Q&A: FIVE QUESTIONS ON THE IDF DIABETES ATLAS 2015

Meet Nam Han Cho, President-Elect of the International Diabetes Federation (IDF) and the Chair of the IDF Diabetes Atlas Committee for the 7th edition, who welcomed the opportunity to answer questions about the new *IDF Diabetes Atlas*, and the methodology used to generate estimates.

What was most alarming about the *IDF Diabetes Atlas 7th edition* for the IDF Diabetes Atlas Committee of which you are Chair?

One critical feature about the 7th edition of the *IDF Diabetes Atlas* is that the data shows a continued increase in the prevalence of diabetes. Today, we know that 415 million people (one out of eleven adults) have diabetes and every six seconds a person dies with diabetes. Moreover, every two seconds a new case of diabetes is diagnosed somewhere in the world. This is most alarming and the whole world needs to know about it and take action.
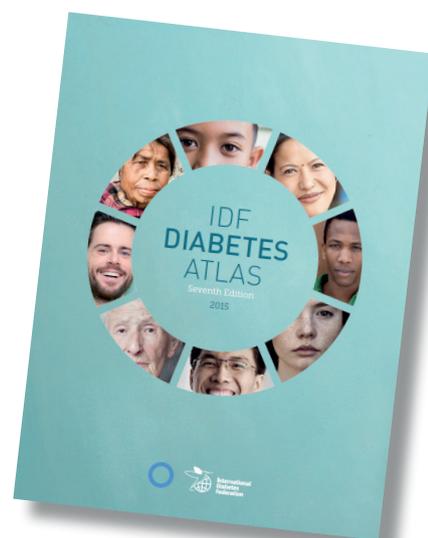
What is significant about the 2015 data? It is the first time IDF has produced a confidence interval to show the range of diabetes cases. Scientists are fully aware that the *IDF Diabetes Atlas* is on track, and understand the validity of the numbers IDF has been reporting since 2000. This is one important aspect of the 7th edition that differentiates it from previous editions.
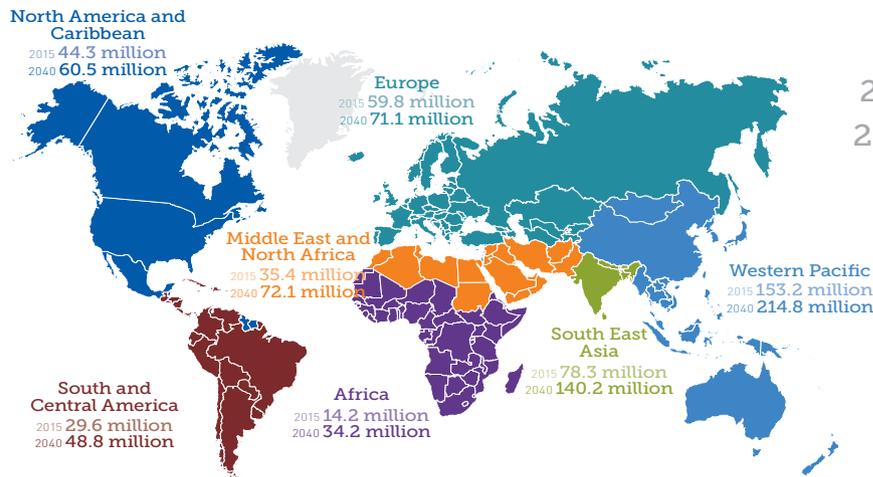
Which countries or regions today are most critically affected by the diabetes epidemic?

Regions like North America have a high prevalence, but number-wise, the Western Pacific Region, the most populous region of the world, has the greatest number of people living with diabetes totalling 153 million. With 1.9 million deaths among adults with diabetes, the Western Pacific Region had the highest number of deaths due to diabetes. More than 40% of those deaths occurred in China in people under 60.

However, I think more importantly, diabetes is affecting all regions, not just one specific region. One region tends to have more diabetes cases than others at the moment but, for example, the diabetes cases in the Africa Region are increasing very fast! We estimate that more than 14 million people live with diabetes in the (sub-Saharan) Africa Region and two-thirds of this population are estimated to be undiagnosed. However, data sources for this region are very few - more than 75% of all countries in the Africa Region lack nationwide data. This deficiency in reporting must change

North America and Caribbean
2015 44.3 million
2040 60.5 million

Europe
2015 59.8 million
2040 71.1 million

World
2015 415 million
2040 642 million

Middle East and North Africa
2015 35.4 million
2040 72.1 million

Western Pacific
2015 153.2 million
2040 214.8 million

South East Asia
2015 78.3 million
2040 140.2 million

South and Central America
2015 29.6 million
2040 48.8 million

Africa
2015 14.2 million
2040 34.2 million

Source: IDF Diabetes Atlas Seventh Edition, International Diabetes Federation 2015

for the future health of the people living in these 49 diverse countries and territories.

Let's not focus on one regional crisis. The diabetes epidemic is on increase all over the world. It is a global issue.

It has been suggested by a few key opinion leaders in the diabetes community that the 7th edition has limitations including underestimated prevalence and country estimations based on inexact modelling. Can you discuss? In your view, what are the greatest barriers in attempts to report data for the global diabetes crisis?

This question is more of a methodological issue; so called sensitivity analysis. With a sensitivity analysis you probably get a better estimation when you include more risk factors in the model. For example, the level of obesity in each country, age distribution of each country, or family history in the country. But all those details are very difficult to know unless national data is reported. Unfortunately, we have learned that existing publications, especially in developing countries, are so limited. Because of this gap, we used data coming from neighbouring countries and adapted the estimates to provide the country's rate. So of course, when you do that there are limitations but there is nothing we can do about it.

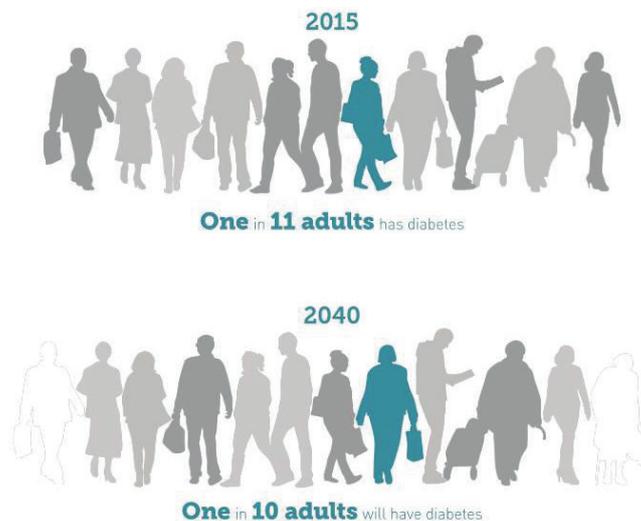In this edition, we included many new concepts by giving them a weight. For example, if there was a nationwide publication we gave it more weight than for a localized publication. And if the publication was issued within the past three years we gave it a different weight [than for an older publication]. If data was based on the oral glucose test versus fasting insulin or a randomised glucose test we gave different weights for the studies depending upon the significance of the data.

It seems that scientists around the world think IDF's approach is the right way to manage insufficient data and we believe it works.

If the current trends in diabetes prevalence continue, by 2040 some 642 million people, or one adult in ten, will have diabetes. Given that 75% of all people with diabetes live in low- and middle-income countries, what cost-effective measures are most critical for the future health of these countries?

It is a very tough question because, as you say, 75% of all people with diabetes today live in low- and middle-income countries.

This indicates that there are insufficient screening programmes or awareness initiatives in these countries. Screening programmes and prevention initiatives are the most cost-effective way for measuring diabetes risk. In low- and middle-income countries, there are

2015

One in **11 adults** has diabetes

2040

One in **10 adults** will have diabetes

limited or no resources at all so this is difficult to resolve.

The development of diabetes care or education materials for low-income countries is a priority for IDF. We have several diabetes education and care programmes for countries that can afford the additional cost, and today we are in the process of helping low- and middle-income countries find better solutions for highlighting risk, detecting the undiagnosed and building stronger prevention programmes.

What do you view as the next step for diabetes epidemiology research? In looking ahead to the 8th edition, what data has been missing and is most critical to source?

I would like to cover more than just diabetes epidemiology issues in *IDF Diabetes Atlas 8th edition*. We do have a good methodology in hand now, and I am sure there will be new scientific reports coming out in the next two years with an ambitious focus on countries that are lacking their own data.

For diabetes morbidity we do not have much information on diabetes complications of the foot. There are a lot of publications coming out on diabetic retinopathy, but they are all coming from developed countries not the low- and

middle-income countries.

Epidemiology or the measuring of frequency and prevalence of diabetes is solid, so that is not a problem. I believe we should cover diabetes morbidity and mortality with greater emphasis in the 8th edition.

Nam Han Cho is President-Elect of the International Diabetes Federation for 2016-17.