An Introduction of the Work of Non-communicable Chronic Disease Control and Prevention in Shenzhen
Part 1. Construction of the control and prevention net
A profile of Shenzhen

- **Administration divisions:** 6 administrative regions (Luohu, Futian, Nanshan, Baoan, Longgang, Yantian), 2 precincts (Guangming & Pingshan), 55 residential districts, 643 residents’ committees; 2020 sq.km;

- **Population:** permanent population of 2010 is 10.3579 million, and registered population is 2.28 million.

- **Economy:** GDP of 2010 has reached 951.1 billion yuan.

- Average life expectancy of residents is 76.75 years.
In 1989, Shenzhen Institute for Dermatosis was combined with Shenzhen Institute for Lung Disease to set up Shenzhen Institute for Chronic Disease Control.

In 1996, NCD control was added to the function of the institute.

In 2008, Shenzhen Institute for Chronic Disease Control was formally renamed as Shenzhen Center for Chronic Disease Control.
All chronic disease control facilities are facilities of independent legal entities!
As a professional public health facility, Shenzhen Center for Chronic Disease Control involves **prevention, control, diagnosis and treatment, management, surveillance, testing, supervision, research and teaching** in a whole, serving as an important part of the public health system in the city.
The Three-level Network System of Chronic Disease Control in the City

- **HPFPC**
- District-level health bureau
- Health care facilities in jurisdictions
- **Shenzhen Center for Chronic Disease Control**
- District-level Institute for Chronic Disease Control
- Community Health Service Center

- **566** communities are covered by the work of NCD control in the city.
- **126** STD surveillance facilities in the city, and **38** standardized lab for STD.
- There are **52** secondary supervision sites and **1287** tertiary supervision sites for tuberculosis.
## Function of the Three-level network system

<table>
<thead>
<tr>
<th>Shenzhen Center for Chronic Disease control</th>
<th>District-level Institute for Chronic Disease Control</th>
<th>Community Health Service Center</th>
</tr>
</thead>
<tbody>
<tr>
<td>Make plans, protocols and work standard and organize to implement.</td>
<td>Organize to implement prevention and control, diagnosis and treatment and management in jurisdictions</td>
<td>Implement related control strategy and serve the residents directly.</td>
</tr>
<tr>
<td>Train, supervise and provide technique support and guidance</td>
<td>Promote chronic disease control strategy and provide technique service in jurisdictions</td>
<td></td>
</tr>
<tr>
<td>Develop applied research and develop suitable new technique</td>
<td>Properly develop applied research and apply the new technique</td>
<td></td>
</tr>
<tr>
<td>Organize evaluation and check-up</td>
<td>Accept the evaluation and check-up</td>
<td></td>
</tr>
</tbody>
</table>
There are 892 workers in all chronic disease control facilities in the city in 2010.

### Number of staff in all levels of chronic disease control facilities in 2010

<table>
<thead>
<tr>
<th>Staff</th>
<th>Municipality-level</th>
<th>Futian</th>
<th>Luohu</th>
<th>Baoan</th>
<th>Longang</th>
<th>Nanshan</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>permanent Staff</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>582</td>
</tr>
<tr>
<td>Employee</td>
<td></td>
<td>121</td>
<td>161</td>
<td>68</td>
<td>124</td>
<td>56</td>
<td>52</td>
</tr>
<tr>
<td>Temporary</td>
<td></td>
<td>9</td>
<td>12</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>employee</td>
<td></td>
<td>44</td>
<td>0</td>
<td>60</td>
<td>73</td>
<td>61</td>
<td>49</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>174</td>
<td>173</td>
<td>130</td>
<td>197</td>
<td>117</td>
<td>101</td>
</tr>
</tbody>
</table>

**Total:** 892
<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Proportion of staff with a bachelor degree or above (%)</th>
<th>Ratio of professional title (senior: intermediate: primary)</th>
<th>Ratio of staff profession (public health : clinical medicine)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Futian</td>
<td>57.3</td>
<td>1: 1.7: 3.9</td>
<td>1: 0.3</td>
</tr>
<tr>
<td>Luohu</td>
<td>56</td>
<td>1: 1.2: 1.4</td>
<td>1: 0.3</td>
</tr>
<tr>
<td>Nanshan</td>
<td>68.1</td>
<td>1:1.1:1</td>
<td>1: 0.7</td>
</tr>
<tr>
<td>Baoan</td>
<td>57</td>
<td>1: 0.7: 1.3</td>
<td>1: 2.1</td>
</tr>
<tr>
<td>Longgang</td>
<td>34</td>
<td>1: 0.9: 1.8</td>
<td>1: 1.5</td>
</tr>
<tr>
<td>Average of all districts</td>
<td>54.5</td>
<td>1: 1.1: 1.9</td>
<td>1: 1</td>
</tr>
<tr>
<td>municipality</td>
<td>64</td>
<td>1: 0.8: 0.9</td>
<td>1: 0.5</td>
</tr>
</tbody>
</table>
Constitution of Talent in the Chronic Disease Control System

- **Ph.D:** 4%
- **Master:** 13%
- **bachelor:** 39%

- Bachelor: 39%
- Master: 13%
- Ph.D: 4%
- High school graduate or below: 26%
- Junior college: 39%
- 大专: 18%
- 本科: 39%
Constitution of Talent in My Working Place

- **Ph.D 11(12%)**
- **Master 15(19%)**
- **Bachelor 22(28%)**

- High school graduate or below, 25, 31%
- Junior college, 9, 11%
- Bachelor, 22, 28%
- Master, 15, 19%
- Ph.D, 11, 12%
Part 2. Main Working Task

- Surveillance of NCD
- Integrated prevention and treatment of oral disease
- Basic public health management items hypertension and diabetes management
- Exploring project of proper technique for NCD
- Scientific research
1. **NCD Surveillance**

- Surveillance of malignant tumor and brain stroke
- Injury Surveillance
- Epidemiological investigation of NCD and related risk factors
- Surveillance of residents’ nutrition and health
(1) Registration of New Cases of Malignant Tumor and Brain Stroke

- The tumor registration and report mechanism was implemented in 1998, which established the system of tumor registration and report that covers the whole population.
- In 2003, the stroke registration and report system that covers the whole population was established referring to the WHO MONICA project.
- In 2003, joined in the national tumor registration network.
- In 2006, became a member unit of National Tumor Registration Center and International Association of Cancer Registration
- In 2008, was included into the central government transfer payment project.
- In 2011, 9007 cases of malignant tumor and 10930 cases of brain stroke were reported.
(2) **Surveillance of injury and product injury**

- The “national hospital injury surveillance” was initiated in January 2004, and 3 sentinel points of hospital surveillance were set up in the emergency room of hospitals at all levels in Shenzhen respectively.
  - Peking University Shenzhen Hospital—municipality level
  - Shenzhen Nanshan Hospital—district level
  - Gongming Hospital—neighborhood level
- In January 2008, on the basic of the departed work, product injury surveillance of State Quality Inspection Administration was added, which made the facility become one of the two facilities as the first batch of product injury surveillance pilot sites nationwide.
- In 2010, national injury surveillance live conference was held in Shenzhen.
(3) Epidemiological Investigation of NCD and Related Risk Factors

- The first epidemiologic investigation of NCD in Shenzhen was initiated in 1997. 16 investigation sites were sampled, 9200 participants were investigated and the book *Epidemiology Research of Chronic Non-infectious Disease in Shenzhen* was published.

- After 12 years, the second epidemiologic investigation of NCD in Shenzhen was initiated in June 2009, and it took 2 months to finish the whole investigation including 73 community investigation sites and 8760 participants.

- It is the hallmark of the initiation of NCD integrated control in Shenzhen.
(4) Nutrition and Health Condition Surveillance

In 2009: project of central government transfer payments

In 2010: Nutrition and health surveillance in large cities nationwide

In 2011: Nutrition and health surveillance in Shenzhen
2. Community Prevention and Treatment for Oral Disease

- The steering group for odontopathy control was established in June 2002. In the same year, the National Odontopathy Prevention Group formally approved Shenzhen as one of the demonstration zones of national community oral health service. The health department of Guangdong Province then included Shenzhen as the demonstration city for provincial odontopathy control.

- In 2009, our city led the Dental caries prevention work in Guangdong province by providing free Pit and Fissure Sealant of permanent teeth for 7-year-old students, which expanded oral disease control in school from secondary prevention to primary prevention.
Prevalence of dental caries of permanent teeth and filling proportion in pilot schools of Shenzhen, 2003–2010
Integrated Prevention and Treatment for Hypertension and Diabetes

Number of community health service centers that have developed community integrated control for hypertension and diabetes
3. Basic public health --- health management items

hypertension and diabetes management

![Graph showing the increase in hypertension and diabetes management from 1998 to 2011. The graph illustrates a significant rise in both hypertension and diabetes, with hypertension starting at a lower baseline and diabetes showing a more gradual increase.](image-url)
4. **NCD Control Project**

1. Diabetes education at community hospital level
2. Nutrient value project—Nutrition education for residents
3. Key technique for maintaining healthy body weight and hypertension management
4. Nationwide healthy life style campaign
5. Establishment and evaluation of healthy behavior promoting system for diabetes
6. Health management
7. 100% smokeless environment promoting project
8. Self-management for NCD
(1) WDF “Diabetes education at community hospital level” project

- Shenzhen became a pilot city for the exploring project of Diabetes education at community hospital level in 2005.

- Objective: according to the responsibility of general hospitals and community health service centers, explore and establish the system of Diabetes education at community hospital level in hospitals.

- Up to 2008, 545 diabetes patients in Shenzhen have been included in management.
Community nutrient value project

Trained 53 community doctors and covered almost 30 thousand households in the city.

Follow-up by telephone shows that 76.7% responders have received the health education, have known the quantity of proper salt and cooking oil intake and have already used the tool.
(3) Key technique for maintaining healthy body weight and hypertension management
In 2008, Shenzhen set up the leader group and office of nationwide healthy life style campaign. The vice director of Shenzhen HPFPC Dan Zhang was nominated as the group leader, and the director of Shenzhen Center for Chronic Disease Control Xiaoli Liu was nominated as the director of action office. At Oct. 17th, 2008, the launching ceremony of “Nationwide Healthy Life Style Campaign in Shenzhen” was hold.

In 2011, won third -class prize of Nationwide Healthy Life Style Campaign work of Guangdong Province.
(5) NIH “Establishment and evaluation of healthy behavior promoting system for diabetes” project

- Cooperated with Boston University and The Chinese University of Hong Kong, this project takes doing regular physical activity and preventing diabetes as the breakthrough point.

- Introduce the Telephone Linked Communication system developed by Boston University.

- Conduct a RCT that would last for half a year for volunteers with a genetic risk of diabetes to evaluate the feasibility and effectiveness of the system used in the local area.
(6) 100% Smokeless environment promoting project
I am healthy, I am managing!
(8) Self-management for NCD

- 70 hypertension self-management groups were set up in Shenzhen in the year 2011
- Will expand to 170 hypertension self-management groups in 2012

Scene of self-management training of municipality-level

A member of self-management group in Haitao community health service center of Yantian district were being interviewed
5、Working Effect and Scientific Research

National on-the-spot conference of NCD control in 2010 (2010.02)
Provincial On-the-spot Conference of NCD Control in 2010 (2010.03)
The vice minister of Ministry of Health Li Yin investigated the construction of NCD prevention and treatment system (2010.03)
National demonstrations zones of NCD integrated control

Baoan district

Yantian district
- Discipline of NCD control and prevention was titled as the key medical subject in 2011
- Take charge of three projects sponsored by National Natural Science Foundation and many province and municipality level projects
- Participated in many supporting science and technology projects
Thank you!