

# World Diabetes Day

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Pharmacists' contributions to diabetes care



1912 · 2012  
100 YEARS OF  
ADVANCING  
PHARMACY  
WORLDWIDE

# INTRODUCTION PRESIDENT

Dear Reader,

On behalf of the International Pharmaceutical Federation (FIP) and the 2million-plus pharmacists and pharmaceutical scientists we represent, I am very pleased to present FIP's first report for World Diabetes Day, focusing on pharmacists' contributions to diabetes care.

As this reports demonstrates, and as is echoed within the foreward provided by my colleague Mr Jean Claude Mbanya, President of the International Diabetes Federation, pharmacists have an integral and invaluable role to play in the prevention and treatment of diabetes. As healthcare costs soar and healthcare workers across the disciplines become increasingly burdened – both on a global level – it is imperative that we all recognise how our unique skills and knowledge may contribute to our mutual goal of better health for all. This holds especially true for largely preventable and non-communicable diseases such as diabetes.

As FIP moves closer to it's Centennial Congress in October 2012, which will host a Ministers Summit on curbing rising healthcare costs through the responsible use of medicines, it is our goal as a Federation to create a greater awareness of our challenges so that we may jointly find solutions. As such, this reports is timely in both event and purpose.

We invite you as professionals to join our cause and as our patients to open the doors of communication for better prevention and control of diabetes – a step in the right direction to better health for all.

Sincerely,

Dr Michel Buchmann  
*FIP President*

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# I. FORWARD FROM THE PRESIDENT OF THE INTERNATIONAL DIABETES FEDERATION

“UNITING FOR DIABETES IN 2011”

Every year on November 14, World Diabetes Day unites the global diabetes community to create a powerful voice for diabetes awareness and advocacy, engaging individuals and communities to bring the diabetes epidemic into the public spotlight. The campaign is truly a global celebration that brings together millions of people in over 160 countries to raise awareness of diabetes and advocate for improved diabetes care and prevention.

2011 marks the third year of the five-year focus on “Diabetes education and prevention”. In 2010 the International Diabetes Federation urged everybody to Take control of Diabetes. Now. During 2011, we want everybody to get-up and Act on Diabetes. Now.

Exceptionally, World Diabetes Day in 2011 will take place just two months after the first ever UN High-Level Summit on Non-Communicable Diseases (NCDs) in New York in September. The International Diabetes Federation and our sister federations in the NCD Alliance were among the first to call for such a Summit, and in May 2010 the decision was taken unanimously by UN Member States from all corners of the world to convene this historic meeting.

The UN Summit on NCDs is only the second time the UN has held a global meeting at Heads of State and Government level on a health-related issue, the first being HIV/AIDS in 2001 which proved to be a turning point for that disease. Political leaders will be joined by global health experts, civil society and the private sector to discuss the scale of the problem and the solutions required to confront these four epidemics that threaten social and economic development as well as security. Political leaders will agree commitments at the UN Summit and present them in an Outcomes Document. We have to grasp this unrivalled political opportunity to broker international commitments and create a sustained global movement on diabetes and the related NCDs.

As the global voice for the millions of people with diabetes, the International Diabetes Federation has a de facto mandate to step up its response during this landmark year. To mark World

Diabetes Day in 2010 we launched a Call to Action on Diabetes to bring new inspiration to our fight.

This key advocacy publication outlines the case for investment in diabetes and provides the framework for action in the lead up to and after the UN Summit. With the support of our 220 Member Associations in 170 countries, this document has galvanised action around the world, influencing governments and decision-makers and reinforcing the 34 carefully considered recommendations outlined in the NCD Alliance’s Proposed Outcomes Document for the UN Summit.

We need everybody to be involved in World Diabetes Day 2011 to impress on governments and policy-makers the importance of political leadership, action and accountability on this disease that claims the lives of four million people each year. We have the evidence, many cost-effective solutions, and much of the know-how. And with the UN Summit, we have the political platform to pool our collective experience and strengths, and start a new conversation that will inspire a level of commitment sufficient to combat this global problem.

In many parts of the world 60-80% of people with diabetes are unaware that they have the disease. Pharmacists are front line service-providers with an important role to play in informing the public about diabetes, its warning signs and risk factors. That information can facilitate the early diagnosis that can delay or prevent complications such as blindness, renal failure, amputation and even premature death. Pharmacists are also essential to the safety of people with diabetes who will require medication for life. Pharmacists can help provide the nutritional and lifestyle information to enable people with diabetes to manage their condition safely and effectively.

We ask all pharmacists and their national associations through the International Pharmaceutical Federation, as the most extensive global pharmacy and pharmaceutical sciences network, to raise awareness of diabetes on the ground, and ensure that essential medicines, technology and care are available to all people with diabetes. Make 2011, with WDD and the UN Summit, the turning point for the diabetes epidemic that currently affects over 300 million people!

Jean Claude Mbanya  
IDF President

## II. INTRODUCTION

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The World Diabetes Day (WDD) is the primary global awareness campaign of the diabetes mellitus world and is held on November 14 of each year. It was introduced in 1991 by the International Diabetes Federation and the World Health Organization. World Diabetes Day is a campaign that features a new theme chosen by the International Diabetes Federation each year to address issues facing the global diabetes community. While the campaigns last the whole year, the day itself marks the birthday of Frederick Banting who, along with Charles Best, first conceived the idea which led to the discovery of insulin in 1922.

Each year, World Diabetes Day is centered on a theme related to diabetes. Topics covered have included diabetes and human rights, diabetes and lifestyle, diabetes and obesity, diabetes in the disadvantaged and the vulnerable, and diabetes in children and adolescents.

In order to enable pharmacists' associations to take a more prominent part in the World Diabetes Day, the International Pharmaceutical Federation (FIP) which is the global federation of national associations of pharmacists and pharmaceutical scientists has prepared this briefing document, which is an overview of the different activities for diabetes prevention and care pharmacists are involved in. These activities are supported by publications or summaries of activities run by pharmacists' organisations. Both are included at the end of this document, under References. Please note that the purpose of this document is not to be exhaustive on all activities run by pharmacists but to provide food for thoughts for future activities of national associations.

# III. A FOCUS ON DIABETES

## 1 | What is diabetes?

Diabetes can be defined as a chronic disease that occurs when the pancreas does not produce enough insulin, or when the body cannot effectively use the insulin it produces.<sup>1</sup> As a consequence of a long-term hyperglycemia, the risk of microvascular damage such as retinopathy, nephropathy and neuropathy as well as macrovascular complications such as ischemic heart disease, stroke and peripheral vascular disease is increased.<sup>2</sup> Generally, the major form of diabetes is categorized into type 1 (insulin deficient), type 2 (combined insulin resistance and relative insulin secretion deficiency), and gestational diabetes (hyperglycemia first recognized during pregnancy).<sup>1,3</sup> Diabetes is also classified as a non-communicable disease.<sup>4</sup>

Some major risk factors for diabetes include family history, obesity (excess body weight), physical inactivity, race or ethnicity, hypertension, high-density lipoprotein cholesterol and triglyceride level, history of gestational diabetes or delivery of a baby weighing > 4 kg and vascular disease.<sup>3</sup>

## 2 | Prevalence and Impact of Diabetes

### a) Current Status

It was estimated that 171 million people were diabetic worldwide in 2000, and 80% of these individuals lived in low and middle income countries, where most of them are middle-aged (45-64).<sup>5</sup> Diabetes is associated with reduced life expectancy, significant morbidity and diminished quality of life.<sup>2</sup>

Diabetes along with cardiovascular diseases, cancers and chronic respiratory disease are the world's biggest killers, causing an estimated 35 million deaths each year – 60% globally, with 80% being in low and middle income countries.<sup>4</sup> The excess global mortality due to diabetes in the year 2000 was estimated to be 2.9 million, which is equivalent to 5.2% of all deaths. It was accounted for 2-3% of deaths in the poorest countries and over 8% of deaths in the United States, Canada and the Middle East.<sup>6</sup>

This lack of disease management results in an annual cost per patient of \$13,200 US compared to the non-diabetic patient cost of \$2,500 US.<sup>7</sup> The expenses between diabetic patients also vary in different countries.<sup>8</sup> Most of diabetes expenditure is used to pay for inpatient services (60-85%) as the largest part the expense is incurred due to late diabetes complications (70%). In the United States alone, the economic burden of diabetes was approximately \$174 billion in 2007 (which increased from \$132 billion in 2002), including direct medical and treatment costs and indirect costs due to disability and mortality.<sup>9</sup> The diabetic patient loses 8.3 working days each year compared to 1.7 for the non-diabetic.<sup>7</sup>

Hyperglycemia in the hospital has also become an increasing health-care concern. The high levels of hyperglycemia have been linked to different reasons such as undiagnosed diabetes and uncontrolled diabetes. Hyperglycemia in hospitalized patients has been linked to many co-morbidities such as stroke, nosocomial bacteraemia, limb amputation and acute myocardial infarction.<sup>10</sup> Diabetes in hospitalized patients is often unreported and was found in a study to not be listed on medical records for 19-38% of patients who were hyperglycemic during their hospital stay who met the diagnostic criteria for diabetes.<sup>11-13</sup>

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### ***b) Future Trends***

Diabetes is projected to rise to 366 million by 2030 (vs. 171 million in 2000). This rise will be global and not limited to a specific region of the world.<sup>14</sup>

This future prevalence will result in an increase of 50% of diabetes death, especially if no urgent action is taken to address diabetes risk factors.<sup>5</sup> The greatest increase of prevalence will be seen in the African region (27%) and the Eastern Mediterranean region (25%) with highest absolute number of deaths occurring in the Western Pacific and South-East Asia regions.<sup>4</sup>

The global health expenditure on diabetes was expected to total at least 376 billion United States Dollars (USD) in 2010 and 490 billion USD in 2030. Diabetes is estimated to become an increasing economic burden on national health care systems worldwide therefore increased prevention efforts are needed in order to reduce the burden. This is especially important in developing countries as more resources are required to provide basic diabetes care.<sup>15</sup>

### **3 | Needs for better management of diabetes**

In order to better deal with the emerging burden of diabetes and other non communicable diseases, the World Health Organization adopted its “2008-2013 Action Plan for the Global Strategy for the Prevention and Control of Noncommunicable Diseases (NCD)”<sup>4</sup> which objectives are reproduced in Appendix 1 – Objectives of Action Plan WHO, page 13.

This Action Plan aimed to improve the prevention and control of non communicable diseases, including diabetes, through a comprehensive approach built on partnership and national policies.

The International Diabetes Federation stresses the fact that people with diabetes in communities around the world suffer inadequacies in care as many people still do not have access to medication, treatment and services required for optimal self management at prices that they can reasonably afford. To a large extent, problems arise from the low overall awareness of the condition.<sup>16</sup>

In addition to access to care, the IDF identified another area which needs to be addressed and integrated in prevention and care: diabetes education. However, “this is not the case in many countries around the world where diabetes education is at best in its infancy or non-existent”<sup>17</sup> Both the lack of access to quality medical management and diabetes education leads to poor clinical outcomes, reduced quality of life and high health related costs.<sup>17</sup>

## IV. PHARMACISTS ARE TO BE INTEGRATED IN DIABETES POLICY

### 1 | Pharmacists and global policies

Not only are low income nations experiencing health care staffing shortages, but the care needed by patients with diabetes doesn't fit well even in the high income nations model for primary care.<sup>18,19</sup> As diabetes represents a major threat to countries worldwide due to the predicted rise in cases by 2030, health care resources will be even further limited. As the demand for primary care will continue to increase, the burden placed on physicians will also increase, which in turn will lower the standard of care for patients.

As underlined in the **FIP statement of Policy – The role of pharmacists in the prevention and treatment of chronic disease**, pharmacists are in a ideal position to relieve the increasing burden placed on health systems due to their accessibility, knowledge, education level, ability to provide direct patient care and competency level.<sup>7</sup> Pharmacists are an essential part of the healthcare team, and any health programme should recognize that:

*“Pharmacists are the most accessible health care professional in a community. As such, they are in a position to provide early detection of chronic diseases and to identify unhealthy life styles. They can help patients reduce risk factors by prevention counselling when appropriate, e.g., weight and diet management, exercise and smoking. Pharmacists are a community based knowledge resource that can help people understand the dangers of chronic disease and the importance of prevention. Pharmacists work with other members of the healthcare team and can refer patients’ chronic disease related issues to them. Additionally, many pharmacists receive further training in diabetes education highlighted below, and in providing physical assessments”<sup>7</sup>*

Moreover, their role in adherence to long-term treatments (such as the ones for Diabetes) was highlighted in the **FIP Statement of Professional Standards on The Role of the Pharmacist in Encouraging Adherence to Long-term Treatments**.<sup>20</sup> As developed in the next chapter, pharmacists through the services they offer, can improve adherence to treatment (and thus patients’ outcomes) as these services target some causes of non-adherence: problems with side effects, lack of information about their condition and the importance of treatment, lack of understanding of the seriousness of the illness.

### 2 | Policy at regional and national levels

In order to help pharmacists to play their roles in diabetes care, national associations of pharmacists have developed strategies to improve care, such as the Canadian Pharmacists Association (CPhA) with its national Diabetes Strategy for Pharmacists. In line with this strategy, a set of diabetes practice guidelines was developed based on the Canadian Diabetes Association 2008 Clinical Guidelines which contained a summary or the recommendations for pharmacists in the management and follow-up of patients with this chronic disease. In addition to this, a continuing education course online and via live workshop provides pharmacists with comprehensive tools and information to help patients manage their diabetes (as highlighted in activity 1; under “VII References – 2. Examples of activities organized by pharmacists associations”). This is in addition to the initial education received after completing a degree(s) in pharmacy.

Similarly, national associations in Australia, Finland, Hungary, Portugal or Spain have developed comprehensive programmes to provide pharmaceutical care to diabetic patients (see activities 2, 3, 4, 5, 6 and 7), which include guidelines and training activities for pharmacists.

In Europe, PharmaDiaß (a protocol and guidelines to improved quality in diabetes care for pharmacists) was developed by Europharm Forum in 2001.<sup>21</sup>

### 3 | Interest and involvement of pharmacists at local level

Moreover, not only are pharmacists suitable to contribute to diabetes care but a large interest in diabetes management exists among them. According to a survey run for the FIP, diabetes was rated the highest in the interest of pharmacists in terms of health promotion and management programs.<sup>15</sup> Thus, pharmacists take on the task of continuing education through specialized programs already been developed to strengthen their competencies in diabetes as mentioned above. They also run a wide variety of activities described in the next chapter, supported by the services provided by their associations.

Some business models for pharmacists’ interventions have already been tested and were successful such as the one detailed in *Appendix 2 – Example of a Business Model of Pharmacist’s Intervention*.

# V. THE CONTRIBUTION OF PHARMACISTS IN DIABETES

Pharmacists are involved in diabetes care and prevention in three different ways: health promotion, ensuring optimal treatment and interprofessional collaboration.

## 1 | Health Promotion

Health promotion and primary prevention are critical in avoiding health complications and accumulating unnecessary costs for both the patient and the government. People suffering from diabetes and those at risk of diabetes can benefit from the personal relationship they develop with their community pharmacist.<sup>22</sup> Community pharmacies are seen as one of the first lines of defense for diabetes prevention and management as it is the first point of care for many people.<sup>22</sup> In addition to this, pharmacists are rated among the highest most trusted health professionals.<sup>23</sup>

This chapter will focus on activities prior to the diagnosis made by a physician, i.e. on screening and case finding aiming at detecting patients at risk of undiagnosed diabetes or uncontrolled diabetes as well as promoting educating patients on risks of the disease and empowering them to take control of their own health and to prevent diabetes.

### a) Screening and case finding at risk populations:

Pharmacists are in a good position to screen for patients at risks for diabetes. This can be done through regional or national campaigns as already developed in many countries worldwide including Austria (activity 8), Canada (activity 9), France (activities 10 and 11), the Netherlands (activity 12) and Spain (activities 13 and 14). Usually these campaigns include guidelines for pharmacists (or procedures) and education for pharmacists. These campaigns aim to detect patients at risk for diabetes through elevated risk factors (such as weight, blood pressure, abdominal size, cholesterol, blood sugar, family history of diabetes, etc.). These risks factors can be collected from the patient file, a questionnaire (see activity 11) and/or free-of-charge blood sugar measuring (see activities 12 and 13).

These screening campaigns can be opened to everyone and promoted to the general public through poster displays in the pharmacy to attract the patient's attention (see activities 9, 10, 12 and 15), press advertisement (see activity 12), but it can also rely on case findings of patients at risk for diabetes (e.g.

patients over 40 years of age, overweight, given birth to a child over 4 kg, etc.) (see activity 10).

Further to the analysis of the risks factors, patients can receive a score card with their personal results (see activity 12) and for those at risk of being diabetic, they are referred to their physician (see activity 11).

For patients who are unlikely to be diabetic, pharmacists can provide them with information on how to prevent diabetes as further described in the next chapter.

Screening and case finding campaigns have resulted in large number of patients being evaluated. For example, a campaign in Vienna and lower Austria resulted in 55,000 patients being screened over a period of two months (see activity 8). In another screening campaign and active recruitment of 'at risk' patients that took place in France through the Conseil Régional des Pharmaciens de Bourgogne (Burgundy Regional Council of Pharmacists) along with the Local Health Insurance Committee and Burgundy Association of Diabetic Patients, resulted in 10,000 individuals being screened (see activity 10).

### b) Education on diabetes and advocating lifestyle changes to the general population and patients at risk for diabetes

As part of a screening campaign or as a stand-alone activity, pharmacists can educate the general public on diabetes, the risks factors associated with type-2 diabetes and the importance of early detection (see activities 13, 14, 16 and 17). Similarly, pharmacists can also educate parents on the possible signs of diabetes in their children which requires medical attention for further investigation (activity 17).

This education can be made through informative lecture or conferences on diabetes (see activity 14), or through a more traditional campaigns consisting of posters and leaflets disseminated in the community pharmacy and websites. For instance, in 2004, the Consejo de Colegios Farmacéuticos de Cataluña and the Asociación de Diabéticos de Cataluña in Spain organized a campaign on the prevention of obesity, as a risk factor for developing type-2 diabetes. The 3,000 community pharmacies from the region took part in this campaign through educational sessions for the general public to educate them about obesity, its risks factors and how to reduce them and through displaying a poster campaign (see activity 16).

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This type of activities also aims to advocate for lifestyle change which is important for patients at risk for diabetes, as sugar is a major dietary contributor for the development of type 2 diabetes along with obesity. Advocating lifestyle changes encompasses a wide variety of components from diet and nutrition to increasing exercise. Pharmacists are able to play a significant role in treatment outcomes when advising on life-style and dietary improvements<sup>24</sup> that can prevent a chronic disease.<sup>7</sup>

## 2 | Treatment

Once the diagnosis is made, the patient's physician initiates a set of interventions which usually includes lifestyle change and medication. Diabetic treatment can be complicated and critical. It can be difficult for diabetic patients to remain at target. For example, currently, over half of the people in the USA with diabetes are not achieving control of their disease.<sup>7</sup>

Pharmacists can play a major role in improving patients' outcomes through several types of activities, as part of a medication therapy management. (see activities 2, 3, 4, 5, 6 and 7).

### a) Assess patient needs and identify drug problems

Pharmacist assessment occurs at all stages of patient treatment in order to address concerns and the needs of patients. Such assessment is the foundation for ensuring effective management of diabetes and appropriate monitoring. This assessment may include:

- The outcomes of the treatment based on the goals set for the therapy: pharmacists are able to measure glycemia parameters and other values (HbA1C, blood glucose, blood pressure, weight, etc.) (see activity 19). Pharmacists can also order and evaluate pertinent laboratory tests where available and if appropriate.<sup>25</sup> Pharmacists are also able to evaluate patient responses and improvement in order to optimize drug treatment.<sup>25</sup>
- Adherence to the treatment: for instance through the patient's file (number of refills of prescription) or through their discussions with patients
- Experiencing adverse effects: through their discussions with patients, pharmacists can notice these adverse effects and provide solutions
- Difficulties in the administration of medicines
- Symptoms (e.g. foot problems) reported by patients

Pharmacist can also assess the immunization status of diabetic patients as they are often part of priority groups for influenza immunization (see activity 20).

Once these needs are identified, pharmacists are able to offer solutions to patients described in the next chapter.

### b) Managing patient medication therapy

Pharmacists' role in medication management and making appropriate recommendations is especially important for patients with new or complicated medication regimens. This also includes the elderly and patients transitioning from hospital care back to community care. Pharmacists play this important role in both hospital and community settings.

#### **(I) Developing care plan**

Due to their knowledge in pharmacology, drug interactions, best evidence based medicines and up-to-date information in optimal drug therapy, pharmacists can recommend appropriate therapies and establish therapeutic goals in conjunction with individual factors, including the risk of hypoglycemia, based on the identified needs of the patients.<sup>24,25,26</sup>

Indeed, during the initiation of change of a drug therapy, pharmacists can diminish the risk of hypoglycemia in hospitalized patients<sup>25</sup> or in seniors<sup>27</sup> through appropriate dose introduction, blood glucose testing schedules for instance.<sup>26</sup> Pharmacists reduce complications and may prevent drug adverse effects and duplicate therapies.<sup>25</sup>

Patients are able to reach therapeutic goals through pharmacists' recommendation for initiating, modifying, discontinuing drug therapy, recommending alternatives and making dose changes.<sup>24,25</sup> Pharmacists can tailor treatment regimens using newer therapies to overcome some of the limitations of traditional therapies.<sup>25</sup>

For example, pharmacists consult the medical team regarding hospitalized patients with diabetes who are not achieving long-term out-patient glucose targets on their current therapy regimen.<sup>30</sup> Following this, they can provide recommendations to adjust the dose for the patient's discharge regimen and further educate the healthcare team with evidence to enable understanding of the pharmacotherapy choice recommended.<sup>30</sup>

Pharmacists also provide recommendations to reduce patient's spending on medications through generic options.

DESCRIPTION	PRIMARY OUTCOMES	SOURCE
Protocol implemented by the pharmacy clinical coordinator and the clinical nurse specialist of the SICU with pharmacist involvement in insulin preparation, standardization and resolution of medication conflicts	Target BG levels (80-130 mg/dL) reached with minimal hypoglycemia	Dilkhush D, Lannigan J, Pedroff T, Riddle A, Tittle M. Insulin infusion protocol for critical care units. <i>Am J Health Syst Pharm.</i> 2005 Nov 1;62(21):2260-4
Insulin protocols implemented in the ICU of 2 community-based hospitals and 1 academic hospital with the support of a dedicated pharmacist working within the ICU	Successful implementation and acceptance of insulin protocols by nurses and physicians	Rea RS, Donihi AC, Bobeck M, Herout P, McKaveney TP, Kane-Gill SL, Korytkowski MT. Implementing an intravenous insulin infusion protocol in the intensive care unit. <i>Am J Health Syst Pharm.</i> 2007 Feb 15;64(4):385-95.
Multi-disciplinary team-driven insulin protocol in the ICU with a pharmacist responsible for staff education and increased insulin infusion preparation	Increased overall insulin usage and more patients at target BG levels (80-110 mg/dL)	Reynolds LR, Cook AM, Lewis DA, Colliver MC, Legg SS, Barnes NG, Conigliaro J, Lofgren RP. An institutional process to improve inpatient glycemic control. <i>Qual Manag Health Care.</i> 2007 Jul-Sep;16(3):239-49.
Pharmacist-designed and nurse-driven insulin infusion protocol for critically ill patients	Target BG levels (90-150 mg/dL) reached more rapidly with nurse/pharmacist- than physician driven protocols	Scheuren L, Baetz B, Cawley MJ, Fitzpatrick R, Cachecho R. Pharmacist designed and nursing-driven insulin infusion protocol to achieve and maintain glycemic control in critical care patients. <i>J Trauma Nurs.</i> 2006 Jul-Sep;13(3):140-5.
<i>SICU: Surgical Intensive Care Unit</i>	<i>ICU: Intensive Care Unit</i>	<i>BG: Blood Glucose</i>

Table 1 – Protocols relevant to pharmacist-driven management of in-patient diabetes and hyperglycaemia – Adapted from Szumita PM<sup>30</sup>

## (II) Implementing care plan

Once the solutions to problems have been determined, pharmacists can either suggest them to the prescribers or make adjustment within a collaborative practice approach, in order to optimize drug treatment (e.g. to ensure treatment efficacy or prevent complications).<sup>25</sup>

Pharmacists have also been involved in developing protocols for implementing insulin therapy in the hospital settings (mostly in the critical care area)<sup>30</sup> as well as standardization of the insulin infusion preparation.<sup>25</sup> Many studies have evaluated pharmacist driven management in protocol development both alone and within an inter-professional environment. Table 1, above, lists the description of some examples of relevant protocols developed with the use of a pharmacist and the primary outcomes. The successful implementation of many protocols resulted in attaining target blood glucose levels more rapidly with minimal hypoglycaemia.<sup>30</sup>

### c) Educating patients on their medications and their disease

During their dispensing and based on the steps described earlier, pharmacists provide personalized education to patients whatever the settings are: hospital, community pharmacies or specific diabetes clinics.

This education aims to empower patients to take responsibility of their own health and requires reiteration and one-on-one patient contact.<sup>30</sup>

To support informed decision making, self-care behaviors, problem solving and active collaboration between the patient and the health care team, pharmacists use national standards such as DSME/T (Diabetes Self-Management Education and Training). Such an approach enables them to educate patients and ensure all criteria have been met when providing education on diabetes, resulting in improved clinical outcomes, health status and quality of life.<sup>25</sup>

In addition to glucose monitoring (how to interpret blood glucose levels) and prevention of hypoglycemia, pharmacist-led diabetes education includes nutrition and exercise, proper foot and eye care, and medication management (appropriate insulin-injection technique, how to use a device for injecting insulin, how to dose-titrate insulin). Pharmacists facilitating educational training have shown clinical improvements in patient outcomes such reductions in A1C.<sup>30,25</sup>

To support these educational activities, some national pharmacists associations like in Finland developed specific tools such as short training movies on how to administer insulin as part of their national diabetes programme (see activity 3).

Not only does patient education for diabetic patients focuses on medicines, but also on lifestyle changes and general knowledge on the disease itself.

Health promotion campaigns have also been used to not only raise awareness about diabetes, but to educate diabetic patients about the disease. In Ireland, posters were used in order to help patients improve their knowledge on drugs, increase adherence and to improve use of medicines (see activity 14). Another example of a campaign taking place in Spain, raised awareness of the diabetic foot and highlighted the positive impact of medication adherence and physical activity specifically targeting diabetic patients. This was primarily relayed through posters and patient leaflets (see activity 21). In other countries, for instance in Denmark, pharmacists offered free smoking cessation courses to all diabetics throughout a specific month (see activity 22).

Medication adherence is critical during diabetic treatment to prevent complications such as heart disease and stroke, high blood pressure, blindness, kidney disease, neuropathy and amputation.<sup>25</sup> However, providing knowledge to diabetic patients should also be completed by additional approaches, as poor adherence is not always related to a lack of knowledge.

Pharmacists have used a patient-centered, evidence-based approach to behaviour-change counseling called “motivational interviewing.” Motivational interviewing focuses on empathy and reflective listening to decrease patient resistance in order to develop a stronger relationship between patients and their pharmacist. In a specific study, pharmacists in this “coaching” role, were assigned to a patient and the two met regularly one-on-one in order to collaboratively manage the patient’s diabetes. This involved monitoring the patients’ progress toward clinical and personal goals and where necessary, collaboratively developing interventions. The pharmacist recommends adjustments to treatment plans to progressively reach those goals. These studies have shown positive outcomes in A1C levels, lipid levels, blood pressure and total medical costs.<sup>25</sup>

It was also noted that the presence of a pharmacist tends to improve patients’ adherence to medications.<sup>24</sup> Pharmacists also help ensure medication adherence through tools like guide books on diabetic treatment for patients as the ones developed in Canada and Denmark (see activities 1 and 22).

#### d) Safe disposal of needles

Pharmacists offer a solution to safe disposal of needles and syringes which pose a risk to health (due to increase risk of the transmission of blood borne diseases), safety (due to needle stick injuries) and the environment. In many countries, patients are able to receive biohazard needle containers from community pharmacies. Pharmacists then take back the full containers to ensure appropriate disposal.<sup>28</sup>

### 3 | Interprofessional Collaboration

Pharmacist-led management of patients with type 2 diabetes in different settings requires high levels of collaboration and coordination.<sup>25</sup> Coordination between the hospital pharmacist and the health care team consisting of physicians, diabetes educators, nurses, nutritionist, etc., is critical in ensuring patient education and improving diabetes care in the hospital and after discharge.<sup>30</sup> Interprofessional collaboration is noted throughout various pharmacist activities from health promotion to treatment. The need for interprofessional collaboration was stressed in the **2010 FIP Statement on Collaborative Practice**.<sup>29</sup>

#### a) Coordinated multidisciplinary approach

Studies have indicated that adding pharmacists to the primary care team for joint care management have increased medical benefits. Pharmacists are able to take responsibility to ensure appropriate treatment intervention through monitoring the effects of drug therapy, evaluating lab values as well as recommending alternatives to resolve or prevent drug related problems in collaboration with the physician and other members of the healthcare team.<sup>30,24</sup> This can be done through pharmacist’s participation in multidisciplinary rounds within a hospital setting.<sup>30</sup>

The value of a multi-disciplinary team to implement hospital glycaemic management strategies has also been demonstrated in several different institutions.<sup>30</sup> During protocol development and implementation, a coordinated multidisciplinary approach was taken. Protocols were created by an inter-disciplinary group which included doctors, clinical pharmacist, nursing director and endocrinologist.<sup>30</sup> In order to educate the rest of the team regarding the new protocols, the pharmacy clinical coordinator and the clinical nurse specialist provided an internal education program 2 weeks before implementation of new protocol.<sup>30</sup>

Pharmacists have also been able to provide continuous education of nurses, including a 24 hour call support.<sup>30</sup>

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Interprofessional collaboration has also occurred during diabetes awareness campaigns held by pharmacists. As part of the Diabetes programme for community pharmacy held in Finland, one of the main goals was to establish and strengthen collaboration with other local health care professionals and relevant associations (see activity 3).

***b) Referral to other health professionals***

Pharmacists can play a role in helping to triage patients to appropriate health professionals. For example, patients screened within a pharmacy setting that were revealed to have potential health risks were referred to a medical doctor (see activity 8). In a specific example, screening campaign that took place in Burgundy, France by the Ordre des pharmaciens was specific for the population at risk for diabetes (pre-diabetics) in community pharmacies. The patients were required to fill out a questionnaire which identified risk factors such as being overweight – BMI > 28, having high blood pressure, blood lipid concentration and history of diabetes in the family. If they were deemed at risk for diabetes, they were referred to their doctor by the pharmacist (see activity 11).

***c) Referral from other health professionals***

Patients who benefit most from referral from physicians to pharmacists for education/coaching and for disease state management services are those with highly elevated A1C, a history of poor adherence to drug therapy, or multiple comorbidities.<sup>25</sup> Thus, the pharmacist can then take an active role in ensuring optimal therapy management and prevention of future complications through referral from other health professionals.

## VI. APPENDICES

### 1 | Appendix 1 – Objectives of WHO 2008-2013 Action Plan for the Global Strategy for the Prevention and Control of Non-Communicable Diseases

- I) To raise the priority accorded to noncommunicable disease in development work at global and national levels, and to integrate prevention and control of such diseases into policies across all government departments
- II) To establish and strengthen national policies and plans for the prevention and control of noncommunicable diseases
- III) To promote interventions to reduce the main shared modifiable risk factors for noncommunicable diseases: tobacco use, unhealthy diets, physical inactivity and harmful use of alcohol
- IV) To promote research for the prevention and control of noncommunicable diseases
- V) To promote partnerships for the prevention and control of noncommunicable diseases
- VI) To monitor noncommunicable diseases and their determinants and evaluate progress at the national, regional and global levels

### 2 | Appendix 2 – Example of a Business Model of Pharmacist’s Intervention in Diabetes Care

A major limitation for further diabetes programs established in pharmacies is funding for pharmacists and reimbursement models.<sup>25</sup> Different funding models have been demonstrated in trials that have indicated positive results.

A business model in the United States where hospital pharmacists and pharmacy technicians provided medication therapy management (MTM), wellness and disease management services for company employees demonstrated successful outcomes in terms of patient satisfaction, cost savings, and clinical benefits. Depending on patient conditions, the service could result in ongoing care if deemed necessary after the initial session.

The initial service included a medication history, point-of-care testing for serum lipids and glucose, body composition analysis and completion of a health risk assessment. The pharmacist then reviews the results and risk factors, provides health education, discusses opportunities for cost savings and documents all activities on a medication action plan. Findings are then summarized for employers after the initial wellness screening and at six month intervals for ongoing patients requiring condition care. Patients are then able to discuss drug therapy and cost saving recommendations to their physician.

After the initial wellness session, patients indicated high satisfaction. The pharmacy team was directly reimbursed by the company benefit department. The medications changes resulted in cost savings of \$253 per patient per year and total cost savings for companies in the first year of the program to be \$1011 per patient. Thus, a business model in which pharmacists provide medication management and continuous care services has demonstrated to be successful and has potential to provide increased patient satisfaction, clinical benefits, cost savings and facilitate pharmacist activities in providing increased patient care.

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## 2 | Examples of activities organized by the pharmacists associations

These summaries have been developed by the International Pharmaceutical Federation, based on a set of references (publications, materials of the activities, newspaper articles...). The list of references for a specific activity is available upon request.

### 1 – *Diabetes Strategy for Pharmacists (Canada, 2009)*



The Canadian Pharmacists Association (CPhA) developed the Diabetes Strategy for Pharmacists to raise the level of awareness and knowledge of new diabetes care guidelines, and provide education and tools to enable pharmacists to raise the level of care they provide to persons with diabetes, resulting in benefits for pharmacists and Canadians affected by this chronic disease.

As part of the Strategy, the Canadian Pharmacists Journal (CPJ) developed the first set of diabetes practice guidelines specifically for pharmacists, based on the Canadian Diabetes Association 2008 Clinical Guidelines for the Prevention and Management of Diabetes in Canada. This CPJ supplement, titled Diabetes, was distributed with the March/April 2009 issue of the journal and contains a summary of recommendations for pharmacists in the management and follow-up of patients with this chronic disease.

To accompany these guidelines, CPhA has developed “The ‘how to’ of managing diabetes... A prescription for pharmacists”, a continuing education course that provides pharmacists with comprehensive tools and information to help patients better manage their diabetes. The course is available in two formats:

- Online at [www.diabetespharmacists.ca](http://www.diabetespharmacists.ca), in 10 separate modules worth 12 CEUs in total
- Via live workshops, in three separate modules worth three CEUs each.

To further promote the Strategy, CPhA has recruited 10 provincial Diabetes Pharmacist Champions to act as spokespersons, leaders and facilitators of the live workshops in their regions. A website was also created to promote this Strategy: [www.diabetespharmacists.ca](http://www.diabetespharmacists.ca)



### 2 – Diabetes Medication Assistance Service – Pilot (Australia, 2007)

This service involves an ongoing cycle of assessment, management and review for patients with type 2 diabetes and aims to assist diabetes patients manage their condition and help maximise the health

benefit they get from their medicines.

Patients with type 2 diabetes have scheduled in-pharmacy appointments with specially trained pharmacists to get professional help in managing their diabetes in line with their diabetes management plan.

To be eligible for this subsidized service, the patient must have established type 2 diabetes (with a confirmed HbA<sub>1c</sub> ≥ 7%) and be able to provide their medication history for at least the past 3 months to ensure the pharmacist can generate an accurate medicine history.

The subsidized service involves 5 consultations with the pharmacist over a 6 month period during which the pharmacist:

- assist with blood glucose meter management;
- assist with self-monitoring of blood glucose;
- measure blood pressure and weight to assist in lifestyle management;
- review and monitor the patient's medicine regimen and any medicine related problems;
- assist with setting and achieving goals;
- support any GP Management Plan or Team Care Arrangement; and
- facilitate communication between patient, GP and other health service providers to improve continuity of care.

The pharmacist also liaise with GP to keep them updated on your progress. Previous DMAS trials have demonstrated significant improvement in glycemia control and other health outcomes for participating patients.



### 3 – Diabetes programme in community pharmacies (Finland, 2001-)

In 2000, a national plan for diabetes care was adopted and coordinated by the Finnish Diabetes Association.

In collaboration with the Finnish Diabetes Association, the Association of Finnish Pharmacies (AFP) developed in 2001 a Diabetes programme for community pharmacy, which goal is to promote successful diabetes care and prevention through an increased collaboration between pharmacies and other healthcare professionals.

Diabetes contact persons, who are nominated in the pharmacies, are responsible for the implementation of the Pharmacy Programme on a local level.

The activities run by the community pharmacy include:

- support for lifestyle changes to reduce risk factors associated with type 2-diabetes
- identification of patients at risk of developing type 2 diabetes and support for the screening of high glucose blood
- screening for potential drug interactions
- ensure correct use of diabetes medicines and adherence to treatment
- support self-care of diabetic patients
- establish and strengthen collaboration with other local healthcare professionals and relevant associations (e.g. diabetic patients associations)

As part of the Diabetes program, the AFP prepared in 2005 training materials for pharmacies about the treatment of foot problems associated with diabetes and together with the Diabetes Center, initiated a programme on insulin administration (which is a collection of short training films to support customer service in pharmacies).

At the end of 2006, there were 635 pharmacy outlets participating in the Diabetes programme (with 674 contact people).



#### 4 – Pharmacists’ Diabetes Prevention Program (Hungary, 2005)

The Hungarian Private Pharmacist’s Association in cooperation with universities, endocrinologists and other supporting partners, established the Pharmacists’ Diabetes Prevention Program (PDPP). This is governed and controlled by the Diabetes Pharmacist Prevention Committee (DPPC). The National Public Health and Medical Officer Service (NPHMOS) gave permission for the pharmacists to run this project in their pharmacies. The PDPP program started on the World Diabetes Day in 2005. This was initiated within 52 pharmacies along with the creation of the Hungarian diabetes care guidelines for pharmacists. In the middle of 2007, almost 450 pharmacies participated which totalled more than 20% of the Hungarian community pharmacies.

The program required patients to fill an evaluation form (DiabeTest) determining their risk factors which was followed by a pharmacist assessment. Based on their answers, they were classified into 3 categories:

- Healthy patient
- Patients exposed to risks factors (pharmacists then explained the importance testing yearly blood-glucose levels)
- Patients suspected of being diabetic (pharmacists directed the patients to general practitioners irrespective of the result of the blood-glucose test)

Patients that fell into categories 2 or 3 were offered a glucose-test. The results of this test were sent to the patient’s general practitioner with a referral letter. In total, 22,398 pharmacist-patient interventions were processed.



#### 5 – Metabolic syndrome Pharmaceutical Care (Hungary, 2009)

The Hungarian National Committee of Pharmaceutical Care, the Hungarian Society for Pharmaceutical Sciences, the Hungarian Association of Private Pharmacists and the Hungarian Chamber of Pharmacists have developed a metabolic syndrome (MS) pharmaceutical care program. This is a paid program and consists of 3 levels of interventions:

1. Health promotion: in order to prevent MS to develop
2. Early diagnosis of MS
3. Treatment and monitoring of MS

A protocol for this programme has been developed based on several international protocols. Pharmacist tools enabling pharmacists to refer patients to physicians were also developed, along with guidelines for pharmacist screening at the pharmacy, and the documentation of screening results and follow-up. In 2009, 606 pharmacies took part in this program approximating 30% of the Hungarian retail pharmacies.

#### 6 – Pharmaceutical Care Programme for Diabetic Patients (Portugal, 2001)

The Pharmaceutical care programme for diabetic patients (or Pharmacy-based Diabetes Management Program) was initiated in 2001 as a pilot study and then extended nationally in 2003. Through an agreement with the Ministry of Health in 2003, a co-payment was organized: 75% of the cost will be covered by the national health insurance, while the remaining 25% will be paid directly by the patient. Such an agreement was renewed in 2008.

The target audience for this programme is diabetic patients taking at least one medication for diabetes, preferably Type 2, and blood glucose levels consistently above the therapeutic goals.

The intervention is based on scheduled visits to the pharmacy of the patient with variable intervals (depending on state of health of the patient), a follow-up being done by the pharmacist, in conjunction with the physician and the patient himself, according to the international SOAP method at each visit :

- Collection of subjective and objective patient’s data, including the therapeutic profile and the measurement of parameters (blood pressure, glucose, etc.) in accordance with the objectives to be achieved;

- Assessment and identification of Drug Related Problems (DRPs) and other health problems;
- Preparation of a pharmaceutical care plan, reporting to the doctor for possible revision or termination of therapy through pharmacy counseling (pharmacological and non pharmacological) and teaching and assessment of the correct technique for determination of glucose in individuals who are self-monitoring;
- Monitoring (repeat process) on subsequent visits.

Pharmacists who can provide this service completed a training of 35h on diabetes and pharmacotherapy, monitoring methodology, communication with the patient and doctor.

On 19 March 2010, 461 community pharmacies took part in this programme and helped 2,136 patients to manage their diabetes.

An analysis during the pilot phase showed that 72 patients (representing at that time 21.1% of all patients benefiting from the programme) have been able to control their diabetes 3 months after their inclusion in the programme (and this achievement was maintained).

### 7 – Strategic Plan for pharmaceutical care to diabetic patients (Spain, 2010)

As part of the Strategic Plan for the Development of Pharmaceutical Care in Spain, a programme was developed focusing on the dispensing of oral hypoglycemic agents and the follow-up of polymedicated diabetic patients. It was run from April until September 2010 and 4500 community pharmacists participated.

The pharmacists were provided with training materials and a protocol for pharmaceutical care, which requires pharmacists to register the clinical parameters.

Such activities have led to a substantial amount of detection of potential drug-related problems (in 53% of the cases), mainly on interactions and potential side effects.

### 8 – Health Checks Campaign; 10 minutes for my health (Austria, 2006)

A major screening campaign took place in Vienna and Lower Austria in April and May 2006. This screening campaign aimed to detect elevated health risk factors: pharmacies measured weight, blood pressure, abdominal size, cholesterol and blood sugar in an easy, anonymous and free way.

55,000 patients took part in this campaign (i.e. 1.6 % of the population of Vienna and Lower Austria) by the 500 community pharmacies of these two regions.

For more than half of the patients, the health values were revealing a potential health risk. Pharmacists referred these “at risk” patients (55%, i.e. 29,700) to a medical doctor.

More than one third of the surveyed people in Vienna and Lower Austria suffers from hypertension, half of them (i.e. 1/6) had up to the time of measurement no idea of their hypertension.

Out of the 8,800 people tested for diabetes, half of them were not aware of their risk.

This campaign was also a good way to draw the health profile of a population.



### 9 – National Diabetes Awareness month (Canada, 2009)

During November 2009, CPhA organized a communication campaign to raise awareness amongst patients about potential benefits they can further obtain from their pharmacists. This communication campaign consisted in posters displayed in community pharmacies across the country.

This communication took place during the National Diabetes Awareness month and was in continuation with the Diabetes Strategy for Pharmacists developed by CPhA.

### 10 – Diabetes screening in community pharmacies in Burgundy (France, 2002)

In November 2002, the Conseil régional des pharmaciens de Bourgogne partnered with the local Health Insurance Committee (URCAM) and the Burgundy Association of Diabetic patients to run a screening campaign amongst the population to detect diabetic patients (or patients at risk to be diabetic).

This screening campaign consisted of:

- a communication campaign through a poster displayed in community pharmacy windows inviting patients to proceed to a free screening test
- free testing through a testing kit provided free-of-charge by the Conseil régional des pharmaciens de Bourgogne which includes needles, test strips and machine to test glycemia.

To prepare pharmacists for this activity, continuing education sessions were organized before the campaign.

The aim of the campaign was to test 10,000 individuals through community pharmacies, with a focus on the following populations:

- patients over 40 who were overweight, with family history of diabetes or with hypertension;
- patients who had given birth to a child over 4kg.

After each screening, pharmacists gave a document to the patient and completed an anonymous form to be used for the evaluation of the campaign.

The campaign was also promoted through the local Health insurance company through a mailing in October 2002.

In addition to the testing through community pharmacies, screening was also organized by patients' association in 122 locations in Burgundy.

10,117 individuals were tested during this campaign through community pharmacies.

#### 11 – Diabetes screening and advice programme (France, 2005-2007)

From October 2005 to May 2007, a diabetes program was run in Burgundy through a partnership between the Conseil Régional de l'Ordre des pharmaciens and the local Health Insurance (URCAM). This program aims to identify patients at risk to be (pre-) diabetic.

The screening was made through a questionnaire to be filled with the patient aiming at identifying risks factors:

- Overweight (BMI >28)
- Hypertension
- Blood lipid concentration
- History of diabetes in the family.

Patients over 45 years, with one risk factor or under 45 with 2 risks factors were referred to their physician.

One third of the community pharmacies in Burgundy took part in this campaign (216 out of 648). 7% of the tests identified a diabetes presumption and 10% of a pre-diabetes situation.



#### 12 – Blood Sugar Test – Test if you are diabetic (The Netherlands, 2009)

The Blood Sugar Test Event was organized by the Dutch pharmacists association (KNMP) from November 14 (for the World Diabetes Day) until November 28, 2009. Any patient could have a free blood sugar test in his local community pharmacy and could make an appointment through a dedicated website. After the test, patients received a score card with their personal results reported on it.

This diabetes-testing campaign was promoted through advertisement in the press and through posters displayed in community pharmacies.



#### 13 – Preventing diabetes: Physical activity and Health Diet (Spain, 2009)

The Consejo Andaluz de Colegios de Farmacéuticos organized in November 2009 a campaign on type 2 diabetes prevention.

This campaign consisted of:

- measuring blood glucose
- evaluation of diabetes risk (based on the questionnaire developed by the American Diabetes Association)
- advice on the prevention of type-2 diabetes and the positive impact of health diet and physical activities (through a patient leaflet)

These activities were offered free-of-charge to all interested patients during the World Diabetes Day.



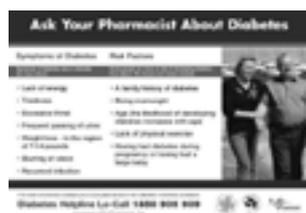
#### 14 – Do you know your diabetes risks? (Spain, 2009)

In November 2009, the Colegio Oficial de Farmacéuticos of Burgos organised a health promotion campaign on diabetes.

This campaign was supported by many local partners including Gerencia de Salud de Área, the association of diabetic patients and Lifescan.

This campaign aims to inform patients on diabetes and to offer early detection of patients at risk of being diabetes. During this campaign, patients received a leaflet from their pharmacies and several activities were organized such as

screening in the office of the Colegio and in the main square of the capital city, as well as a lecture to the population.



**15 – Ask your pharmacist about diabetes (Ireland, 2006)**

In 2006, the Irish Pharmaceutical Union organized a communication campaign to raise awareness on diabetes and to invite the general public to ask questions to pharmacists about this disease.



**16 – Obesity – a major problem (Spain, 2004)**

For the 2004 World Diabetes Day, the Consejo de Colegios Farmacéuticos de Cataluña and the Asociación de Diabéticos de Cataluña organized a campaign on the prevention of obesity, as a risk factor for developing type-2 diabetes.

The 3000 community pharmacies from the region took part in this campaign through:

- educational sessions for the general public to educate them about obesity, its risks factors and how to reduce them
- through displaying the poster campaign.

**17 – Diabetic screening campaign in Lorraine (France, 2005)**

The European program for the screening of diabetic patients supported by EU Fund INTERREG III is a programme implemented in 3 different countries (Belgium, Luxembourg and France) and lead by diabetic patients associations and local health authorities.

During one week, a screening programme was run in the three countries to detect patients at risk of being diabetic.

In Lorraine region (France), the screening was made only through community pharmacies.

Based on the results of the questionnaire, pharmacists referred patients to their physician.

In addition to the screening activities, French community pharmacists also provided patient leaflets and advices on diabetes and life-style to prevent diabetes.



**18 - Know the Symptoms of Diabetes (Spain, 2010)**

On the 2010 World Diabetes Day, the Consejo General de Colegios Oficiales de Farmacéuticos together with the Spanish Society of Pediatric Endocrinology and the Foundation for Diabetes, organised an educational campaign aiming at educating parents on the symptoms of pediatric diabetes, and on what type 1 diabetes is, what its symptoms are, what ketoacidosis is and what to do in case your children experience some of these symptoms. This campaign was run through leaflets and posters in the 21000 community pharmacies of Spain.

**19 – Identifying diabetic patients with uncontrolled diabetes (Portugal, 2007)**

Between 12 and 17 November 2007, all diabetic patients aged 18 and higher on diabetes medication were included in a campaign aiming at monitoring and identifying diabetic patients out of references value (e.g. not controlling effectively their diabetes).

To run this campaign, the national association of pharmacies (ANF) developed a model and tools in collaboration with two medical societies in the field of diabetes. These tools included a Pharmacists' intervention protocol on diabetes with capillary blood glucose recommended values and a spreadsheet to document care provided. This campaign was also relayed through deliverables for diabetic patients, such as leaflets. 1,763 pharmacies took part in the campaign and 7,719 patients were tested, out of whom 47% were out of reference values.

**20 – Reminding diabetic patients to be immunized against flu (Belgium, 2007)**

On autumn 2007, a pilot project was run by the Association Pharmaceutique Belge (APB) was implemented aiming at using community pharmacy as a medium to raise awareness among diabetic patients on the importance of being immunized against influenza.

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Later on, in 2009, another pilot project was launched: Belgian pharmacists were asked to identify diabetic patients (based on the medication history), to talk with them about the benefits of influenza vaccination, to disseminate brochures and/or to refer them to their physicians for a vaccine prescription, through a specific document.

Among diabetic patients, the immunization rate increased from 45,6% (2006) to 48,6% (2009). The improvement of vaccination rate against flu was more important among diabetic patients younger than 50 years (from 12,7% to 16,6%).



21 – Diabetes awareness campaign (Spain, 2009)

On January 2009, the Colegio Oficial de Farmacéuticos de A Coruña organized a health promotion campaign on diabetes. The aims of this campaign were to inform patients about this disease, as well as to provide them with advices on how to prevent it.

For diabetic patients, this campaign also raises awareness of the diabetic foot and highlighted the positive impact of diabetes of medicines and sports.

This campaign was relayed through posters and patient leaflets.



22 – Diabetes campaign (Denmark, 2006)

During this campaign held between 29 October and 3 December 2006, pharmacists promoted health lifestyle and adherence to treatment for diabetic patients.

They also published a guide on diabetic treatment disseminated at the pharmacies.

Moreover, because of the increased risk of smoking and being diabetic, free smoking cessation courses are offered to all diabetic throughout November.

# ABOUT THE INTERNATIONAL PHARMACEUTICAL FEDERATION (FIP)

FIP is a worldwide federation of national pharmaceutical (professional and scientific) associations, with a mission to improve global health by advancing pharmacy-practice and science to enable better discovery, development access to and safe use of appropriate, cost “effective”, quality medicines worldwide.

Through its Member Organisations, FIP connects, represents and serves more than two million pharmacists and pharmaceutical scientists around the world. FIP was founded in The Hague, The Netherlands, in 1912 and still has its central office in The Hague. Although FIP is a federation of associations, any pharmacist or pharmaceutical scientist can apply to Become an Individual Member of FIP.

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