Impact of NCI-China Cancer Research Collaboration from China’s perspective

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NCI CGH session at the Joint Meeting of the NCAB/BSA
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Outline

1. Brief review of the history of collaborations with NCI

2. Impact of NCI past and current collaborations on cancer research and programs in China

3. Areas for future collaboration with NCI
1. Brief review of the history of collaborations

Few medical projects can ever have been successfully carried through that compare in scale with national survey of the cause of death undertaken in China in 1975. That immense task, which involved identification of about 20 million deaths...This provided epidemiologists with a unique opportunity for testing hypotheses about the etiology of diseases, and possibly for obtaining some entirely new clues. (R. Doll & P. Greenwald)

![Image: The Cancer Detectives of Lin Xian](image1.png)
![Image: 1973-75 China National Mortality Survey](image2.png)

BBC documentary 1983

1973-75 China National Mortality Survey
1.1 Epidemiological studies and Nutrition Intervention Trial (NIT)

- 1982, CICAMS submitted NIT proposal to DCE/NCI, and the pilot study approved by Chinese MOH
- 1984, Case-control studies on cancers of esophagus, lung, stomach, and choriocarcinoma (DCE)
- 1985-1991, NIT study and follow-up (DCE/DCPC)
- 1991-2015, continue follow up until now (DCEG/DCPC)
More etiology Studies

(DCEG/DCPC)

1. Zinc Deficiency & Esophageal Cancer
2. Serum selenium, cysteine, Vitamin E, Serum 25(OH)-vitamin D & esophageal squamous dysplasia, esophageal and gastric cancers
3. Serum pepsinogens & esophageal squamous dysplasia
4. Helicobacter pylori & esophageal and gastric cancers
5. HPV infection & esophageal Cancer
6. Epidemiological study of HPV & cervical cancer in Shanxi, China

1.2 Early detection of esophageal & cervical cancer & its precancerous lesion research in China (DCPC/DCEG)

- Cytological screening sampling study I & II
- Endoscopy screening method study (iodine staining & biopsy)
- Chemoprevention of esophageal squamous cell carcinoma
- NCC’s Upper GI Endoscopy Cohort Studies
- Cervical cancer screening studies
A. Balloon Cytology and HPV screening Studies (DCEG)

B. Endoscopy screening method study (DCEG)

1.3 Educational training programs

1. Cancer Prevention Academic Course by DCPC/NCI since 1986

2. NIH Fogarty International Clinical Research Scholars & Fellow Program (FICRS)

3. NIH-Fulbright Public Health Program in CICAMS/PUMC

4. Fogarty Global Health Fellows 2013-2014 UNC-CH/Hopkins/Morehouse/Tulane (Qiao/Smith/Zhao)
Myat Htoo Razak visited the Fogarty site, Beijing, 2010

Alumni of National Institutes of Health (Beijing, Oct. 14, 2010)

Fogarty scholars with Dr Roger Glass, Beijing, 2012

Fogarty scholars with Ms Kathleen Sebelius, Secretary of HHS, U.S.
Fogarty-Fulbright Scholars/mentor with Dr. Harold Varmus, Nobel Laurel and Director of NCI/NIH, USA in Cancer Inst. Chinese Academy of Medical Sciences
Beijing, China, March 17, 2013
2. Impact of NCI-CICAMS collaborations - NIT

For the people of Linxian

- Provide evidence for considering a public health action plan
- Reduce mortality of common cancers and elderly diseases

**Nutrition changes**

<table>
<thead>
<tr>
<th>Trend of major food intake frequency from 1985 to 1999</th>
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<tbody>
<tr>
<td>times/year</td>
</tr>
<tr>
<td>300</td>
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<tr>
<td>250</td>
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<td>200</td>
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<td>150</td>
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<td>100</td>
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<tr>
<td>50</td>
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**Rates changes**

<table>
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<tr>
<th>Mortality of ESCC in Linzhou</th>
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<tr>
<td>world standard population</td>
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<tr>
<td>Both</td>
</tr>
<tr>
<td>160</td>
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</tbody>
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2.2 Impact of NCI-CICAMS collaborations - Screening

Taihang Mountain Anti-cancer Campaign: Demonstration center
Population based cancer prevention program
Multi-center endoscopic screening evaluation study in high risk population

<table>
<thead>
<tr>
<th>Year</th>
<th>Area Description</th>
<th>Sites</th>
<th>Provinces</th>
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<tbody>
<tr>
<td>2005</td>
<td>2 high risk areas (Demonstration)</td>
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<tr>
<td>2007-2012</td>
<td>7-121 Rural high risk areas in 27 provinces</td>
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<tr>
<td></td>
<td>Colorectal cancer: 15 sites in 11 provinces</td>
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<td>Liver cancer: 11 sites in 4 provinces</td>
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<td>Nasopharyngeal cancer: 6 sites in 3 provinces</td>
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<td>Lung cancer: 3 sites in 2 provinces</td>
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<tr>
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<td>Huai River Region: 26 sites in 4 provinces</td>
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<tr>
<td></td>
<td>Cervical cancer: 10M/year in 1000+ sites</td>
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<td>Breast cancer: 1.2M/year in 220+ sites</td>
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Long-Term Follow-Up of a Community Assignment, One-Time Endoscopic Screening Study of Esophageal Cancer in China

Cumulative Incidence of EC among the target population
4.17% vs 5.92%, reduced 29.47%

Cumulative Mortality of EC among the target population
3.35% vs 5.05%, reduced 33.56%

2.3 Impact of NCI-CICAMS collaborations - Ethics

- IRBs modeled on NCI projects in 1984
  - Members
  - Initial review
  - Continuing annual review
  - Fixed date vs. by request

- Single project assurance (SPA)
- Multiple project assurance (MPA)
- Routine for all human related studies
2.4. Health Policy and Regulatory (CGH)

Roundtable Discussions for

- HPV vaccine implementation in China
- Comprehensive prevention of cervical cancer in China
The Asia Oceania Research Organization on Genital Infections and Neoplasia (AOGIN) Biennial Conference April 25-27, 2015 Beijing

- Dr Lowy’s Keynote Speech “Reducing HPV-Associated Cancer Globally”
- CGH Session- “Evaluation and Follow up in Cervical Cancer Screening Programs, No Woman Left Behind” by Dr. Ted Trimble
- DCP Session- “Cancer Immunoprevention: Current Status and Future Directions for Cervical Cancer Prevention” by Asad Umar
Promote governmental collaboration to prevent cervical cancer in Asia (CGH)

- The 1st Senior Officials’ Meeting (SOM1) & Related Meetings
- APEC delegations from US and China in Ningbo Feb, 2014
78 delegates from the governments, academic institutions and international organizations of 11 economics exchanged opinions in terms of research, clinical treatment and health policy, also discussed and identified the gaps to building and strengthening the capacity for cervical cancer prevention and control.
First Workshop on Using Cancer Registry Data to Inform Cancer Research and Cancer Prevention and Control Policy
Chinese National Cancer Center, Chinese CDC, Shanghai CDC, CGH/NCI, WHO/IARC
US, China combine efforts to study cancer
By Wang Chao in Washington (China Daily)

He Jie (second left), president of CICAMS, shakes hands with Harold Varmus, director of NCI at the signing ceremony, while Qiao Youlin (first left) from CICAMS and Ted Trimble from NCI look on.
3. Future collaborations - 2

- Follow-up Study of Nutrition Intervention Trials in Linxian (30-year data analysis)
- Serum Nutritional Biomarkers & Common Cancers
- Esophageal Cancer Family Study, Linxian, China
- Prospective Evaluation Study of Upper GI Cancer Screening based on the demonstration centers
- Biological markers of early detection for ESCC
3. Future collaborations - 3

- National Cervical Cancer Prevention Plan and Strategies in China
  - Dr. Fang-Hui Zhao under the guidance of Dr. Lowy

- The Need for National Commitments to Cancer Research to Guide Public Health Investment and Practice (collaborating with CGH)

- Build and strengthen the networks of cervical cancer prevention in Asian Pacific Areas through APEC and AOGIN (collaborating with CGH)

- The NCI Summer Curriculum in Cancer Prevention in China (collaborating with CGH and DCP)

- Collaborations with National Cancer Registry Center