

**PRIORITIES AND STRATEGIES FOR HEALTH
INFORMATION SYSTEM DEVELOPMENT IN CHINA**

**How Provincial Health Information Systems Support
Regional Health Planning**

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LIST OF ACRONYMS AND ABBREVIATIONS

| | |
|--------|---|
| ABS | Australian Bureau of Statistics (of Australia) |
| ACFDP | All-China Federation of Disabled Persons |
| ACFTU | All-China Federation of Trade Unions |
| AIDS | Acquired Immune Deficiency Syndrome |
| AIHW | Australian Institute of Health and Welfare (of Australia) |
| ALOS | Average Length of Stay |
| BMC | Beijing Medical College |
| BMU | Beijing Medical University |
| BOD | burden of disease |
| BSC | Balance Scorecard |
| BBC | British Broadcasting Corporation |
| CAAC | Civil Aviation Administration of China |
| CASS | Chinese Academic of Social Science |
| CAST | China Association for Science and Technology |
| CBA | cost-benefit analysis |
| CCD | Chinese Classification of Diseases |
| CCDC | Chinese Centre of Disease Control and Prevention |
| CCP | Chinese Communist Party |
| CCCPC | Central Committee of the Chinese Communist Party |
| CCTV | China Central Television |
| CD | compact disk |
| CDC | Centre of Disease Control |
| CDCP | Centre of Disease Control and Prevention |
| CD-ROM | compact disc read only memory |
| CDWSM | chronic diseases within six months |
| CEA | cost-effectiveness analysis |
| CEO | chief executive officer |
| CHC | community health centre |
| CHEI | China Health Economic Institution |
| CHMI | China Hospital Management Institution |
| CHS | community health station |
| CHS | Comprehensive health statistics |
| CHSI | Centre of Health Statistical Information |
| CIHI | Canadian Institute of Health Information |

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| CIO | chief information officer |
| CIS | clinical information system |
| CMA | Chinese Medical Association |
| CMB | China Meteorological Bureau |
| CMS | cooperative medical system |
| CNPNGCG | China National Petroleum and Natural Gas Corporation Group |
| COPD | chronic obstructive pulmonary disease |
| CPIRC | Chinese Population Information and Research Centre |
| CPMA | Chinese Preventive Medical Association |
| CPU | central processing unit |
| CT | computerised tomography |
| CPCG | China Petrochemical Corporation Group |
| CSTIND | Commission of Science, Technology and Industry for National Defense |
| CUA | cost-utility analysis |
| DALY | disability-adjusted life year |
| DDC | Department of Disease Control |
| DHA | Department of Health and Aging (of Australia) |
| DHS | Division of Health Statistics |
| DHS | Department of Human Services (of State Victoria, Australia) |
| DOHPPF | Department of Health Planning and Financing |
| DMA | Department of Medical Administration |
| DOT | directly observed therapy |
| DRG | Diagnosis Related Group |
| DSPs | Disease Surveillance Points |
| DWTW | diseases within two weeks |
| EBM | evidence-based medicine |
| EBP | evidence-based policy |
| FLO | Foreign Loan Office |
| FOI | Freedom of Information |
| FFS | fee for service |
| GCA | General Customs Administration |
| GDDS | General Data Dissemination System |
| GDP | gross domestic product |
| GHE | government health expenditure |
| GIS | government insurance scheme |
| GLD | General Logistics Department |

| | |
|-------|--|
| GP | general practitioner |
| HB | health bureau |
| HEA | Health Economics Association |
| HI | health information |
| HIC | Health Information Centre |
| HIS | Health Information System |
| HIPAA | Health Insurance Portability and Accountability Act |
| HIV | human immunodeficiency virus |
| HRM | human resource management |
| HS | health statistics |
| HSA | Health Statistics Association |
| HSR | health sector reform |
| IBM | International Business Machines Corporation |
| ICD | international classification of diseases |
| ICT | information and communication technology |
| ID | individual identification |
| IHI | Institute of Health Inspection |
| IMF | International Monetary Fund |
| IMR | infant mortality rate |
| ISDPT | Institute of Specific Disease Prevention and Treatment |
| IS | information system |
| IT | information technology |
| JHU | Johns Hopkins University |
| LE | life expectancy |
| LGCA | Leading Group for Computer Application |
| LIS | labour insurance scheme |
| LOS | length of stay |
| LTU | La Trobe University |
| MCH | maternal and child health |
| MIS | management information system |
| MMR | maternal mortality rate |
| MOA | Ministry of Agriculture |
| MOC | Ministry of Construction |
| MOCA | Ministry of Civil Affairs |
| MOCOM | Ministry of Communication |
| MOCU | Ministry of Culture |

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| MOE | Ministry of Education |
| MOF | Ministry of Finance |
| MOFTEC | Ministry of Foreign Trade and Economic Cooperation |
| MOH | Ministry of Health |
| MOII | Ministry of Information Industry |
| MOJ | Ministry of Justice |
| MOLR | Ministry of Land and Resources |
| MOLSS | Ministry of Labour and Social Security |
| MOPS | Ministry of Public Security |
| MOR | Ministry of Railway |
| MOST | Ministry of Science and Technology |
| MOWC | Ministry of Water Conservancy |
| MPE | Modified Planned Economy |
| MRI | magnetic resonance imaging |
| MU | medical university |
| NBS | National Bureau of Statistics |
| NBF | National Bureau of Forestry |
| NBSM | National Bureau of Science and Mapping |
| NCD | non-communicable diseases |
| NDPC | National Development and Planning Commission |
| NDRC | National Development and Reform Commission |
| NDSPs | New Disease Surveillance Points |
| NETC | National Economy and Trade Commission |
| NGOs | non-government organisations |
| NHEI | National Health Epidemic Information |
| NHMD | National Hospital Morbidity Database (of Australia) |
| NHPA | National Health Priority Areas (of Australia) |
| NHS | National Health Service (of UK) |
| NHSR | National Health Services Research |
| NHSS | National Health Services Survey |
| NIC | National Information Centre |
| NIH | National Institute of Health (of USA) |
| NPC | National People's Congress |
| NPFC | National Population and Family Planning Commission |
| NSW | New South Wales (a State of Australia) |
| OOP | out-of-pocket |

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| OECD | Organisation for Economic Co-operation and Development |
| PACS | picture archival communications system |
| PBS | pharmaceutical benefits scheme (of Australia) |
| PC | personal computer |
| PDPC | Provincial Development and Planning Commission |
| PES | Prevention and Endemic Station |
| PFB | Provincial Finance Bureau |
| PHB | Provincial Health Bureau |
| PHC | primary health care |
| PHE | personal health expenditure |
| PHIC | Provincial Health Information Department |
| PHS | professional health statistics |
| PKU | Peking University |
| PRC | People's Republic of China |
| PRU | primary report unit |
| PSB | Provincial Statistics Bureau |
| R&D | Research and development |
| RAWP | Regional Allocation Working Party (of UK) |
| RHP | Regional Health Planning |
| RMB | Ren Min Bi (Chinese currency) |
| RMIP | Regional Medical Institution Planning |
| ROHPS | Research Office of Health Planning Statistics |
| RSEST | Rural Socio-Economic Survey Team |
| SANP | State Agency of News and Publication |
| SAOBFT | State Administration of Broadcasting, Film and Television |
| SAOEC | State Administration of Exchange Control |
| SAOIC | State Administration of Industry and Commerce |
| SAOTSQ | State Administration of Technical Supervision and Quarantine |
| SAP | situation analysis for policy |
| SARS | severe acute respiratory syndrome |
| SBIP | State Bureau of Intellectual Properties |
| SBOCR | State Bureau of Cultural Relics |
| SC | State Council (central government of China) |
| SEPA | State Environment Protection Administration |
| SEZ | special economic zone |
| SHE | social health expenditure |

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| SHS | Society of Health Statistics |
| SHM | Society of Hospital Management |
| SIC | State Information Centre |
| SME | socialist market economy |
| SAOFE | State Administration of Foreign Exchanges |
| SOA | State Oceanic Administration |
| SOE | State owned enterprise |
| SPSS | Statistics Package for Social Sciences |
| SSA | Sate Sports Administration |
| SPC | Supreme People's Court |
| SPP | Supreme People's Procuratorate |
| STD | sex-transmitted diseases |
| SWOT | strengths, weaknesses, opportunities and threats |
| TB | tuberculosis |
| TCM | traditional Chinese medicine |
| THC | township health centre |
| THE | total health expenditure |
| TQM | total quality management |
| TV | television |
| U5CMR | under five child mortality rate |
| UK | United Kingdom |
| UN | United Nations |
| UNDP | United Nations Development Programme |
| UNESCAP | United Nations Economic and Social Commission for Asia and Pacific |
| UNICEF | United Nations Children's Fund |
| USA | United States of America |
| USEST | Urban Socio-Economic Survey Team |
| VHSs | village health stations |
| WB | World Bank |
| WHO | World Health Organisation |
| WPRO | World Health Organisation Pacific Regional Office |
| WTO | World Trade Organisation |
| YLL | years of life loss |

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ABSTRACT

China is moving towards a market economy. The greater use of market forces has made China richer, accelerated modernisation and increased productive efficiency but has created new problems, including, in the health sector, problems of inequity and allocative inefficiency. From 1997, the Chinese government committed to a national policy of regional health planning (RHP), as part of a broader commitment to harmonising social and economic development. However, RHP has been slow to impact on the equity and efficiency problems in health care.

Planning requires information; better health decision-making requires better health information. Information systems constitute a resource that is vital for the health planning and the management of the health system. Properly developed, managed and used, health information systems are a highly cost-effective resource for the nation and its regions. Bureaucratic resistance, one of critical reasons is that regional health planners gained insufficient support from information system. Health information needs to adopt into the new way of government health management.

The objective of the study is to contribute to the development of China's health information system (HIS) over the next 5-10 years, in particular to suggest how provincial health information systems could be made more useful as a basis for RHP. The existing HIS is examined in relation to its support for and relevance to RHP, including policy framework, institutional structures and resources, networks and relationships, data collection, analysis, quality and accessibility of information as well as the use of information in support of health planning. Data sources include key informant interviews, a questionnaire survey and various policy documents. Qualitative (questionnaire survey on provincial HIS) and quantitative (key informant interviews) approaches are used in this study. Document analysis is also conducted.

The research examines information for planning within the macro and historical context of health planning in China, in particular having regard to the impacts and implications of

the transition to a market economy. It is evident that the implementation of RHP has been retarded by poor performance of information system, particularly at the provincial level. However, the implementation of RHP has also been complicated by fragmented administrative hierarchies, weak implementation mechanisms and contradictions between different policies, for example, between improved planning and the encouragement of market forces in health care.

To support RHP which is needs based, has a focus on improving allocative efficiency and is adapted to the new market development will require new information products and supports including infrastructure reform and capacity development. Provincial HIS needs to move from being data generators and transmitters to becoming information producers and providers. Health planning has moved to greater use of population-based benchmark and demand-side control. Therefore, information products should be widened from supply side data collection (in particular assets and resources) to include demand-side collection and analysis (including utilisation patterns and community surveys of opinion and experience). The interaction between users (the planners) and producers (the HIS) should be strengthened and regional networks of information producers and planners should be established.

STATEMENT OF AUTHORSHIP

Except where reference is made in the text of the thesis, this thesis contains no material published elsewhere or extracted in whole or in part from a thesis submitted for the award of any other degree or diploma.

Not other person's work has been used without due acknowledgement in the main text of the thesis.

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