

Expert Q&A with Lars Rebien Sørensen

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Global Health Takes Center Stage

What do Bono, Ban Ki-moon, and Lars Rebien Sørensen, the President and Chief Executive Officer of Novo Nordisk all have in common?

Community Solutions Article

What will the future bring? According to the 2011 National Diabetes Fact Sheet from the Centers for Disease Control and Prevention (CDC), diabetes currently affects 25.8 million people in the U.S.

Diabetes in the US: New Data from the CDC

Diabetes affects 25.8 million people – 8.3% of the U.S. population.

Government Update

An overview on Novo Nordisk's advocacy efforts in increasing diabetes prevention, detection, treatment and care funding and resources in the U.S.

DIABETES AND GLOBAL HEALTH

Chronic non-communicable diseases (NCDs), including diabetes, cardiovascular disease, cancer and chronic respiratory disease, pose a significant burden across the globe. Our first issue of 2011 examines diabetes globally and spotlights noteworthy advocacy and community initiatives in the US.

EXPERT Q&A: AN INTERVIEW WITH LARS REBIEN SØRENSEN

President and CEO of Novo Nordisk

On January 28, 2011, Lars Rebien Sørensen, President and CEO of Novo Nordisk, participated in the "Raising Healthy Children" panel at the World Economic Forum 2011 Annual Meeting in Davos, Switzerland alongside Bono (Lead Singer of U2 and co-founder of ONE campaign), Margaret Chan (Director-General of the World Health Organization), Melinda Gates (Co-Chair of the Bill & Melinda Gates Foundation), and Muhtar A. Kent (Chairman of the Board and CEO of the Coca-Cola Company, USA).

As a follow-up to this discussion, the Novo Nordisk BlueSheet asks Sørensen some questions related to diabetes, children's health and the overall global health outlook for developing countries today.



Q What type of economic impact do diabetes and other non-communicable diseases have on developing countries today?

A Over the past couple of years, the global burden of disease has shifted from infectious diseases to non-communicable diseases like heart disease and diabetes. As one of the biggest public health problems we've ever had, diabetes puts a significant strain on a country's economy. In fact, at this year's World Economic Forum we heard that non-communicable diseases are estimated to cost low-and middle-income countries as much as five percent of their gross domestic product (GDP).

Public health systems in developing countries are simply not equipped or funded to manage this rise in non-communicable diseases. Lack of treatment and care causes further complications, which in turn places a greater burden on the economy. Without intervention and increased access to health care, the

serious health consequences of non-communicable diseases like diabetes and the associated health care costs will continue to skyrocket.

Q What challenges do developing countries face in treating type 1 and type 2 diabetes in children?

A According to the World Health Organization, developing countries will likely bear the brunt of the diabetes epidemic in the 21st century. In these countries, less than half of people with diabetes are diagnosed. As a result, many do not receive the adequate treatment and care needed to successfully manage the disease, putting them at greater risk of serious complications and even death.

Type 1 diabetes may only account for about 5-10% of total diabetes cases, but unlike type 2 diabetes, it cannot be prevented. As a result, access to proper care and medication are the greatest roadblocks to successful management and treatment of the disease. In today's world, there is no reason that children with type 1 should face an early death due to their diabetes. We have the medication and resources they need. The problem is access.

Type 2 diabetes offers a different set of challenges for developing countries. As much as 80% of type 2 diabetes may be preventable through maintaining a healthy weight and increased physical activity, but without ongoing, effective prevention efforts, diabetes will continue to rise. Developing countries are facing a dual challenge now. At lower socioeconomic levels, these countries have people suffering from lack of food and basic healthcare; however, members of the rising middle and upper classes are adopting Western-style behaviors, contributing to overweight and obesity, which are associated with increased risk for type 2 diabetes. We all have a social responsibility to help children avoid type 2 diabetes in their lifetime through education, awareness and preventive measures that lead to healthier food choices and regular physical activity.

Q What are the access challenges that societies face in treating diabetes effectively, particularly among children?

A This is an issue of basic care. Today, less than 10% of the people living with diabetes globally receive the optimal care needed to properly manage the disease. In particular, children with type 1 diabetes in developing countries face numerous barriers to diabetes care: lack of trained personnel, lack of infrastructure and difficulties for the family to pay for treatment (insulin, syringes and strips). These barriers may lead to misdiagnosis, poor management, early complications and premature death of children. Treating diabetes in children is not the same as treating diabetes in adults. In developing countries, there is often a general lack of understanding of diabetes and the burden it represents to a child, the child's family and the community. Diabetes can be treated, which is why we need to build sustainable infrastructures across the globe for detecting, preventing, treating and caring for diabetes in all age groups.



Q Are you surprised that there wasn't a greater focus on diabetes in children at this year's World Economic Forum?

A No, I am not surprised because typically when we talk about global health and children's health much of the focus and media attention goes to infectious diseases like polio and malaria -- not diabetes. But we are seeing the beginning of healthy debate about the impact of non-communicable diseases among specific population segments because we are seeing a rise in the diabetes epidemic in emerging market countries in Asia and Latin America. So I predict there will be much more attention given to diabetes in the future.

Q What can world leaders do today to improve the global health outlook for children?

A Children have the right to the highest possible standard of health and access to health care. On a global scale, we are simply not doing enough to protect and ensure this. Governments, communities, parents, educators and health care professionals all play a critical role in the health care of children. We need a systematic and sustainable approach to raising healthy children today. And we need it now. It has never been more critical for business leaders around the world to realize the power and potential they have when it comes to this endeavor.

Healthy children begin with healthy parents and we need to make every effort to provide parents with the information, resources and support needed to make good lifestyle choices. The workplace is an excellent place to start. The Workforce Wellness Alliance, a consortium of corporations including Novo Nordisk, Nestlé, Johnson & Johnson, Unilever, BT and others, is designed to improve global health and productivity by making wellness a priority in the workplace and beyond. The alliance focuses on knowledge sharing and developing and promoting the use of standardized metrics with the goal of achieving a global standard of wellness to enhance population health and workforce productivity. I'd strongly urge all companies to adopt wellness programs that will inspire employees and their families to live longer, healthier and happier lives.

Q What is Novo Nordisk doing to elevate the importance of diabetes as a global health issue particularly among children?

A As a diabetes care company, we have an obligation to use our resources and expertise to help children across the globe. From raising awareness to prevention outreach to long-term treatments in the world's poorest countries, Novo Nordisk is committed to raising healthy children and halt the rise in diabetes within this segment of the population.

In most developing countries there are no existing facilities for treating children with diabetes. Children

with type 1 diabetes in developing countries have high mortality rates, with life expectancies of less than one year in some countries in sub-Saharan Africa. In 2008, we established the Changing Diabetes® in Children program to address the urgent needs of children with diabetes by providing support and appropriate diabetes care while building the capacity in the healthcare system to sustain care in the longer-term. The program provides the necessary medical and laboratory equipment, organizes training of healthcare professionals, puts in place patient education and creates systems for adequate monitoring and follow-up. In addition, insulin and diabetes supplies are also provided free of charge for the duration of the program.



In 2010, 13 clinics were established under the Changing Diabetes® in Children program. To date, more than 1,200 children have been enrolled in the program, which is currently active in six countries: Bangladesh, Cameroon, the Democratic Republic of Congo, Guinea-Conakry, Uganda and Tanzania.

GLOBAL HEALTH TAKES CENTER STAGE

What do Bono, Ban Ki-moon, and Lars Rebien Sørensen, the President and Chief Executive Officer of Novo Nordisk all have in common? These invited panelists of the World Economic Forum 2011 Annual Meeting joined leaders from industry, government, academia, civil society and the media in Davos, Switzerland in January to explore some of the most critical issues in global health today - combating chronic disease and raising healthy children.

Chronic non-communicable diseases (NCDs), including diabetes, cardiovascular disease, cancer and chronic respiratory disease, pose a significant burden across the globe. The International Diabetes Federation (IDF) projects that in 2030, there will be 438 million people with diabetes around the globe, up from 285 million in 2010.¹

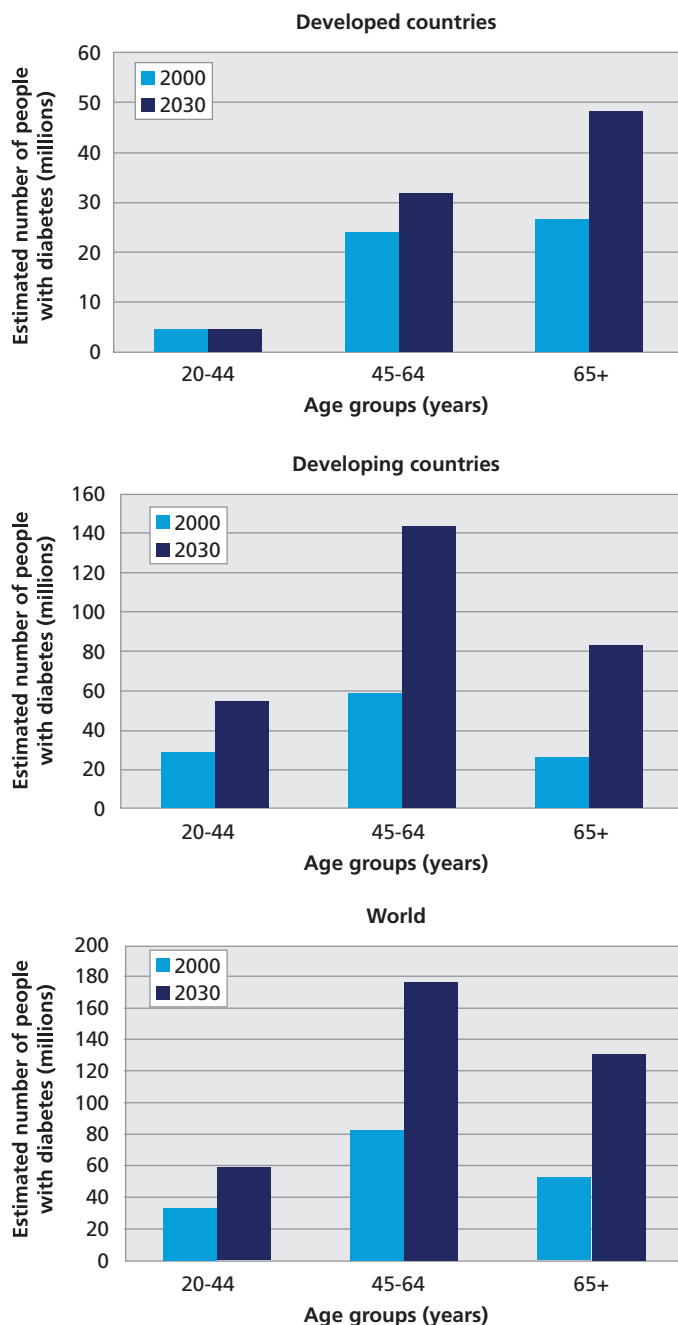
According to the World Economic Forum (<http://www.weforum.org>):²

- » 35 million people die every year due to chronic diseases.
- » Chronic diseases are responsible for 60% of global deaths, with heart disease, cancer and obesity rapidly increasing their share of mortality and morbidity.
- » Public health and medical care expenditures now account for one tenth of all global economic activity.
- » More than 80% of deaths from chronic diseases occur in developing countries, but only 3% of development assistance goes to chronic diseases.

Although often associated with developed nations, the presence of chronic NCDs has become the dominant health burden in many developing countries. Chronic diseases were responsible for 50% of the disease burden in 23 high-burden developing countries in 2005 and will cost those countries \$84 billion by 2015 if nothing is done to slow their growth.³

No longer just a health concern, chronic diseases have gotten the attention of world business leaders. According to Julio Frenk, Dean of Harvard's School of Public Health, "The big change that has happened in global health, particularly during the last decade, is that health stopped being the concern only of the domain experts, people who are experts in health, like myself, and started becoming a central component of the most pressing issues on the global agenda."⁴

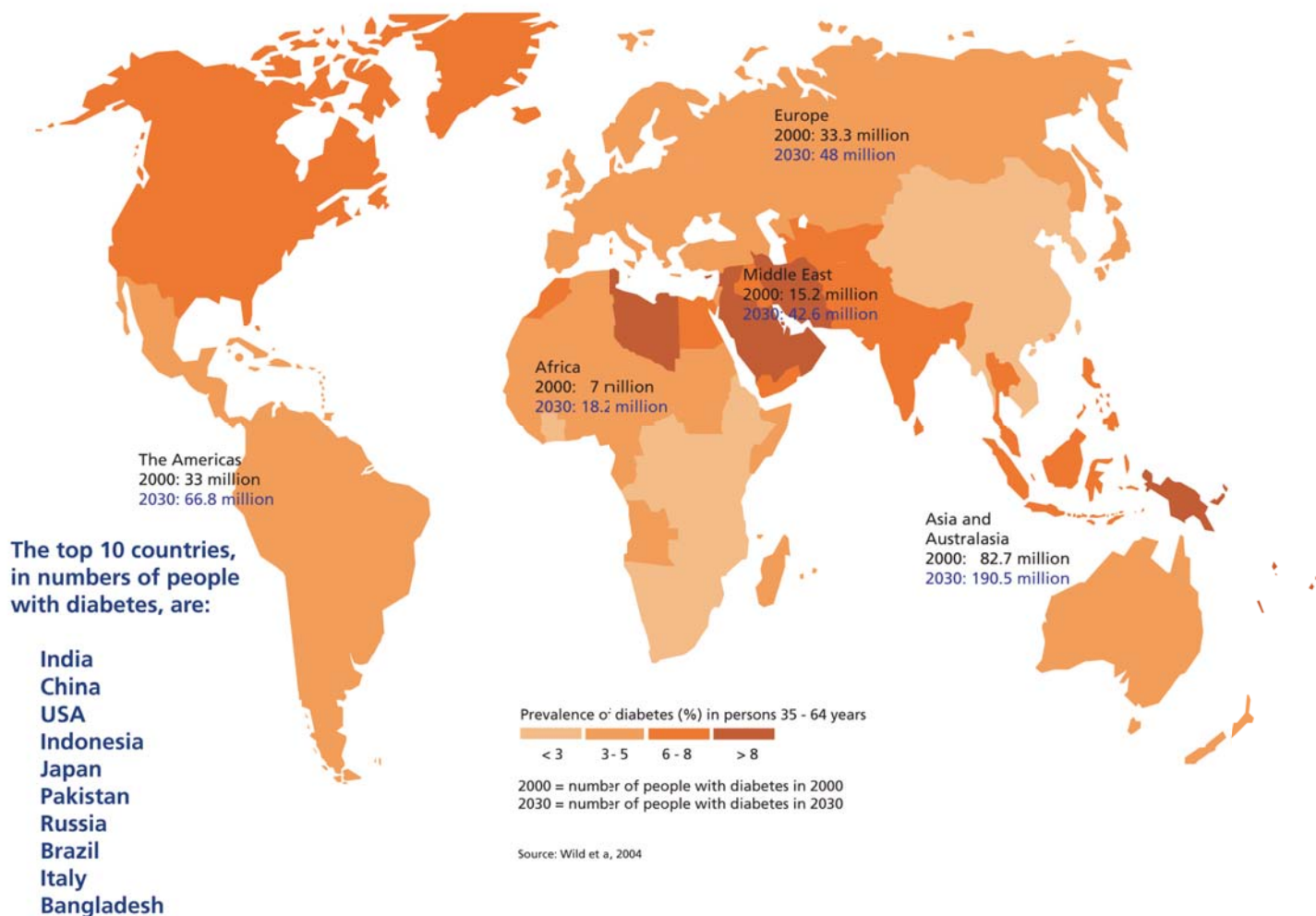
Case in point: in 2008, the World Health Organization (WHO), the coordinating authority for health within the United Nations (UN), launched a five-year action plan to prevent and control four non-communicable



Figure—Estimated number of adults with diabetes by age-group, year, and countries for the developed and developing categories and for the world.

Source: "Global Prevalence of Diabetes Estimates for the year 2000 and projections for 2030." *Diabetes Care*, Volume 27, No. 5, May 2004.

Prevalence of diabetes



diseases – cardiovascular diseases, diabetes, cancers and chronic respiratory diseases. This September, the UN will hold a high-level meeting on the Prevention and Control of Non-communicable Diseases in New York in its continued effort to forge public-private partnerships in prevention of chronic diseases.

Ban Ki-moon, Secretary-General of the United Nations, posed a call to action against the global chronic disease epidemic at the World Economic Forum in January saying that it “requires political vision and resource mobilization across sectors, across ministries and across borders. We need businesses to be there in full force, and not just the health industry...”

In addressing concerns around the rise in chronic NCDs today, it would be remiss to overlook one of the leading underlying causes – obesity. According to WHO, non-communicable diseases now account for 90 percent of premature deaths in low- and middle-income countries, where obesity is a rising problem.

“Non-communicable diseases, such as cardiovascular diseases, cancers and diabetes represent a leading threat to human health and socioeconomic development,” said Dr. Ala Alwan, WHO’s assistant director-general for non-communicable diseases and mental health. “Implementing these recommendations should be part of broad efforts to prevent unhealthy diets - a key risk factor for several non-communicable diseases.”⁵

Obesity is also rising at an alarming rate among children and adolescents who are increasingly being diagnosed with type 2 diabetes. In fact, according to the WHO, childhood obesity has become one of the most serious public health challenges of the 21st century. The prevalence has increased at an alarming rate. Globally, in 2010 the number of overweight children under the age of five was estimated to be over 42 million. Close to 35 million of these children are living in developing countries.⁶

In January, WHO shared a set of new recommendations attacking the marketing of harmful food to children

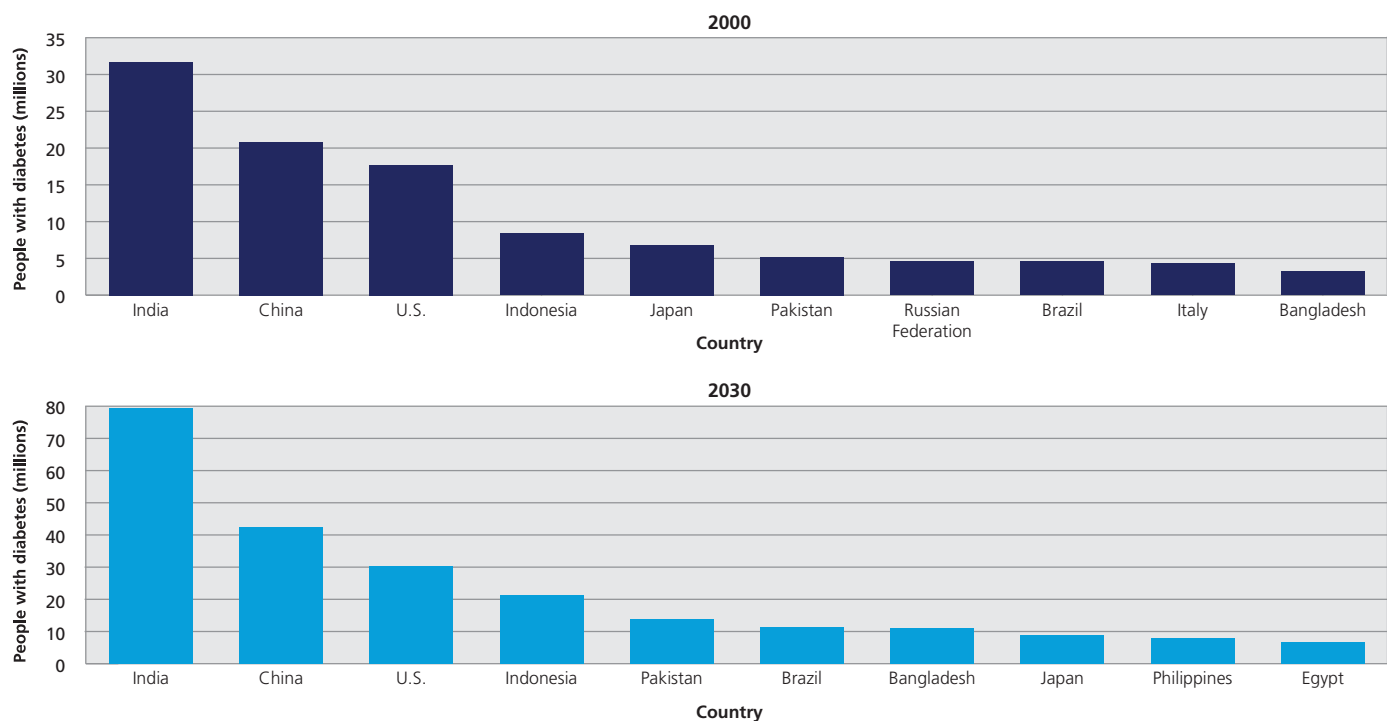


Figure - List of countries with the highest numbers of estimated cases of diabetes for 2000 and 2030.

Source: "Global Prevalence of Diabetes Estimates for the year 2000 and projections for 2030." *Diabetes Care*, Volume 27, No. 5, May 2004.

following the release of a study of children ages three to five suggesting there is clear evidence that children are regularly targeted with calorie-dense, nutrient-poor food. According to the research findings, which were published online in the journal *Appetite*, children's knowledge and consumption of fast food has a significant impact on their palate and preference for foods that are high in added sugars, salt and fats.⁷

The recent World Economic Forum also addressed the issue of raising healthy children. Lars Rebieen Sørensen, President and Chief Executive Officer of Novo Nordisk joined opinion leaders like Bono, Melinda French Gates, and Margaret Chan (Director-General, World Health Organization) to discuss several dimensions to children's health, including access to medicines and vaccinations, maternal health and nutrition, and social and cultural factors as they relate to disease and mortality rates among children in developing countries. Read more about Lars' experience at the World Economic Forum in our Expert Q&A.

By starting a dialogue on the burden of chronic NCDs and the threats and challenges in raising healthy children on a global level, we are taking a critical first step in engaging those key stakeholders who have the power to raise awareness, take action, and advocate for the resources needed to ultimately prevent the spread of diabetes and other chronic diseases across the world.

Let's see where they take us.

Footnotes

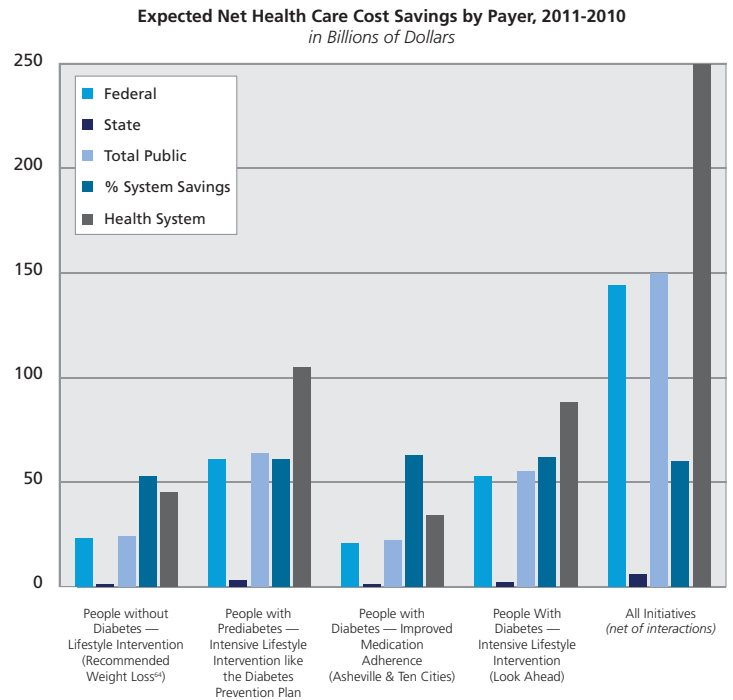
- 1 International Diabetes Federation. "IDF Diabetes Atlas" <http://www.diabetesatlas.org/content/diabetes-and-impaired-glucose-tolerance>.
- 2 World Economic Forum. <http://www.weforum.org/news/calls-cooperation-fight-chronic-disease>
- 3 Rachel Nugent (Center for Global Development, Washington, D.C.) "Chronic Diseases in Developing Countries Health and Economic Burdens." *Annals of the New York Academy of Sciences* http://www.cgdev.org/doc/expert%20pages/nugent/Nugent_Annals_article.pdf, 2008.
- 4 World Affairs Commentary with Rahim Kanani. <http://www.rahimkanani.com/2010/12/10/an-in-depth-interview-with-dean-julio-frenk-of-harvards-school-of-public-health-on-global-health-international-crises-women-and-girls-and-much-more/>. December 10, 2010.
- 5 Mike Stones. "WHO Highlights Governments' Role in Curbing Unhealthy Advertising." *Food Navigator USA*. <http://www.foodnavigator-usa.com/On-your-radar/The-obesity-problem/WHO-highlights-governments-role-in-curbing-unhealthy-advertising>. January 27, 2011.
- 6 World Health Organization. <http://www.who.int/dietphysicalactivity/childhood/en/>
- 7 Nathan Gray. "Study Begins to Unlock the Development of Child Taste Preferences." *Food Navigator USA*. <http://www.foodnavigator-usa.com/On-your-radar/The-obesity-problem/Study-begins-to-unlock-the-development-of-child-taste-preferences>. January 28, 2011.

COMMUNITY SOLUTIONS: A LOOK AT THE NEW DPCA

What will the future bring? According to the 2011 National Diabetes Fact Sheet from the Centers for Disease Control and Prevention (CDC), diabetes currently affects 25.8 million people in the U.S.¹ Clearly, the need for diabetes prevention and awareness is now. By shifting the paradigm from diabetes treatment to diabetes prevention, we can reduce the risks and improve clinical outcomes for the millions of Americans living with, or at risk of, diabetes. But increasing awareness of meaningful lifestyle changes and offering a realistic and holistic solution to this problem requires consumer incentives, improved access to care, multi-stakeholder collaboration and action.

Enter the Diabetes Prevention and Control Alliance (DPCA).

The DPCA is an innovative public/private partnership with UnitedHealth Group, the CDC, Novo Nordisk, the YMCA of the USA (The Y) and retail pharmacies designed to help prevent and control diabetes, pre-diabetes and obesity with evidence-based compliance solutions through alternate provider networks and additional points of care.

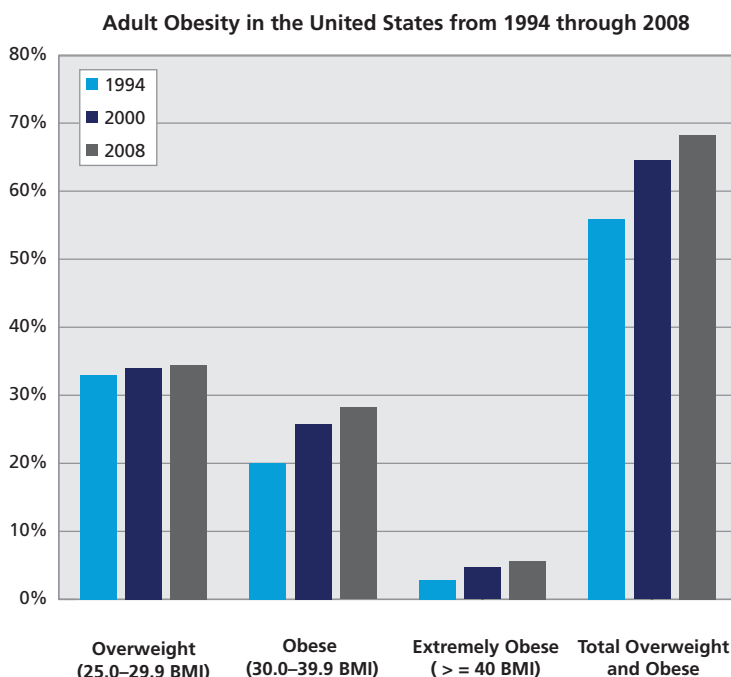


Source: UnitedHealth Group modeling, 2010.

The DPCA is supported by two main programs - The Diabetes Prevention Program and the Diabetes Control Program. The goal of both is to lower insurance costs and premiums while helping employers do more to manage health costs.

- » The Y Diabetes Prevention Program is a 16-session, evidence-based group lifestyle intervention that has been shown to decrease the risk of conversion from pre-diabetes to diabetes by 58% for participants.² Y “lifestyle coaches” will help people who are at risk for diabetes lower their odds of developing the disease by losing just a modest amount of weight.
- » The Diabetes Control Program is a pharmacist-based consultation and coaching program designed to help patients living with diabetes to improve their compliance with routine diabetic care, medications and healthy eating and activity.

As the first pharmaceutical partner in the alliance, Novo Nordisk oversees a critical component to the success of the alliance – driving physician awareness of and engagement with the DPCA program. Through the program, Novo Nordisk



Source: National Health and Nutrition Examination Survey, National Center for Health Statistics, Centers for Disease Control and Prevention.

has an opportunity to collaborate with healthcare providers who share the company's primary goals: 1.) primary prevention; 2.) the prevention of diabetes progression; and 3.) helping patients with diabetes gain control of their condition. To date, Novo Nordisk has initiated physician outreach to 1,400 health care professionals in five markets for the initial phase of the DPCA launch: Dayton, Columbus and Cincinnati, Ohio; Phoenix; and Indianapolis with more planned throughout the year.

Footnotes

- 1 Centers for Disease Control and Prevention (CDC). <http://www.cdc.gov/diabetes/pubs/factsheet11.htm>
- 2 Eric Schoch. "A 7% Solution." Indiana University Office of the Vice Provost for Research Publication. http://www.research.indiana.edu/magazine/index.php?option=com_content&view=article&id=111:a-7-solution&catid=45:fall-2010-volume-xxxiii-number-1&Itemid=78. Fall 2010

What's the Word on the DPP and DPCA?

Diabetes Prevention Program

Senator Al Franken (D-MN), Member of the Committee on Health, Education, Labor & Pensions

"This public-private partnership is a perfect example of how good policy can bring people together. Diabetes prevention is win-win-win. It saves money and makes us a healthier country."

Senator Tom Harkin (D-IA), Chairman of the Committee on Health, Education, Labor & Pensions

"Removing the barriers to healthy living starts at the local level – it starts in our communities. And these kinds of local programs have a big return on investment. Programs like those offered through the YMCA help rein in chronic diseases like diabetes, which will mean less health spending down the road. Our aim in health reform was to change our 'sick care' system into a true health care system. This first-ever effort by a major health plan to reimburse for prevention reflects the spirit of the new health reform law."

Marilyn Schenetzek, Carmel, Indiana, participant in YMCA Diabetes Prevention Program in Indianapolis:

"Participating in the Diabetes Prevention Program at the YMCA was so much easier than I imagined and has improved my health -- and my life. The group setting was supportive, and the lifestyle coach showed me how healthy eating, physical activity and other simple changes could help me prevent diabetes. I lost 49 pounds through the program and my doctor says I have successfully reduced my risk of getting diabetes. I would encourage anyone at high risk of diabetes to participate in this program."

Diabetes Prevention and Control Alliance

Simeon Schindelman, Medica Senior Vice President, Commercial Sales

"It's widely accepted that the cost of treating and managing diabetes is one of the fuels feeding the fire of unsustainable increases in health care costs. Medica believes that the Alliance model of diabetes prevention and control will help reduce health care costs and improve health outcomes for our health plan members who participate in the program."

Deneen Vojta, MD, Senior Vice President of the UnitedHealth Center for Health Reform and Modernization

"Type 2 diabetes is largely a preventable disease, and there is unequivocal evidence that its enormous human and economic toll can be significantly reduced by early and aggressive intervention. Research has shown that pre-diabetics who lose 5% of their body weight can reduce the conversion to full-blown diabetes by 58%."

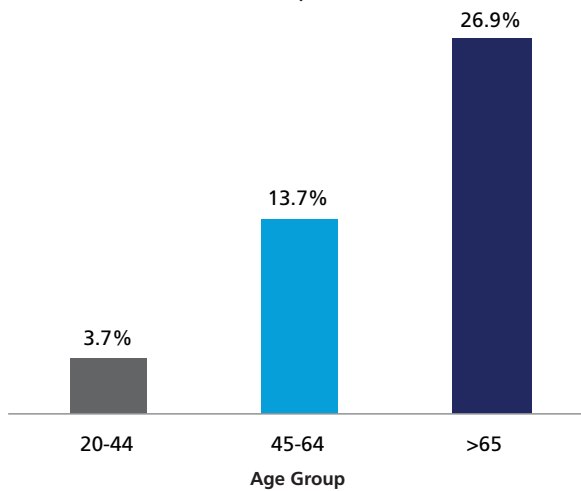
DIABETES IN THE U.S.: NEW DATA FROM THE CDC¹

- » Diabetes affects 25.8 million people — 8.3% of the U.S. population.
- » Among U.S. residents aged 65 years and older, 10.9 million, or 26.9%, had diabetes in 2010.
- » About 215,000 people younger than 20 years had diabetes (type 1 or type 2) in the United States in 2010.
- » About 1.9 million people aged 20 years or older were newly diagnosed with diabetes in 2010 in the United States.
- » Diabetes is the leading cause of kidney failure, nontraumatic lower limb amputations, and new cases of blindness among adults in the United States.
- » Diabetes is a major cause of heart disease and stroke.
- » Diabetes is the seventh leading cause of death in the United States.

Footnotes

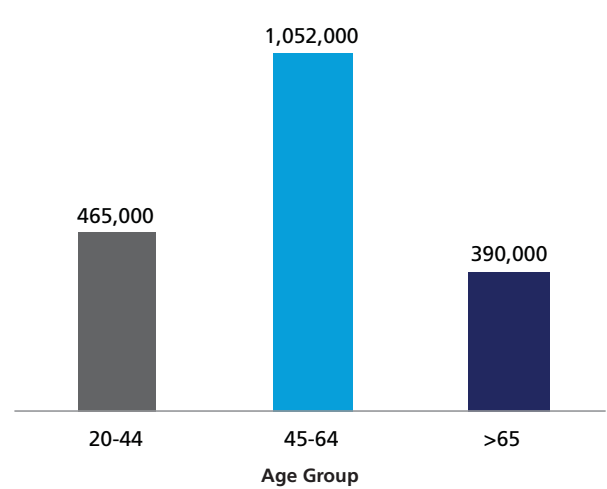
1 Centers for Disease Control and Prevention. National Diabetes Fact Sheet 2011. http://www.cdc.gov/diabetes/pubs/pdf/ndfs_2011.pdf

Estimated percentage of people aged 20 years or older with diagnosed and undiagnosed diabetes, by age group, United States, 2005–2008



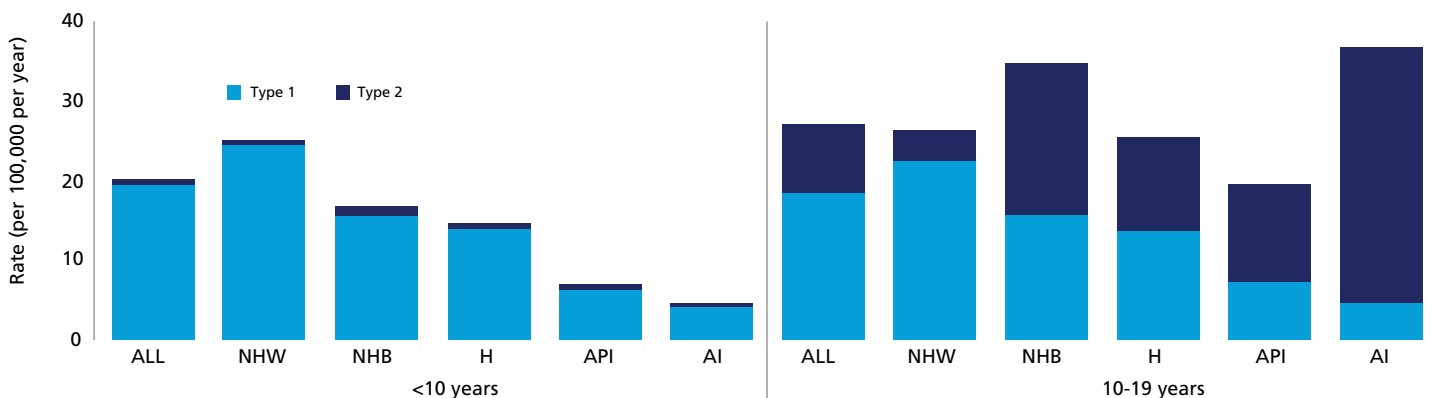
Source: 2005–2008 National Health and Nutrition Examination Survey

Estimated number of new cases of diagnosed diabetes among people aged 20 years or older, by age group, United States, 2010



Source: 2007–2009 National Health Interview Survey estimates projected to the year 2010

Rate of new cases of type 1 and type 2 diabetes among youth aged <20 years, by race/ethnicity, 2002–2005



Source: SEARCH for Diabetes in Youth Study

NHW=non-Hispanic whites; NHB=non-Hispanic blacks; H=Hispanics; API=Asians/Pacific Islanders; AI=American Indians

GOVERNMENT UPDATE

Advocacy in Action

Changes are taking place in Washington. Since the historic mid-term elections held last fall, 114 new elected officials (98 new members of the House of Representatives and 16 new Senators) have joined Congress. But what does that mean for health reform, and in particular, diabetes?

While we don't expect large-scale changes to the health care law over the next two years, Republicans in the House have begun to challenge parts of the law. As diabetes advocates, we must keep diabetes detection, prevention, treatment and care top of mind when it comes to legislation, resources and potential funding.

Diabetes affects nearly 26 million Americans and contributes to more than 200,000 premature deaths a year, yet it remains dramatically underfunded at the federal level.

In 2010, Novo Nordisk helped form the Diabetes Action Alliance (DAA), a coalition of diverse health care professional and patient advocacy organizations, to elevate diabetes on the national agenda and change how the nation perceives and approaches the diabetes epidemic. Today, the DAA continues to pursue two key initiatives in this effort:

- » Secure funds from the Prevention and Public Health Fund under health care reform to support the National Diabetes Prevention Program (NDPP).
- » Secure funds from the Prevention and Public Health Fund under health care reform to support Advocate for appropriate government diabetes screening guidelines.

Because implementation of the health reform law will proceed for the time being, Novo Nordisk Government Affairs is working closely with industry and patient partners to keep diabetes at the forefront of proposed health care rules and regulations. As the new Republican House majority challenges the current legislation, our focus will be to represent the interests of those living with diabetes today and engage in these discussions as the Republicans shape their longer-term health care strategy going into the Congressional and Presidential races in 2012.

The one thing we know for sure is this – more work must be done in educating policy makers about the need for increased funding in diabetes prevention, detection, treatment and care. The battle is far from over.

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