Constructing Care Cascades only for Hypertension and Diabetes Management Using Health Big Data in China: A Cross-Sectional Study

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BACKGROUND:

China's National Essential Public Health Service Package (NEPHSP) aims to promote health for all at the primary health care level and includes a focus on hypertension and type-2 diabetes mellitus (T2DM). However, there are limited contemporary data to quantify the care cascades of hypertension and T2DM in primary health care.

METHODS:

- **Cross-sectional study**
- **Using routinely collected data**
- **Four sites in mainland China**

1.Data sources and processing

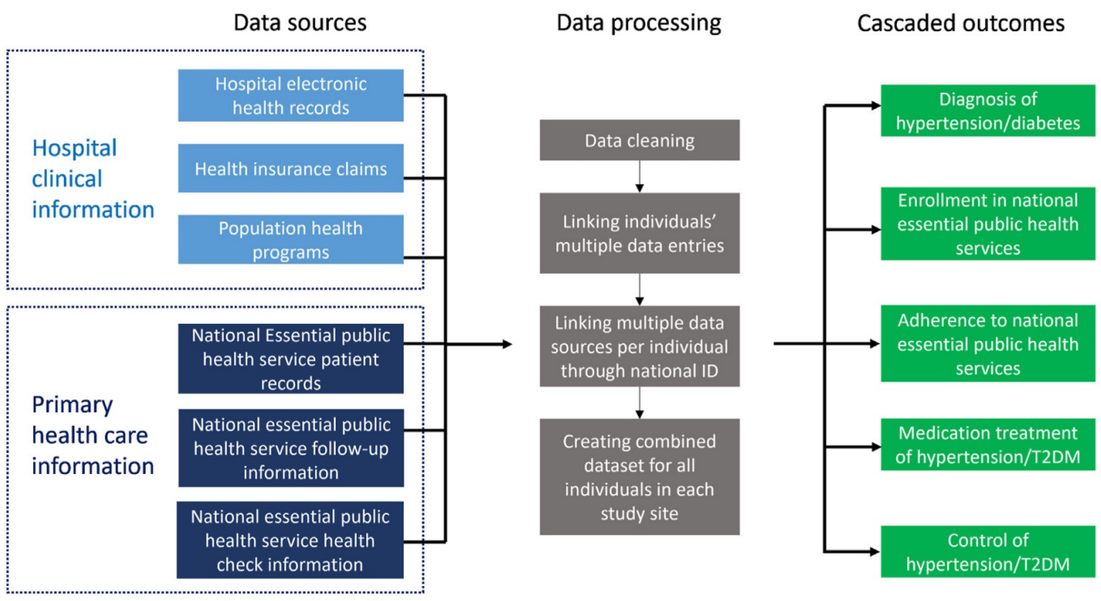


Figure 1: Data sources and processing to generate cascaded outcomes for hypertension and type-2 diabetes management.

2. Care cascade measures

- **Diagnosed:** defined by the clinical diagnosis of hypertension and/or T2DM in either the local primary health care information systems, hospital electronic medical records, or health insurance claims.
- **Enrolled:** being documented as an enrolled resident in the NEPHSP.
- **Treatment:** Taking medications for hypertension and type 2 diabetes
- **Controlled:** Based on the residents' latest quarterly follow-up visits in the NEPHSP. For people with hypertension, it was defined as blood pressure lower than 140/90 mmHg for people aged 35–64 years, and 150/90 for those aged 65 years or older.11 For people with T2DM, it was defined as a fasting plasma glucose lower than 7.0 mmol/L**.**

RESULTS :

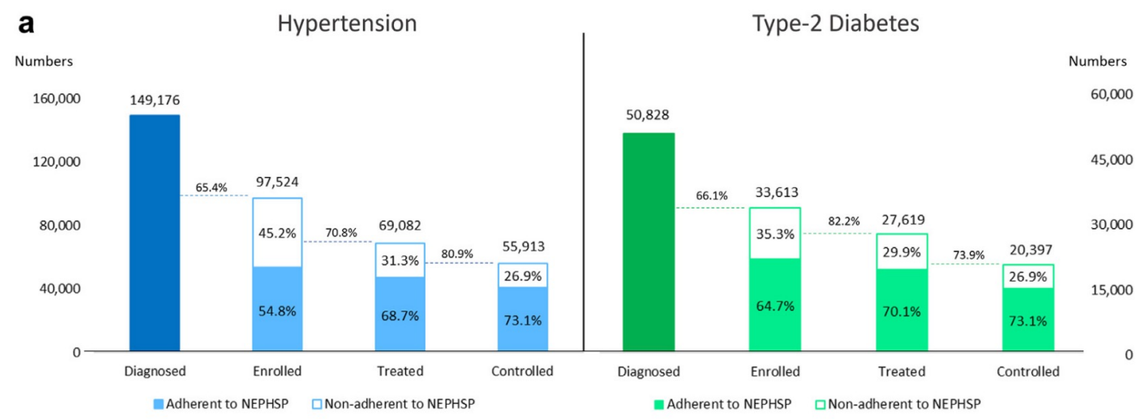
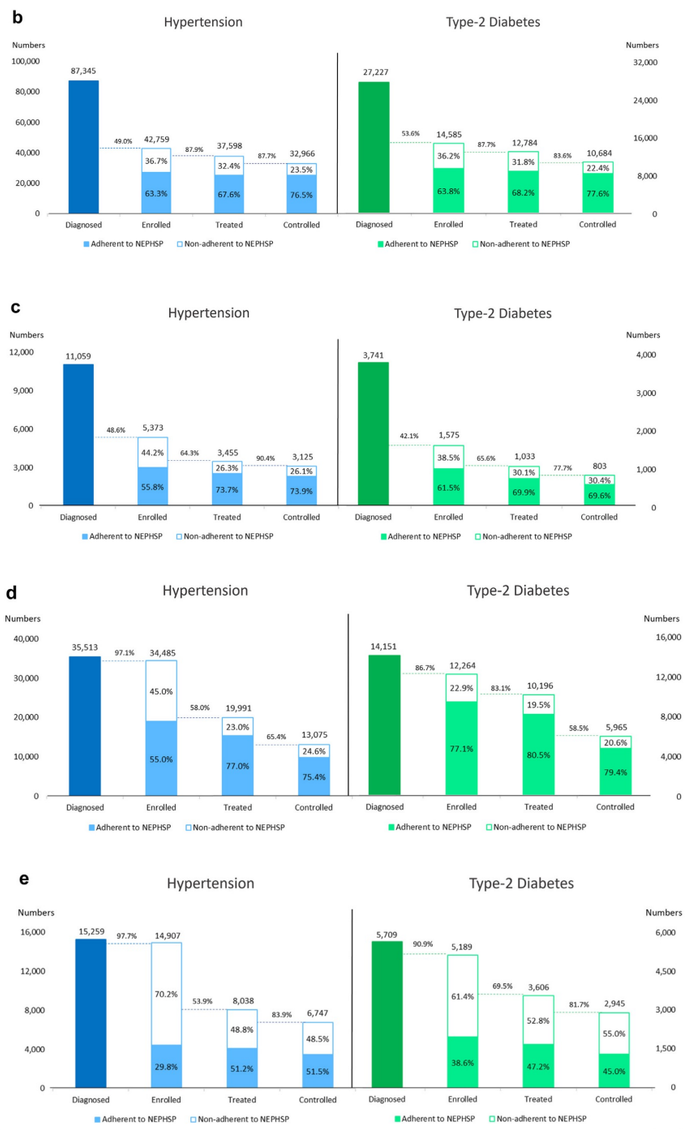


Figure 2: Care cascades for hypertension and type-2 diabetes in each study site, separately.

	hypertension (%)	T2DM (%)
Diagnosis rates	46.0	45.6
Enrolment rates of those diagnosed	65.4	66.1
Treatment rates of those enrolled	70.8	82.2
Control rates of those treated	80.9	73.9
Adherence rates to the NEPHSP	54.8	64.7

Care cascades varied considerably across different study sites



DISCUSSION :

- Presented an example of using routinely collected data sources to understand gaps in care.
- The participation and adherence rates of the NEPHSP were generally low, reflecting the challenges faced during policy implementation.
- It is necessary to pay attention to and optimize the health big data system, so as to more effectively support the evaluation and improvement of public health policies.

Interpretation :

Detection and control rates for hypertension and T2DM are suboptimal in these four regions of China. Further strategies are needed to improve people's enrolment in and adherence to the NEPHSP and strengthen care delivery processes. Of note, our estimations of the diagnosis rates for each region are based on national level large epidemiological data. The interpretation of these data needs caution due to potential bias caused by regional variations.

"Strengthening Access to the Essential Public Health Services Package for Hypertension and Diabetes care In Rural China using E-Health – SAPPHIRE"

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