China Response to Syphilis

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Outline

• Historical aspect
• Epidemic
• Determinants
• Response
• Challenges

Syphilis “plague” (1945 -1950)

• Syphilis spread into China through India, first appearing in Guangdong and was originally named “Canton Boils” in Chinese.
• (*Canton is the old English name for Guangdong)
• Syphilis spread quickly in China due to the booming brothel business and the lack of monitoring.

Elimination (1950-1964)

Important Contributing Factors

1) Support from the leadership
2) Strong STIs control network established;
3) Free screening and treatment;
4) Mass treatment of FSW;
5) Strict migration control;

Beijing announced the elimination of syphilis nationally in 1964.

Vanished (1964-1979)

• Only sporadic cases reported
• Syphilis was even phased out of medical school textbooks during the 1960s

Guangdong province is located in the south east coast of China

Guangdong tower
Pearl river

Guangdong tower
Pearl river

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It’s estimated that there were 10 million STIs (mainly syphilis) cases in the post-liberation period. The estimated syphilis prevalence among key populations were: FSWs (Beijing) = 84% STD clients = 10% Minorities = 10% Some pastoral groups = 48% Urban residents = 5% Rural residents = 2%

Syphilis was even phased out of medical school textbooks during the 1960s
“I’m back!”

Resurgence of syphilis in 1979.

7.7  14.24  21.06  28.9  33.3  33.64

Incidence rate (1/100,000)

Year

Trend of national syphilis incidence rate during 2004-2014

Data source: national case report system

Seroprevalence of syphilis in different pops

MSM  STD  IDU  FSW  LTD  FP  PW

LTD: Long distance truck drivers  FP: floating population  PW: Pregnant women

Prevalence of syphilis by subgroup

MSM, FSWs

MSM

Bathhouse

Outdoor

Bar

network

FSWs

Outdoor

Services

Entertainment

Estimates of Syphilis in China

At any point in 2008 in WHO South-East Asia Region, it was estimated that were infected 12.3 million with syphilis.

2011年：梅毒估计数=298万

HIV估计数=78万 (3.8:1)

54,629 5,287 205,452 13,554 68,296 2,444,364 2,977,387

People (Population)  Syphilis %

In 2011: syphilis estimate=2.98m and HIV estimate=0.78m (3.8:1)

Disease burden of maternal syphilis & APOs

2008年我国孕妇梅毒估计数=39072（占全球3%）

Maternal syphilis estimate in 2008 in China = 39,072 (3% of the global)
HIV/Syphilis co-infection

- HIV/syphilis co-infection is also a big concern
  Among MSM, the prevalence of HIV and syphilis co-infection in 2008 is 2.6% (N=2936, Tang, W, 2014)
  Sexually transmitted HIV increased from 30.6% in 2006 to 92.2% in 2014 (Data source: China CDC)

Determinate: Social and Cultural

- Social & Culture
- Biological factor
- Health service
- Policy
- Money

Determinants: Social and Cultural

Sexual Liberation

1. Social and cultural structures regarding sexual behaviors have become more complicated
2. High risk populations are still hard to reach
Determinants: Health System

National CDC AIDS control center

HIV epidemic spread widely since 1985

National CDC STD control center
Founded in 2001 with the responsibility of HIV/STD control.

With the pressure of HIV/syphilis control rising,

- Insufficient financial, political and technology support
- Physicians lack time and willingness for preventative services
- STDs are not covered by medical insurance in some areas
- Stigma pushes patients to seek out private clinics (less supervision; lower quality)

Determinants: Medical Service

- Physicians lack time and willingness for preventative services
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Response: Policy Support

Response:

- Policy support
- STD control

Strategies for syphilis control in China

1. Health education to increase awareness and knowledge
2. Behavioral interventions to stop transmission
3. Strengthening active screening to early detect infection
4. Prevention of MTCT of syphilis
5. Strengthening int’l cooperation and operational studies

Intervention of STIs among high-risk groups

Primary Prevention: prevent STD infections happening
- Health education
- Less sexual partners
- Condom use

Secondary Prevention: early screen for the infections and timely treat the patients to prevent further transmission
- Screening for syphilis
- Treatment of infection
- Partner management
Implementation of STI interventions in high-risks

- Those who are covered by prevention programs
- Those who have safe sexual behaviors
- Those who have access to STI care
- Those who get results promptly
- Those who get diagnosis for treatment
- Those who get appropriate treatment
- Those whose partner intervened

Implementation of PMTCT of syphilis

- Pregnant women
- Pregnant women who are covered by prevention programs
- Pregnant women who have syphilis
- Pregnant women who access at least one antenatal care
- Pregnant women who access early care
- Pregnant women who have syphilis test
- Pregnant women who get results
- Pregnant women who get test results
- Pregnant women who are intervened
- Education intervention to prevent maternal infection happening

Primary Prevention: prevent maternal infection happening
- Education
- Less sexual partners
- Condom use

Secondary Prevention: early detect the infection and apply interventions to prevent its transmission to fetus
- Screening for syphilis
- Treatment of infection
- Partner management

Tertiary Prevention: avoid and intervene outcomes of transmission
- Treatment
- Follow-up

National syphilis control plan (2010-2020)

Targets
- Indicators

- How to translate national strategies into local implementation?

Guangdong is a microcosm of China

Land Area: #15 in China (179,800 km²)
Native Population: #1 (0.16 Bn)
migrants: #1 (30 Mn)
GDP: #1

Pillar industry: Manufacturing & trading
Total import and export volume: 25% of national
Syphilis incidence has been consistently higher than the national average.

Total numbers of both Syphilis and Gonorrhea cases Ranked 1st.

Laboratory & clinical quality control Network

**Laboratory**
- Standardized management of STIs laboratory network building from 2003
- 362 laboratory within the network

**Clinical management**
- Set up provincial STIs clinical quality control center with panel group in 2013;
- Organize 4 clinical training courses in provincial level per year;
- Strengthened MSM STIs management training from 2011.

Syphilis Control Projects (domestic funding)

<table>
<thead>
<tr>
<th>Year</th>
<th>Program</th>
<th>Focus</th>
<th>Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009-2012</td>
<td>国家重大专项，防治性病艾滋病的综合研究</td>
<td>STI treatment to prevent HIV</td>
<td>Mega Project of China National Science Research for the 11th Five-Year Plan</td>
</tr>
<tr>
<td>2009-2012</td>
<td>农村梅毒控制项目</td>
<td>Syphilis screening among pregnant women in rural area</td>
<td>Health department of Guangdong province</td>
</tr>
<tr>
<td>2014-2015</td>
<td>性病门诊综合防制示范区项目</td>
<td>Syphilis/HIV PITCH in STD clinic</td>
<td>National CDC</td>
</tr>
<tr>
<td>2015-2016</td>
<td>广东省梅毒综合防制示范区项目</td>
<td>Comprehensive control for syphilis</td>
<td>Health department of Guangdong province</td>
</tr>
<tr>
<td>2015-2016</td>
<td>梅毒血清固定项目</td>
<td>Syphilis serofast</td>
<td>Health department of Guangdong province</td>
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</table>

Response: National Syphilis Plan (2010-2020)

- 2012: Guangdong issued syphilis control implementation scheme
- 2013: Guangdong initiative for Pilot Study of comprehensive control of syphilis

Guangdong STIs control network
Syphilis Control Projects (International funding)

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<th>Year</th>
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<th>Funding</th>
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</thead>
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<tr>
<td>2007-2010</td>
<td>Studies on introduction of rapid syphilis tests into antenatal care and outreach services of high risk groups in China</td>
<td>WHO</td>
</tr>
<tr>
<td>2010-2011</td>
<td>Strengthening of HIV testing, surveillance and interventions through providing syphilis screening</td>
<td>CAHRB</td>
</tr>
<tr>
<td>2010-2014</td>
<td>Plum Blossom (integrating syphilis and HIV testing in south china)</td>
<td>NIH Fogerty</td>
</tr>
<tr>
<td>2011-2012</td>
<td>Free Goat (syphilis, gonorrhea and chlamydia among HIV infected individuals in Guangzhou)</td>
<td>UNC</td>
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<tr>
<td>2012-2017</td>
<td>SESH (Social entrepreneurship for sexual health)</td>
<td>UNC</td>
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<tr>
<td>2012-2017</td>
<td>R01 (Using crowdsourcing to spur new ways to expand HIV testing)</td>
<td>NIH</td>
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STIs Clinics based intervention targeting low tier FSWs
(Cohort study, Jiangmen, 2009-2012)

Results:
- 3701 participants
- HIV prevalence: 0.6%
- Syphilis prevalence: 8.1% (14.2% VS 6.1% for low tier and middle tier FSWs)
- Overall incidence of syphilis: 5.3/100 person-years (95%CI 1.8-8.8)
- Condom use improved
  - Used condom during last intercourse: Increased from 40.2% to 72%
  - Consistent used condom in last 3 months: Increased from 30.4% to 65%

Provider Initiative in Testing and Counseling (PITC) in STD clinics to increase syphilis and HIV screen testing (Jiangmen, 2014)

Interventions:
1) Policy support;
2) Propaganda in and out of clinics;
3) Free testing;
4) Supervision and quality control;
5) Testing promotion for both providers and clients

HIV & syphilis screening rate pre- and post intervention

<table>
<thead>
<tr>
<th></th>
<th>Pre-intervention</th>
<th>N</th>
<th>Post-intervention</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV (+)</td>
<td>398</td>
<td>28.55</td>
<td>699</td>
<td>61.31</td>
<td></td>
</tr>
<tr>
<td>Syphilis (+)</td>
<td>560</td>
<td>39.69</td>
<td>854</td>
<td>73.68</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1458</td>
<td>--</td>
<td>1159</td>
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South China-UNC project (2012-)

South China-UNC STI Research Training Center

Main Goal:
Foster development of skills among junior Chinese investigators to conduct productive interdisciplinary STD (including HIV) research
Major activities
• STI/HIV training course per year
• Short, medium and long-term training opportunities for junior investigators
• Multiple research programs
• Postdoctoral fellow positions (involve field work in China and training at UNC)
• Biweekly STD/HIV journal club

Productivity 2014-2015
14 abstracts at international conferences;
25 research manuscripts;
2 UJMT Fogarty Global Health Fellowships;

Dr. Ngai Sz Wong (PhD Public Health, Chinese University of Hong Kong, started July 2015)
Dr. Lai Sze Tso (PhD Sociology, University of Michigan, started Jan 2015)
Dr. Songyuan Tang (PhD, Epidemiology, UCLA, started August 2015)
Dr. Wenning Tang (PhD, Epidemiology, UCLA, started Jan 2014)

SESHP Project (2012- )

Social Entrepreneurship for Sexual Health
Goal: To create more engaging and effective sexual health services using crowdsourcing and other social entrepreneurship tools.
• Introduce and translate international new concept and technology to China, and localize them;
• Through research projects, strengthen personnel training and team building.

Activities
1. Crowdsourcing HIV Test Promotion Using Short Videos (Greater China)
2. "Sex + Health" Image Crowdsourcing Contest (Guangzhou, Hong Kong)
3. Condom Contest (Guangzhou, Beijing)
4. Crowdsourcing HIV Testing and Linkage (Guangzhou, Foshan)
5. Sticky Rice Love Sexual Health Education (Hong Kong)
6. HIV Testing Kit Social Enterprise (Wuhan, Chengdu, Kuning, Shanghai, Wuxi)

SESHP was selected as one of 25 top innovators in a global competition, Social Innovation in Health Initiative, organized by the WHO/TDR, and UCT.

Challenges
➢ Better translating strategies into practice
➢ Better integration of STDs and HIV control
➢ New technologies and approaches
➢ Broaden cooperation

千里之行，始于足下
A journey of a thousand miles begins with single step
——Lao Tzu
Acknowledgements

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- Dr. Mike Cohen
- Dr. Rosanna Peeling

Thanks for your attention!

Website:  http://www.gdvdc.com