Identifying and Addressing Health Inequalities in Urban Settings

Prof. David Napier
Global Academic Lead
Cities Changing Diabetes
Worldwide, 437 million people are currently living with diabetes.

- If diabetes were a country...
- By 2060 -> 642 million

1. China 1,367,485,388
2. India 1,251,695,584

437,000,000
Today, two thirds of people with diabetes live in cities

2017
65%
OF PEOPLE WITH DIABETES LIVE IN URBAN AREAS

2045
75%
OF PEOPLE WITH DIABETES WILL LIVE IN URBAN AREAS

References
Cities are complex, in flux, and often changing—meaning that diverse drivers can affect illness and its lived experience.
WHO Health-in-all-Policies Framework

1) Housing
2) Water and Sanitation
3) Transportation
4) Exposure to chemicals and their mixtures
5) Health Communication
6) Occupational Factors
7) Physical Activity
8) Food Production and Distribution
9) Physical, Natural, and Social Environments
The Health-in-all-Policies Framework

The Framework and Diabetes

1) Housing
- limited movement; dangerous

2) Water and Sanitation
- drinking water; food safety

3) Transportation
- long commuting for work; no exercise
2014: The *Cities Changing Diabetes* programme

A first-of-its-kind partnership platform

Global Partners

---

**Academic excellence**

*conduction research that addresses real world problems*

University College London (UCL) is the global academic lead in Cities Changing Diabetes. UCL works with local research partners in each city, investigating what drives diabetes in cities.

---

**A world-leading institution**

*in diabetes care and prevention*

As a partner in Cities Changing Diabetes Steno Diabetes Center draws on their experience in creating innovative and sustainable approaches to tackling diabetes at the community level.

---

**At the forefront of one of today’s great health challenges: diabetes**

Novo Nordisk is committed to playing a part in the global fight against diabetes, and Cities Changing Diabetes is at the heart of this commitment.
The world's largest corporate sustainability initiative

A call to companies to align strategies and operations with universal principles on human rights, labour, environment and anti-corruption, and take actions that advance societal goals.
The grand challenges businesses face when promoting good health and wellbeing (SDG3)
an EIU discussion paper for United Nations Global Compact

24 January 2018
Cities Changing Diabetes: Cross-Sector Partnerships.

- **Approach:** engage different cross-sector partners to address the diabetes and obesity challenge.
Goals of programme

Mapping
To discover actionable insights into health vulnerabilities among at-risk populations.

Sharing
To create opportunities for dissemination of findings through new knowledge networks.

Acting
To work with local and global advocates to reverse the diabetes and obesity epidemics.
Understanding the Impact of Lifestyle: The ‘Rule-of-Halves’ Analysis

OF THE ESTIMATED
437 MILLION
PEOPLE WITH
DIABETES...

ABOUT 50% ARE
DIAGNOSED...

OF WHOM
ABOUT 50%
RECEIVE CARE...

OF WHOM ABOUT
50% ACHIEVE
TREATMENT
TARGETS...

OF WHOM ABOUT
50% ACHIEVE DESIRED
OUTCOMES, MEANING THAT
ONLY AROUND 6% OF PEOPLE WITH
DIABETES LIVE A LIFE FREE FROM
DIABETES-RELATED COMPLICATIONS.
Understanding the Diabetes Challenge in Each Partner City

Grey pillars are estimated based on the general Rule of Halves due to lack of data.
Brief Overview of the Global Cities Changing Diabetes Research Programme

20 partner cities

Partner cities
Beijing · Beirut · Buenos Aires · Copenhagen · Hangzhou · Houston · Jakarta · Johannesburg · Koriyama · Leicester · Madrid · Mérida · Mexico City · Milan · Rome · Shanghai · Seoul · Tianjin · Vancouver · Xiamen
# The Rule-of-Halves: Preventing, Managing, and Treating Diabetes

Of the estimated 437 million people with diabetes...

## Social and Cultural Domain

- **About 50%** are diagnosed...
- **Of whom** about 50% achieve desired outcomes, meaning that only around 6%...

## Bio-social Domain

- **About 50%** receive care...
- **Of whom** about 50% achieve treatment targets...
- **Of people with diabetes** live a life free from diabetes-related complications.

## Biomedical Domain
The Rule-of-Halves:
Taking into Account Obesity and Overweight

- 2.0 Billion Overweight
- 650 Million Obese

Diagram showing estimated diabetes population, diagnosed diabetes population, and those in treatment compared to those attempting to achieve treatment targets and desired outcomes.
The Need for a New Evidence Base: The Problem

Social and cultural factors are…

Complex + Locally diverse + Difficult to identify and study = Evidence Gap
Vulnerability Assessment Tool

- What are the environmental, social, psychological, and cultural risk factors for urban diabetes?
- Who is most vulnerable to the negative effects of these risk factors, and how can those individuals and groups become less vulnerable?

Vulnerability: being in a situation (over a period of time) in which a distinct set of cultural, social, and biological risk factors come together to make it more likely than not that a person will develop diabetes, or that the person will be living with diabetes-related complications.
Diabetes Vulnerability Assessments

- **Formal Domain**
  - service utilization patterns and barriers

- **Community Domain**
  - community structures, actions, and adaptations

- **Vulnerability Domain**
  - external and internal stressors
### Mapping complexity

#### Case Definitions

<table>
<thead>
<tr>
<th>Biological Factors</th>
<th>Social Factors</th>
<th>Geographical Factors</th>
<th>Cultural Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Education level</td>
<td>Character of neighbourhood</td>
<td>Food culture</td>
</tr>
<tr>
<td>Familial history</td>
<td>Access to care</td>
<td>Environmental givens</td>
<td>Attitude to physical activity</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>Access to resources</td>
<td>Distance work-home</td>
<td>Trust in government/health care</td>
</tr>
<tr>
<td>BMI</td>
<td>Employment status</td>
<td>Local Infrastructure</td>
<td>Body image and stigma</td>
</tr>
<tr>
<td>Blood glucose levels</td>
<td>Health insurance</td>
<td>Access to water, transportation, etc.</td>
<td>Access to food/economic status</td>
</tr>
<tr>
<td>General health (co-morbidities, chronic vs. acute, etc.)</td>
<td>Socio-economic status</td>
<td></td>
<td>Attitude towards large body size</td>
</tr>
<tr>
<td>Living situation</td>
<td></td>
<td></td>
<td>Peer appearance</td>
</tr>
<tr>
<td>Level of social support</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2 Hours
per interview

1,480 hours
collectively spent
on conducting
interviews

740 face-to-face
interviews

75 fieldworkers
in five cities, across
four continents
Goal of the Diabetes Vulnerability Assessment

- To understand how vulnerability emerges in a particular city
- To identify new and measurable ‘case definitions’ of diabetes vulnerability
- To bring ‘lived experience’ to the level of evidence
Example of CCD Partner Findings

- Houston: that groups at highest risk for diabetes are not just the poor, but affluent and well-educated professionals living commuter lives. Our partners also discovered the power of faith-based organizations in managing diabetes and addressing obesity: to date 50 Muslim, Hindu, and Christian leaders have graduates from their diabetes ‘Train the Trainer’ peer-to-peer program.

- Shanghai: that those most at risk include middle-class families who consciously conceal early symptoms because of social stigma and the fear of losing their job or spouse.

- Vancouver: that food insecurity means unhealthy food for more than 850,000 Canadians who rely on food banks, leading the city to initiate on-site counseling at food banks.

- Copenhagen: that alienated middle-age men carry a very high and unequal diabetes burden, even in a country where healthcare is free and healthcare registration mandatory. Community-based social clubs have been established to bring those living in isolation together to share their diabetes challenges.
Goal of Programme

To work with cities across the globe to reverse the diabetes epidemic.
Thank you.