Innovative strategies for primary prevention of cardiovascular diseases in low to middle income countries: implications for China

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CVD epidemiology in LMICs

- CVDs as No 1 cause of death globally (31% of all global deaths)
- An estimated 17.5 million people died from CVDs (2012): 7.4 million due to CHD and 6.7 million due to stroke
- Over 3/4 CVD deaths in LMICs
- Out of the 16 million deaths under 70 due to NCDs, 82% in LMICs and 37% caused by CVDs
CVD prevention

• Most CVDs preventable by addressing behavioural risk factors
• People with CVD or at high CVD risk need early detection and management
• Common strategies include pharmacological and/or lifestyle interventions
Innovative CVD risk screening strategies

- Population
- Technology
- Approach/equation
Screening population?

- Universal screening
- Targeted screening....
Screening approach

- WHO/HIS total CVD risk approach
- Framingham scores
- Asian equation
Risk screening technology

- Paper based
- Computer based
- Mobile phone based
Innovative strategies for CVD risk management

- Pharmacological intervention
- Health systems intervention
- Special population intervention
Novel pharmacological interventions

- Polypill

- Interventions using polypill strategies

Either independent or combined with lifestyle interventions...
Community-based intervention

- Community empowerment (‘bottom-up’, ‘social entrepreneurs’)
- Community health workers
- Community-based insurance programme
Digital health

• Automated telephone care management + home BP monitors

• Electronic decision support (smartphone + central server)

• Other digital devices
Interventions for special population

- Workplace and welfare programme
- School intervention
- Vulnerable population (e.g., slums)
Key debates

- Population v.s. individual based
- Single high risk factor v.s. absolute risk
- From clinical trial to pragmatic trial
- Cost-effectiveness and replicability of interventions
Implications for China

- About 230 million people have CVD (one in 5 adults)
- CVD death: 154.8 (urban) vs 163.1 (rural) per 100,000 annually (2010)
- 20.9% / 17.9% (urban/rural) of China's total number of deaths annually
- Projected annual CVD events increase by 50% between 2010 and 2030 (based on population aging and growth alone)
Implications for China

- **Opportunities**
  - Sustainable Development Goals
  - Essential public health service
  - Dual referral reform between primary care and tertiary reform

- **Challenges**
  - Primary care capacity (HR, technical, awareness...)
  - Health insurance for preventive treatment
  - Population awareness

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