoon et al., 2013). In addition to the diagnosed population, it was estimated that more than half (53%) of people with diabetes remained undiagnosed, effectively meaning that only 47% of people with diabetes have been receiving the requisite care. Even among the diagnosed population, only 22% were estimated to have achieved the treatment goal of HbA1c level < 7.0% (Mafauzy et al., 2011).

The prevalence of diabetes among Malaysian adults is only expected to grow due to increased urbanization, and the associated sedentary lifestyle and eating habits. These lifestyle shifts have been causing an increase in abdominal obesity, the main risk factor for type 2 diabetes and cardiovascular disease, with an estimated 43% of the Malaysian population having abdominal obesity.

Taking all this into account, it comes as no surprise that diabetes poses a significant healthcare burden in Malaysia. According to a 2010 estimate, treatment of diabetes and its complications accounted for 16% of the Malaysian healthcare budget (2.4 billion Malaysian Ringgits) (Zhang et al., 2010), with the majority of resources being used to treat diabetes complications. Serious complications of poorly treated diabetes included blindness, acute myocardial infarction, kidney failure and lower limb amputations.

In spite of the comprehensive access to care available to diabetes patients and national practice guidelines detailing treatment procedures, there remain a low proportion of patients achieving adequate blood glucose control, resulting in otherwise preventable diabetes complications.
What Is DiabCare Asia?

Overview

Rising trends in diabetes in the Asia region, combined with a lack of quality data and the need to consolidate different healthcare systems, cultures and methods, mean that a concentrated effort was needed to gain a comprehensive understanding of the Asian diabetes landscape.

DiabCare Asia is a multinational project initiated in 1997 to provide large-scale, standardized information about:

- management of diabetes and diabetes-related complications in type 1 and type 2 Asian patients
- patient characteristics and the status of care across countries in Asia

The goal of DiabCare Asia is to provide information to facilitate healthcare policy making and improve the standard of diabetes care provision.

History

The basis for DiabCare Asia is the 1989 Saint Vincent Declaration for Diabetes Care and Research in Europe, a joint agreement between the World Health Organization (WHO) and the International Diabetes Federation (IDF) European offices to create conditions leading to a major reduction in the burden of disease and death associated with diabetes mellitus.

As part of this agreement, over 130 diabetologists from 21 countries collaborate to develop consensus tools to measure:

- patient outcomes
- intermediate metabolic outcomes
- markers of diabetes tissue damage
- risk factors
- pregnancy
- lifestyle

Formats for feedback-driven improvement in the quality of care, and for comparison of performance across centres were also developed.
DiabCare Malaysia

The first DiabCare Malaysia project was conducted in 1997 and has since evolved significantly. Following completion of subsequent DiabCare Malaysia projects in 1998, 2001, 2003 and 2008, which provided insights into glucose control and complications management in diabetes patients in selected populations, DiabCare Malaysia 2013 was designed as a cross-sectional, observational study to assess the current situation of diabetes and diabetes-related complications management.

Sources of data for DiabCare Malaysia 2013 included public hospitals and teaching hospitals which treated at least 100 patients per month. Data was collected through Case Record Forms (CRFs) and questionnaires (see Figure 1).

Figure 1: DiabCare Malaysia 2013 methods of data collection

<table>
<thead>
<tr>
<th>Case Record Form</th>
<th>Questionnaires</th>
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</thead>
<tbody>
<tr>
<td>- Diabetes management</td>
<td></td>
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<tr>
<td>- Demographics</td>
<td></td>
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<tr>
<td>- Treatment</td>
<td></td>
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<tr>
<td>- Diabetes control</td>
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<tr>
<td>- Glucose control, etc.</td>
<td></td>
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<tr>
<td>- Diabetes complications</td>
<td></td>
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<tr>
<td>- Health related quality of life assessment</td>
<td></td>
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<tr>
<td>- Treatment adherence</td>
<td></td>
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<tr>
<td>- Patient’s perspective on hypoglycemia</td>
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</tbody>
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Data collected using these methods included information on:

- demographics
- medical history
- risk factors
- self-monitoring data
- diabetes education
- complications including cardiovascular disease, eyes and foot management
- diabetes management
- HbA1c levels

The primary objective of DiabCare Malaysia 2013 was to describe the status of diabetes care using the proportion of patients with an HbA1c level <7.0% as the primary endpoint. Secondary objectives included investigations into the relationships between duration of diabetes and diabetes complications, the psychological status of patients, frequency of hypoglycemia symptoms and severity, and patient perceptions of hypoglycemia. The endpoints of DiabCare Malaysia 2013 are described in Figure 2 below.
Figure 2: DiabCare Malaysia 2013 study endpoints

<table>
<thead>
<tr>
<th>Primary endpoint</th>
<th>Secondary endpoints*</th>
<th>Secondary endpoints*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion of diabetes patients having HbA1c &lt;7.0% evaluated at the first visit*</td>
<td>• Mean duration of Disease</td>
<td>• Proportion of people with Dyslipidemia</td>
</tr>
<tr>
<td></td>
<td>• Mean duration of Treatment</td>
<td>• Hypertension</td>
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<td></td>
<td>• Proportion of patients on OAD therapy</td>
<td>• CV complications</td>
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<td></td>
<td>• Insulin therapy</td>
<td>• Diabetic neuropathy</td>
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<td></td>
<td>• Mean glycaemic values</td>
<td>• Peripheral vascular disease</td>
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<td></td>
<td>• FPG</td>
<td>• Diabetic eye complications</td>
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<tr>
<td></td>
<td>• PPG</td>
<td>• Nocturnal hypoglycemia</td>
</tr>
<tr>
<td></td>
<td>• HbA1c</td>
<td>• Patient HRQoL questionnaire</td>
</tr>
</tbody>
</table>

*Evaluated at first visit (only one study visit)
FPG, fasting plasma glucose; OAD, oral antidiabetic drug
PPG, postprandial plasma glucose
CV, cardiovascular; HRQoL, health-related quality of life

DiabCare Malaysia 2013 Action Plan Workshop

Healthcare professionals from all over Malaysia including doctors, research professionals, pharmacists, psychologists and diabetes nurses participated in the DiabCare Malaysia 2013 Action Plan Workshop. This event was made possible through the combined efforts of DiabCare Malaysia and the organizing partners Kementerian Kesihatan Malaysia, the Malaysian Endocrine & Metabolic Society, and Diabetes Malaysia.

The opening address for the event was conducted by Prof. Dr. Mafauzy Mohamed, Senior Consultant Endocrinologist at Universiti Sains Malaysia Health Campus in Kelantan, Malaysia. In his introduction to DiabCare Malaysia 2013, he discussed the diabetes landscape in Malaysia, history and overview of DiabCare Asia and DiabCare Malaysia, and the role of DiabCare in translating insights to action.

Following the introduction, Prof. Dr. Wan Mohamad Wan Bebakar, Senior Consultant Endocrinologist at Hospital Universiti Sains Malaysia, presented patient demographics, clinical history, measurements and investigation results from the DiabCare Malaysia 2013 study. Prof. Dr. Nor Azmi Kamaruddin, Head of the Diabetes and Endocrinology Unit at Universiti Kebangsaan Malaysia, then presented key results related to diabetes complications and disease management, and Dr. Zanariah Hussein, Head of the Endocrinology Unit at Hospital Putrajaya, presented results of psychosocial assessments of diabetes patients.
Following the presentations, workshop participants were assigned to one of 2 groups, to provide recommendations based on preliminary results from the DiabCare Malaysia 2013 study:

- Group 1: Improving clinical measurement and investigation
- Group 2: Complications prevention and management

During the grouping process, efforts were made to ensure a good balance of different professions and backgrounds within each group. The groups were further divided into 2 subgroups each, to allow for more focused recommendation efforts.

The workshop efforts were coordinated by Dr. G R Letchuman Ramanathan, Head of Department and Senior Consultant Physician and Endocrinologist in the Department of Medicine and also the Head of Clinical Research Centre in Hospital Taiping, Perak, Malaysia.

The goal of the workshop was to provide recommendations for improvements in identified key action areas (Figure 3), with the overall aim of contributing to enhancing the overall status of diabetes care and management in Malaysia.

**Figure 3: Key action areas**

Dr. Letchuman noted that the key to achieving diabetes treatment and provision goals through these action areas is collaboration and action with key stakeholders. As such, the recommendations provided by each team were categorized by level of stakeholder to be engaged for implementing the recommendations: national level (top management in government, namely Director General and Deputy Director General), state level (state directors and associates), and local level (essentially personnel on the ground, such as specialists/doctors, clinics, diabetes educators, dietitians).
Recommendations for National Level Implementation

The recommendations for national level stakeholders were based on the following key areas:

- Supportive environment
- Clinical management
- Investigation and monitoring tools
- Capacity building
- Self-management and patient education

To promote a **Supportive Environment**, participants recommended establishing a dedicated government authority to collaborate with food manufacturers to promote healthier eating habits. In particular, improved food labeling, including recognizable symbols to help consumers readily identify healthier choices and ensuring the presence of key nutritional information on all packaged foods, was highlighted as an effective tool to help people make informed food choices. The participants also highlighted that the Ministry of Health could partner with local councils to develop initiatives promoting active and healthy lifestyles; examples include construction of bicycle paths and covered walkways to encourage physical activity, and distribution of public service messages to raise awareness of the benefits of a healthy lifestyle. In addition, the Ministry of Health could implement a competition for restaurants to promote healthy eating habits, with incentives/rewards for restaurants which implement health initiatives. Related to this, the participants highlighted the need for an initiative to discourage unhealthy food purchases, particularly an implementation of limits on serving sizes, or restrictions on the promotion of excessively large serving sizes including offering an “upsise” of food and beverages at a cheaper price. In ensuring that healthy food options with appropriate serving sizes are widely available, particular attention would need to be paid to 24-hour eateries and food centers.

To enhance **Clinical Management** in the region, participants expressed the need for discount on insulin strips prescribed by doctors, achievable via a subsidy system or by enhancing local production capacity, to enable greater efficiency in screening for and monitoring diabetes symptoms. In addition, enhancing renal profile information for patients by measuring and recording glomerular filtration rate (GFR), urinary albumin-to-creatinine ratio (uACR), urinary protein-to-creatinine ratio (uPCR) and creatinine level for patients would assist in efficiently dealing with potential renal complications down the line. Participants also expressed a need for greater availability of generic drugs for lipid control, at a lower cost, to enable better and more affordable access for patients to their therapies. Effective communication between doctors and patients was also seen as imperative for effective personalized diabetes care, and research has identified various tools to improve patient-doctor communication, such as conversation maps, support groups (both led by peers and professionals), and diabetes dialogues. In addition, the contact and interaction time between healthcare professionals and patients could be enhanced through the use of social network tools, such as dedicated mobile messaging applications and patient support groups. Building upon these findings, the government should work with local research bodies to identify the most effective communication tools for the local context.

The participants suggested that national stakeholders should work with state and local bodies on **Investigation and Monitoring Tools**, such as improving point-of-care testing in rural areas, to enable efficient diagnosis and treatment of underserved segments of the population. In addition, there is a need for a nationwide initiative to improve the internet connectivity infrastructure, as this will facilitate reporting of burden of diseases including diabetes, and enhance the effectiveness of online diagnostic and education tools.
There has been a strong initiative for **Capacity Building** for diabetes care and management in Malaysia, but there is still more to be done. In addition to the physical burden, there is also a significant mental burden associated with diabetes and its complications. However, due to a historical stigma associated with mental health conditions, coupled with a lack of appreciation for the detrimental effects, the majority of diabetes patients do not receive adequate psychological care. Diabetes patients in Malaysia require increased access to psychology counseling, including hiring additional trained psychologists and improving ease-of-access to services to assess, monitor and address the psychological needs of patients. There is also a need for greater education and guidance on diet and lifestyle; increasing the number of dietitians and diabetes educators, particularly in primary care settings, would effectively address this shortcoming. On a broader level, following the global trend, there should be 24/7 online training tools available for healthcare professionals, so that they can have information and guidance on-hand whenever they need it.

From the patients’ point of view, national stakeholders can assist in enhancing **Self-management and Patient Education** by increasing patient awareness of tools such as Portal MyHEALTH, a comprehensive online health education platform. Participants also recommended the design of a media awareness campaign, focusing on a shared video project produced through collaboration of different groups nationwide. In terms of treatment education, it was suggested that the government initiate a campaign to increase awareness on the proper usage of NSAIDs and traditional medicines, as potential supplements but not alternatives to proper treatment of diabetes and its complications.

**Recommendations for State Level Implementation**

The recommendations for state level stakeholders (state directors and associates) were based on the following key areas:

- Clinical management
- Capacity building
- Self-management and patient education
- Investigation and monitoring tools

To improve the **Clinical Management** of diabetes in Malaysia, participants recommended that state level stakeholders engage in promotion of the family doctor personalized care concept, whereby families visit one specific doctor for all health issues, and this doctor will have full profiles and histories of the patients, including chronic diseases such as diabetes. The workshop also called upon state level stakeholders to ensure that there is a dedicated diabetes team (including a specialist, trained nurse, and diabetes counselor) within each clinic. Until that level of access is achieved, efforts should be made to ensure there are dedicated and trained personnel in centers statewide, to manage referral cases. In a similar vein, state health departments should work towards establishing seamless communication methods between primary, secondary and tertiary care providers, to ensure that the majority of time is spent on diabetes care, and not communication; examples of effective communications methods include buddy systems with direct links, and a more widespread and systematic adoption of instant communication methods such as online forums and teleconferencing. To assist this effective network of healthcare professionals, the development of a standardized checklist aid, capturing all clinical investigations of diabetes and its complications, would enable more efficient diabetes treatment and management.
State health departments can also engage in **Capacity Building** efforts by improving awareness of the benefits of regular testing for diabetes and its complications among health care professionals, by training paramedics for an advanced diploma in diabetes care, and by arranging for diabetes educator training programs.

To promote **Self-management and Patient Education**, state health departments can organize diabetes complications camps with family and peer involvement, with activities including sharing of experiences and simulation games. Active efforts may be made to improve participation in these camps, by identifying patients who fall below certain parameter thresholds, and making telephone calls to improve contact.

State health departments are expected to collaborate with national level stakeholders to improve the standard of **Investigation and Monitoring Tools** in the region, by assisting the implementation of point-of-care testing in rural areas, and participating in efforts to improved the status of internet connections statewide, to facilitate reporting and education of diabetes.

**Recommendations for Local Level Implementation**

For local-level stakeholders (essentially personnel on the ground, such as specialists/doctors, clinics, diabetes educators, dietitians), recommendations were based on the following key areas:

- Clinical management
- Self-management and patient education
- Supportive environment

Participants suggested that diabetes health care professionals interacting directly with patients can enhance the standard of **Clinical Management** by assisting the state health department's efforts to promote the family doctor personalized care concept. In addition, medical centers should encourage doctors to prepare procedures and investigations needed based on clinical profiles before they see the patient, to enable efficient provision of care. A method of providing patients personalized target sheets, and focusing follow-up visits on goal achievement, might improve adherence to treatment and help patients achieve treatment goals. Medical centers can organize group education clinics, to promote the concepts of self-care and adherence, and reduce the stigmas associated with diabetes disease and treatment. Participants of the workshop also pointed out that part of the burden of patient safety falls on healthcare professionals; in particular, the inappropriate dispensation of unregistered medicines and supplements should be diligently reported to the relevant authorities.

In addition to the group education clinics mentioned above, medical centers can also promote **Self-management and Patient Education** can assist the state-level administrators with organizing and running diabetes complications camps involving peers and family of diabetes patients, with a focus on learning about the disease and treatments and removing stigmas associated with diabetes. In addition to group education, the promotion of a “buddy” system, where diabetes patients can support one another directly, could assist diabetes patients with self-care and treatment adherence. To facilitate awareness of diabetes-related issues, all clinics should disseminate information on Diabetes Malaysia, a comprehensive diabetes education database. In the clinic setting, prior to seeing a specialist, patients can be provided with standardized forms to make a note of questions to ask their doctors, and any concerns they may have. On a broader level, diabetes healthcare professionals should ensure that diabetes education is patient-centered, and focused on engagement leading to self-care.
Medical centers can also assist in providing a **Supportive Environment** for people with diabetes, by ensuring the availability of healthy activities for patients during waiting times. Examples include playing educational videos, installing exercise bikes or mini-gyms in waiting rooms, or providing healthy snacks accompanied by information on the benefits of a healthy diet.

**Next Steps**

The DiabCare Action Plan Workshop was successful in bringing together a diverse group of diabetes professionals from all over Malaysia to help define the way forward for diabetes care and management in the region. The onus now falls on the relevant stakeholders in the federal, state and local environments to ensure that these plans are brought to action.

**References**


Dr. Zanariah Hussein, Head of Endocrinology, Hospital Putrajaya; Dr. Feisul Idzwan Mustapha, Senior Principal Assistant Director, Disease Control Division, Ministry of Health; Dr. GR Letchuman Ramanathan, Senior Consultant Physician and Endocrinologist, Hospital Taiping; Datuk Dr. Jeyaindran Tan Sri Sinnadurai, Deputy Director-General of Health (Medical), Ministry of Health; Prof. Dato’ Dr. Mafauzy Mohamed, Senior Consultant Endocrinologist, Hospital Universiti Sains Malaysia; Prof. Datuk Dr. Wan Mohamad Wan Bebakar, Senior Consultant Endocrinologist, Hospital Universiti Sains Malaysia; Noha Shawky, General Manager, Novo Nordisk Pharma Malaysia; Dr. Arvind Vilas Gadekar, Senior Medical Advisor, Novo Nordisk Pharma Malaysia.