RDPAC

THE FACES OF INNOVATION

Meeting the Challenge of Diabetes

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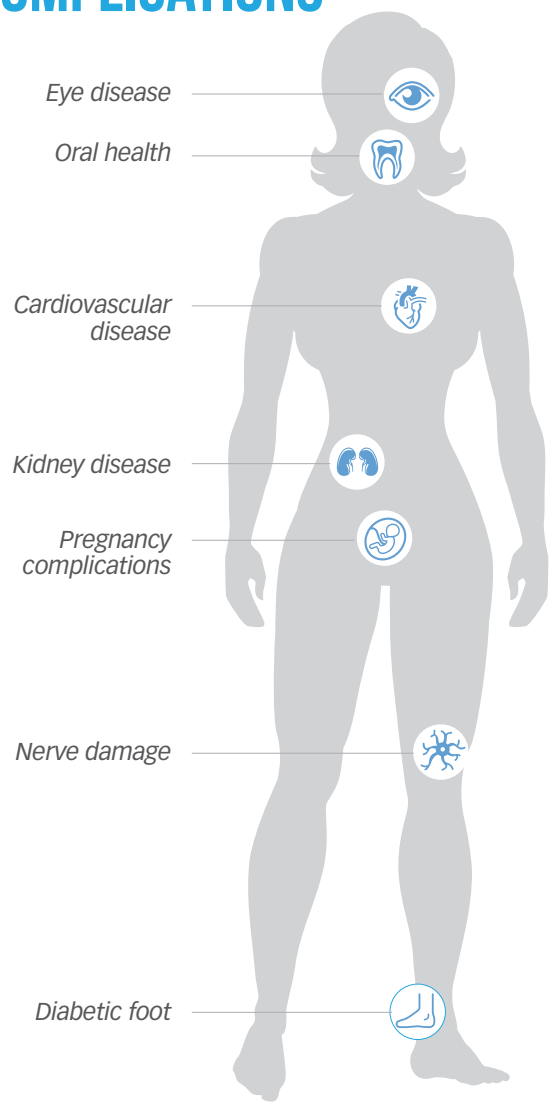
Introduction

Diabetes is an incurable disease. Once diagnosed, however, the disease can be managed – especially if detected early – and consequences like heart disease, kidney failure, and blindness can be avoided.

Currently, the global prevalence of diabetes is 8.8%[1]. According to 2015 IDF estimates, China's rate of diabetes is 10.6%[1], with 110 million people living with the disease.

MAJOR DIABETES COMPLICATIONS



8.8%
global prevalence

10.6%
prevalence in China

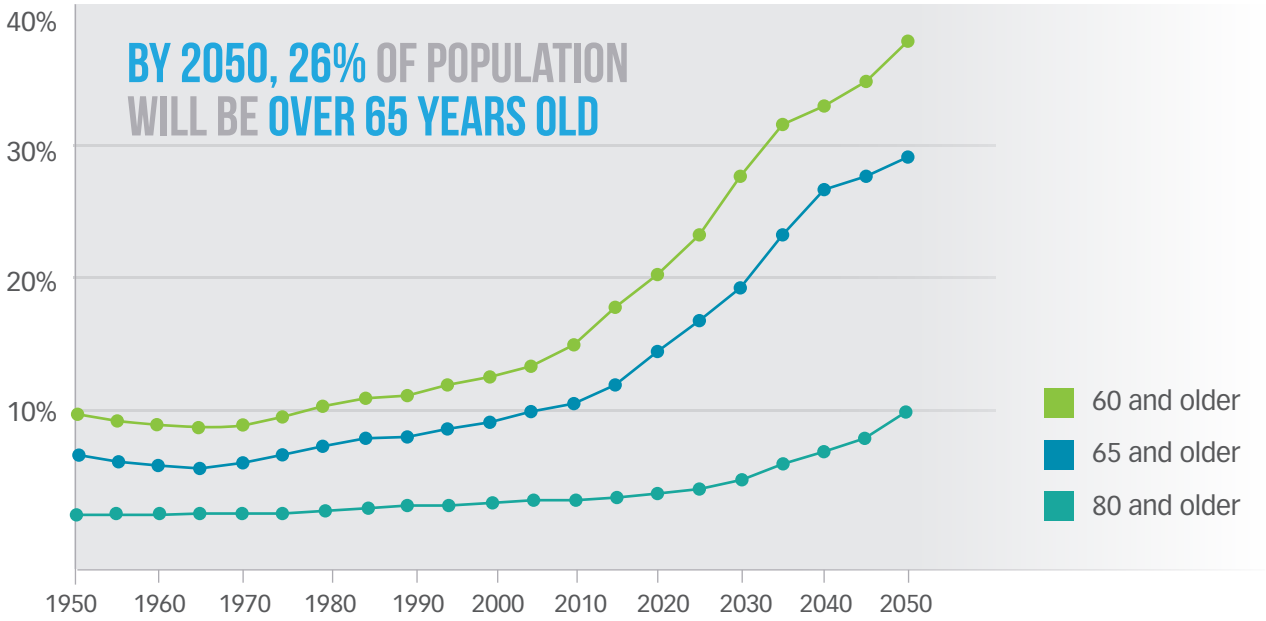
110 MILLION
people living with diabetes

1 in 10 adults have diabetes

Non-Communicable Disease and Diabetes in China

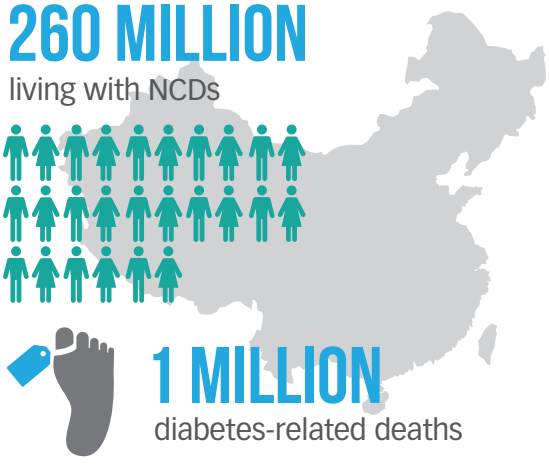
Aging population in China

According to the research[2], by 2050 more than 26% of the Chinese population will be 65 years of age or above, a large increase from 2015, when only 10% of the population was made up of the elderly. The prevention and control of Non-Communicable Diseases (NCDs) presents a challenge for China. Current healthcare resources for elders with NCDs in China may be insufficient to cover the emerging aging population. Indeed, evidents from the fact that in 2008[3], there were around 35% of patients with NCDs from rural areas did not receive necessary health-care services from hospitals. Urgent action is needed for the government to develop associated policies to encourage research and prevention of NCDs.



NCDs and Diabetes in China

More than 260 million[5] people in China suffer from NCDs, 80% of whom are over 60 years old. Expenditures related to NCDs account for 70% of total health-care expenditures[5]. Diabetes is one of the three most prevalent NCDs in China, with a mortality rate of more than 1 million annually.[1]

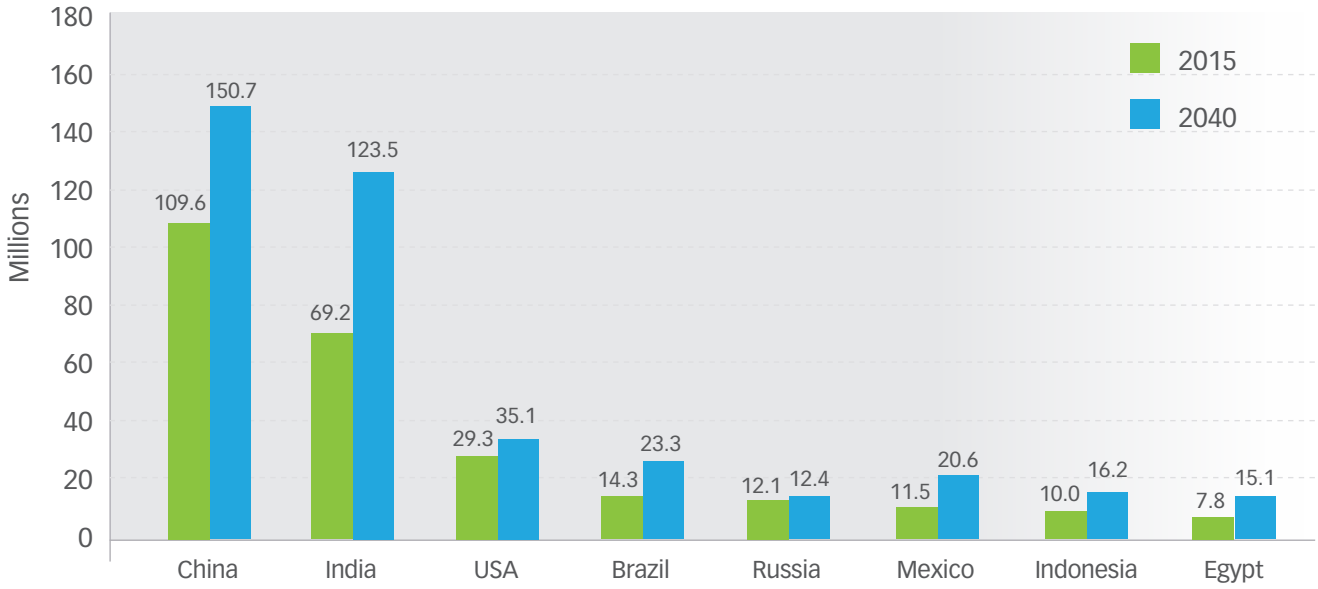


China's NCDs Prevention and Control

In light of the current situation, China has drafted an NCD prevention and treatment plan for 2016-2025. The plan will be released in 2016 with a focus on prioritized NCDs, and will include a pilot program for the elderly and young people, as well as an NCD intervention program for public health. Mid-term prevention and treatment of diabetes is one area specifically targeted by the plan.

According to the IDF report[1], China has the world's largest number of diabetes patients, and predictions for 2040 suggest it will remain the number one country struggling with diabetes and its complications.

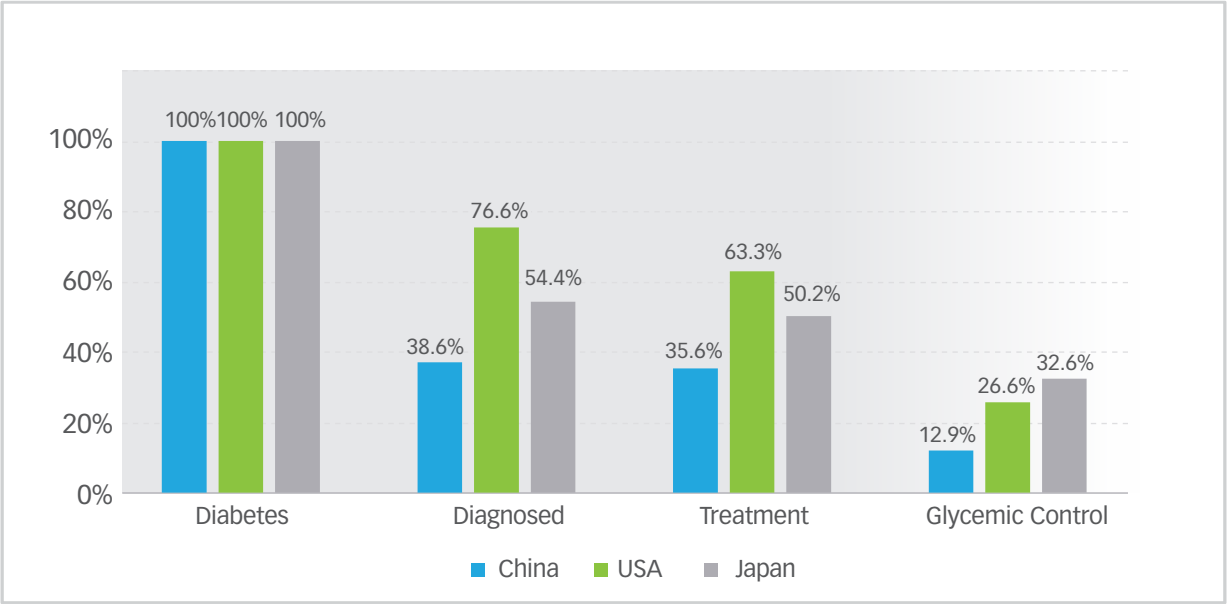
Projected Change in Countries with Large Diabetic Population (20-79 years), 2015 and 2040



There are significant gaps in diabetes treatment in China. According to the CDC 2013 Report on Chronic Disease Risk Factor Surveillance in China[4], only 38.6% of patients are diagnosed, with a treatment rate of 35.6%. Among the patients receiving treatment, only 36.3% are properly controlling their blood glucose levels. In other words, 12.9% of patients are receiving appropriate treatment. The urgent need for early diagnosis and effective treatment will drive innovation and improvements in accessibility.

Compared with countries like the United States[6,] and Japan[1, 7,13,14], China[4] lags behind on rates of diagnosis and treatment. The lower the rate of proper diagnosis and treatment, the greater the burden placed on health care expenditures.

The Challenge of Diabetes



Accessibility to Diabetes Treatments

A report[8] done by Boston Healthcare indicated that China has clinical guidelines for diabetes treatment similar to international standards, which is an important disease management tool for ensuring appropriate interventions across the continuum of diabetes care. However, guidelines may not be consistently followed, either due to a lack of physician education or availability of certain therapies.

In particular, while many diabetes therapies are available to Chinese patients, restrictions exist which limit access to these medicines and many newer medicines are not reimbursed at all. Reduced access to diabetes therapies can result in long-term increases in morbidity and mortality, and can significantly impact the utilization of health resources for patients, families and the government.

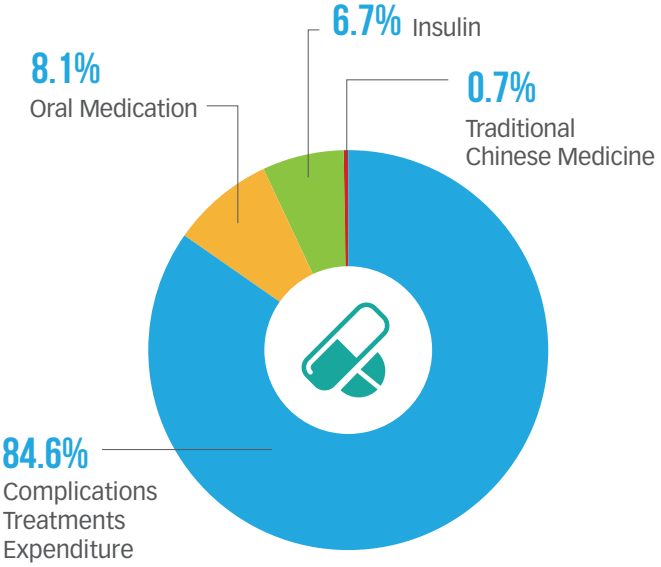
For example, Type 2 diabetes is a progressive disease which means that medications initially effective at controlling the patient's blood glucose may lose efficacy over time. When this occurs, access to additional therapies is critical to maintaining diabetes control.

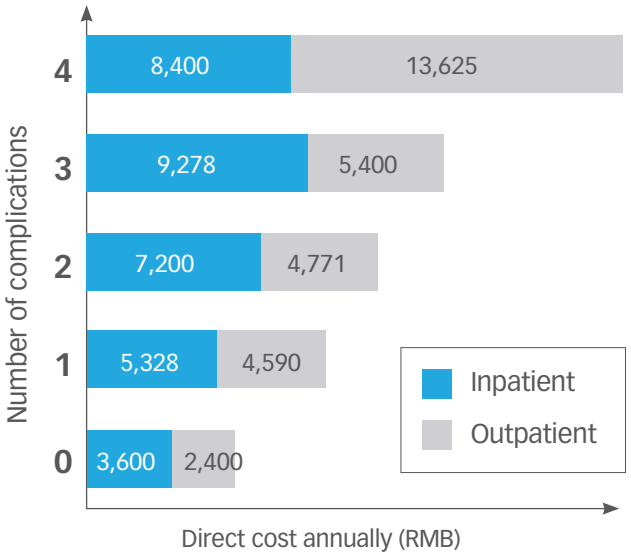
As the prevalence of diabetes increases in China, so too will the number of patients that have diabetes-related complications or co-morbidities. Without access to medications to maintain control over diabetes, patients are likely to suffer from further progression of the disease and complications.

Economic Burden of Diabetes

A survey[9] conducted in one Chinese province showed that, over 84.6% of diabetes-related health expenditures are the costs of treatment for serious complications, including in-hospital and surgery expenses.

Another survey[10] showed that the fewer complications experienced by diabetes patients, the fewer costs they will incur.





Innovative medications have helped to reduce length of hospitalization and chances for serious complications. According to IDF estimates[1], diabetes-related health expenditures in China will reach 72 billion USD by 2040 increasing from 51 billion USD in 2015, but a Health Affairs report[12] notes that improved adherence to diabetes medications could also result in 8.3 billion USD of potential annual savings.

The Impact of Innovative Drugs Can Create Significant Savings

less annual cost for diabetic medical expenditures

fewer emergency room visits

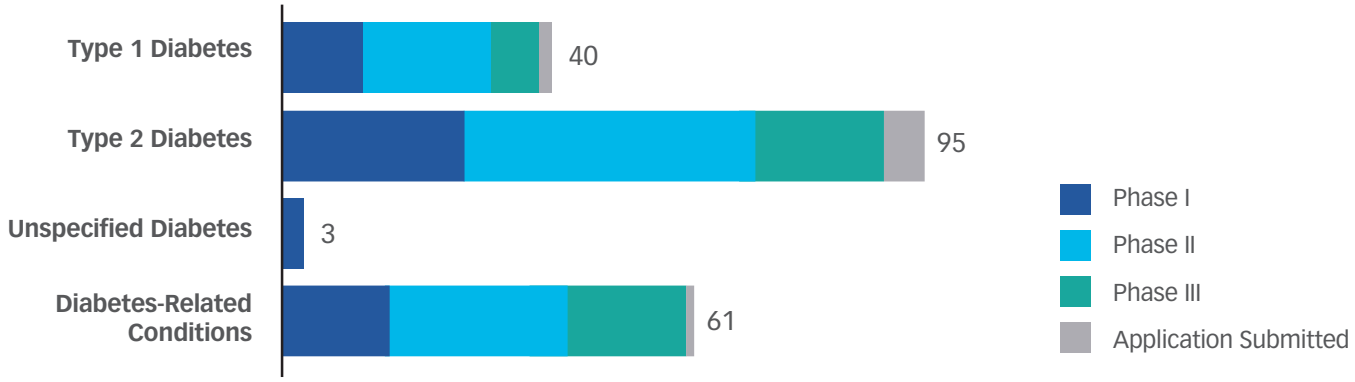
reduce death caused by diabetes and it's complications

Diabetes Medicines in the Pipeline

Medicines in development

Innovative drugs[11] for treatment of diabetes and serious complications are designed to improve glucose-dependent insulin secretion, inhibit an enzyme linked to diabetic neuropathy, and stimulate and enhance the regeneration of insulin-producing cells. The medicines in the pipeline today offer hope of reducing the human toll and economic costs of diabetes.

Clinical Trial Status of Diabetes Medications



According to an industry report[11], there are 171 diabetes medicines in development for type I and II diabetes and diabetes-related conditions, such as chronic kidney failure and painful diabetes neuropathy. All of the medicines are in clinical trials or awaiting review by the U.S. FDA.

Medicines in Development for Diabetes

Global Actions and Recommendations

The World Health Organization's NCD Global Action Plan[11] 2013–2020 includes several objectives and voluntary global targets confirmed by the signing countries.

1	To raise the priority accorded to the prevention and control of noncommunicable diseases in global, regional and national agendas and internationally agreed development goals, through strengthened international cooperation and advocacy.
2	To strengthen national capacity, leadership, governance, multisectoral action and partnerships to accelerate country response for the prevention and control of noncommunicable diseases.
3	To reduce modifiable risk factors for noncommunicable diseases and underlying social determinants through creation of health-promoting environments.
4	To strengthen and orient health systems to address the prevention and control of noncommunicable diseases and the underlying social determinants through people-centred primary health care and universal health coverage.
5	To promote and support national capacity for high-quality research and development for the prevention and control of noncommunicable diseases.
6	To monitor the trends and determinants of noncommunicable diseases and evaluate progress in their prevention and control.

Voluntary Global Targets

The International Diabetes Federation also set a goal[1] for the near future: preventing type 2 diabetes by increasing access to essential medicines and suppliers. Similar to the 2020 goal set by the WHO, the IDF aims to reach 80% availability of essential medicines in both public and private facilities.

A **25%** relative reduction in risk of premature mortality from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases.

Halt the rise
in diabetes and obesity.

An **80%** availability of the affordable basic technologies and essential medicines, including generics, required to treat major noncommunicable diseases in both public and private facilities.

In accordance with China's NCD goal for 2025, RDPAC recommends that the government take action to enhance primary healthcare and accelerate new drug approvals and the accessibility in impoverished areas. For patients already suffering from diabetes, RDPAC encourages more exercise and adherence to blood-glucose control medications.

Reference

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ABOUT RDPAC

Under the China Association of Enterprises with Foreign Investment (CAEFI), the R&D-based Pharmaceutical Association Committee (RDPAC) is a non-profit organization made up of 38 member companies with pharmaceutical R&D capability.

Till now, the member companies have 49 plants and 31 R&D centers. They invest over RMB 8 billion per year in R&D in China.

The Chinese government, local companies and RDPAC members share a similar vision to see China become a leading global innovation partner. RDPAC welcomes the opportunity to continue to partner with the government to reach our joint aspiration for the benefit of Chinese patients.

OUR VISION

HEALTHIER CHINA THROUGH INNOVATION

To be a valued partner in delivering the "Healthy China 2030" goal to improve the health and quality of life of people in China:

- Provide our high-quality/ innovative healthcare products and services in a socially responsible and commercially viable manner;
- Commit to securing patients timely access to innovative & high quality drugs;
- Achieve the highest standard of integrity for ethical research and business practice;
- Contribute to the growth of the biopharmaceutical sector in China;
- Support the development of a sustainable healthcare system in China.

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