Primary Care in China
Introduction of China

- China has a population of 1.3 billion (about 22% of the world’s population) with over 160 cities over one million people spread across 31 provinces (27) and autonomous regions (4).
Barefoot Doctors

• In the 1930s, the Rural Reconstruction Movement had pioneered village health workers trained in basic health as part of a coordinated system, known as “barefoot doctors”, who served at the grass-roots level in China.
<table>
<thead>
<tr>
<th>Year</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950s-late 1970s</td>
<td>Setting up of “barefoot” doctors in rural China, one of the earliest forms of primary care network in post-communist China</td>
</tr>
<tr>
<td>1980s</td>
<td>“Healthcare reform”: decentralized power for hospitals responsible for own administration and finance</td>
</tr>
<tr>
<td>1990s</td>
<td>High tech, subspecialty medical care- over investigation; over treatment and poly-pharmacy</td>
</tr>
<tr>
<td>2009</td>
<td>17th People’s Congress, Reform of the Medical and Health Systems whereby “a system of GPs” to take on the role of first-contact care providers and gatekeepers to the 2nd/3rd institutions</td>
</tr>
<tr>
<td>2011</td>
<td>32,812 community health centres (CHCs) in the cities and 37,374 township health centers employing over 100,000 health professionals</td>
</tr>
</tbody>
</table>

GPs currently accounted for 5.3% (~145,000) of all doctors in China.
### Planned health institutions in China in 2020

<table>
<thead>
<tr>
<th>Institutions</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Hospitals</td>
<td>100</td>
</tr>
<tr>
<td>Provincial hospitals</td>
<td>200</td>
</tr>
<tr>
<td>Regional hospitals</td>
<td>300</td>
</tr>
<tr>
<td>County hospitals</td>
<td>4000</td>
</tr>
<tr>
<td>Township hospitals/ CHCs</td>
<td>50,000</td>
</tr>
<tr>
<td>Village CHCs</td>
<td>600,000</td>
</tr>
</tbody>
</table>
“There is a shortage of 12 million medical staff in China”, according to Mr. Chen Zhu, Minister of National Health & Family Planning Commission.

Only 5.1% of China’s GDP is spent on medical expenditure in 2012, well below the average of 6.2% in low income countries.
Problems on universal coverage & commitment to the new reform

- At policy level, lots of overlaps and wastage in resources as different schemes managed by different ministries and no mutual access to care across schemes in different localities.
- Roles of both public and private institutions and how this balance is to be maintained.
- Insufficient reimbursements; the burden on individuals to pay upfront especially common in secondary and tertiary hospitals; dependence on regional issues such as management, financing inequality and social security as well as sustainability in the context of an aging population, remain.
Patient-doctor Disputes

• Number of patient-doctor disputes in China increasing at an alarming rate of 11% per year since 2001 with 228,000 cases reported by Mediation Committee for Medical Disputes between 2010-13 (3) and in Beijing alone 178 million Yuan (£1=10Yuan) compensation was made by the hospitals in the similar period.

• The increase is not only in number, but also in severity: According to the National Health and Family Planning Commission (NHFPC) of China, there were serious attacks on the doctors resulted in seven deaths in 2012 alone (5) amounted to about half of the total number of the death in the previous nine years.

• What was even more striking is that, following the incident of Dr. Wang Hao when this 28-year-old intern in the first affiliated Hospital of Harbin Medical University was stabbed to death with three other doctors injured by a teenager patient on 23 March 2012, a poll showed 70% of the respondents cheered the death (6).
China’s Future Healthcare Workforce

• Serial surveillance conducted by the Chinese Medical Doctors’ Association in the past years shows a rapid decrease in the percentage of doctors who wish their children to become doctors to a record low of >7% in 2011, while those who against their children to join the medical force increased to 78%.
Primary care doctors’ training model in China

• Full time 3 year training: 5+3
• On-job training
• Rural (clinical assistant physicians): 3+2
• Re-training for rural GP stations
• Training for all supporting services e.g. x-ray, USS; ECG; lab etc.
• Trust: CHCs—poorly equipped and of low technology; GPs poorly qualified

• Healthcare systems:
  – Patients have freedom to self-refer to any providers, although nowadays social health insurance programmes would limit coverage for providers outside the given locality
  – Often CHCs are set up by and affiliated to the district-level hospitals and the staff bonuses are related to the number of referrals made

HKU-SZ Hospital
FMPC Dept, HKU-SZ Hospital

- GP clinic
- Chronic disease mgt
- Post-natal care
- Health assessment
- IMC
Stepping out of the box: Decentralizing integrated HIV and STI services to community health centers in China
Rationale

- In 2008, the Chinese Government “re-established” an extensive primary care network throughout China. As of 2011, there were 32,812 community health centers (CHCs) in the cities and 37,374 township health centers employing over 100,000 health professionals.

- However amongst many problems with the rapid expansion of primary care health system, there lies “trust” issue by the general public which reduces these CHCs as “dispensers” and public health physicians.

- A novel immunochromatographic point-of-care rapid syphilis, chlamydia and gonorrhea PCR tests are now available in clinical settings providing an opportunity to undertake population-based STI screening in primary care settings.

- To ride on the culture of heavy dependence on technology and WHO’s advocacy on the expansion of HIV/STI testing amongst the key population, it is thought CHCs may be in a position to offer this service, and eventually to provide diagnosis, treatment and management of these diseases.
Aims & Objectives

This study aims to prevent and control HIV/STI by increasing the testing of such in both key and general populations through the CHC network in China. Specifically, we will:

• Conduct needs assessment and capacity building to equip the CHC doctors and nurses as well as the clinics themselves to carry out rapid HIV/STI tests and offer treatment for STIs;

• Assess the level of stigma against HIV and key populations among CHC staff, and to build capacity of CHCs to provide a stigma-free environment and care for the key populations;

• Understand and meet the needs of the key populations in utilizing HIV/STI testing service in CHCs; and,

• Evaluate the effectiveness and cost-effectiveness of HIV/STI testing at CHCs to meet the above objectives.
Hypothesis

Essentially the null hypotheses of this study are that:

- Offering universal HIV and STI testing provided by CHCs will be at least the same (if not increase) HIV/STI testing and earlier diagnoses by general populations;
- Offering universal testing will normalize HIV and increase uptake of HIV testing by key populations; or
- Offering universal HIV/STI testing provided by CHC will at least the same (if not further enhance) earlier treatment (treatment uptake as a proxy measure).
Step 1: Primary care needs assessment

- A nationwide representative survey using stratified randomized sample will be conducted amongst the CHC medical professionals.

- In collaboration with Fudan University Department of GP and WHO West Pacific Office, invitations will be sent to all provincial offices who would then select CHCs according to the stratifications at the city and district levels.

- The capital city of each province and 2 district-level cities will be selected in each province, as well as two municipalities amounted to 20 cities altogether. 9 CHCs will be selected in each city (totally 180) in the ratio of urban area and suburb of each city 2:1.

All health professionals (including nurses and doctors) in CHCs with direct patient contact will be invited to participate in this survey.
Sample Size estimation

• If we considered the primary outcome of a health professional being willing to treat patients who are HIV-positive as 62%, using a sample size calculation of 2.5% margin error, 95% confidence level, a sample size of 1448 health professionals is needed as a minimum to detect any statistically significant differences.

• Taking account of cluster effect assuming an intra-cluster correlation of 0.05 based on previous studies, the sample size will be increased to 2340. Therefore, we plan to send out 3342 questionnaires for a 70% response rate.

(For example, Shanghai: there are 17 districts (8 urban areas and 9 suburbs) and 245 CHCs in Shanghai. 6 CHCs will be selected from the 8 urban areas randomly and 3 from the 9 suburbs areas. 20 questionnaires will be sent out to each CHC, amounted to 180 questionnaires.)
The survey will cover:

- Current clinical set-up, range of services and manpower;
- Community characteristics and patient demographics;
- Knowledge and attitudes of testing towards HIV/STIs in their clinics;
- Referral, secondary care support, and HIV/STI management in the locality;
- Attitudes and skills of providing healthcare for the key populations;
- Perceived needs of training and support required to provide HIV/STI screening for key populations; and,
- Ways and systems to promote and facilitate the planned HIV/STI services in CHCs.
Step 2: Key populations

• Another online survey will target the individual NGOs that provide health or advocacy services to the key populations in China through the list maintained by the WHO national office.

• Survey Monkey® will be used and a small remuneration will be provided for the NGO’s time. For each individual NGO, we will seek their opinion on:
  – Community characteristics and clients’ demographics;
  – Estimation of current HIV/STI testing status and known HIV cases;
  – Current HIV/STI service utilization and other clinical needs;
  – Perceived facilitators and barriers to have HIV/STI tested in CHCs; and,
  – Ways and systems to promote and facilitate the planned HIV/STI services in CHCs.
Step 3: (Cost-)Effectiveness of HIV/STI testing in CHCs in China

- A cluster-randomized controlled trial (RCT) will be conducted to test the effectiveness of HIV/STI testing for both general and key populations.
- Based on the data collected, trial sites of similar characteristics at city and township levels in 1-2 provinces of China will be randomly selected and allocated into one of the three arms:
  1) testing for general and key populations,
  2) for general populations only, and
  3) the control (usual) care group.

- For the intervention groups, training and guidance as well as funding and testing kits for setting up the service within CHCs will be provided. Online and continuous support of the clinical service as well as liaison and promotion of the new service with the key populations will be provided by the project coordinators. It is anticipated the intervention period lasts for one year and the primary endpoints would be HIV/STI testing rates especially in key populations.

- Process evaluations such as the number of HIV/STI screening conducted and cases referred as well as end evaluation of the number of positive HIV/STI cases finally diagnosed and treated in different populations will be used to measure the effectiveness of the RCT. The project coordinator will also randomly audit the trial sites to ensure quality control and collect views about the intervention onsite throughout the study. In addition, focus group discussions and surveys will be organized to evaluate the satisfaction from both the service providers and end-users. Unit cost will be carefully collected for the cost-effectiveness analysis at the end of the trial.
Comments & thoughts?

Thank You!