Medicines use in China

**International Expert Consultation on
Medicines as a Key Component of Universal Health Coverage**

**2-4 October 2013
Singapore**

Sun Jing
Senior Researcher
National Institute of Hospital Administration, MoH, P.R.China

Regulating the use of medicines

- National level: MoH, CFDA and their technical arms (professional associations, expert committees, etc.)

- Local level: Local health and drug regulatory authorities and their technical arms (local professional associations, expert committees, etc.)

- Facility level: DTC and pharmacy department of health facilities

Monitoring the use of medicines

- No national data about overall medicines use, except expenditure data

- National monitoring network of antimicrobials in hospitals (about 300 tertiary and secondary) produces quarterly data of antibiotics use with a set of indicator system

- Most of the medicines use data are produced at local level through local insurance programs, multiple local monitoring networks/ projects/surveys, etc.
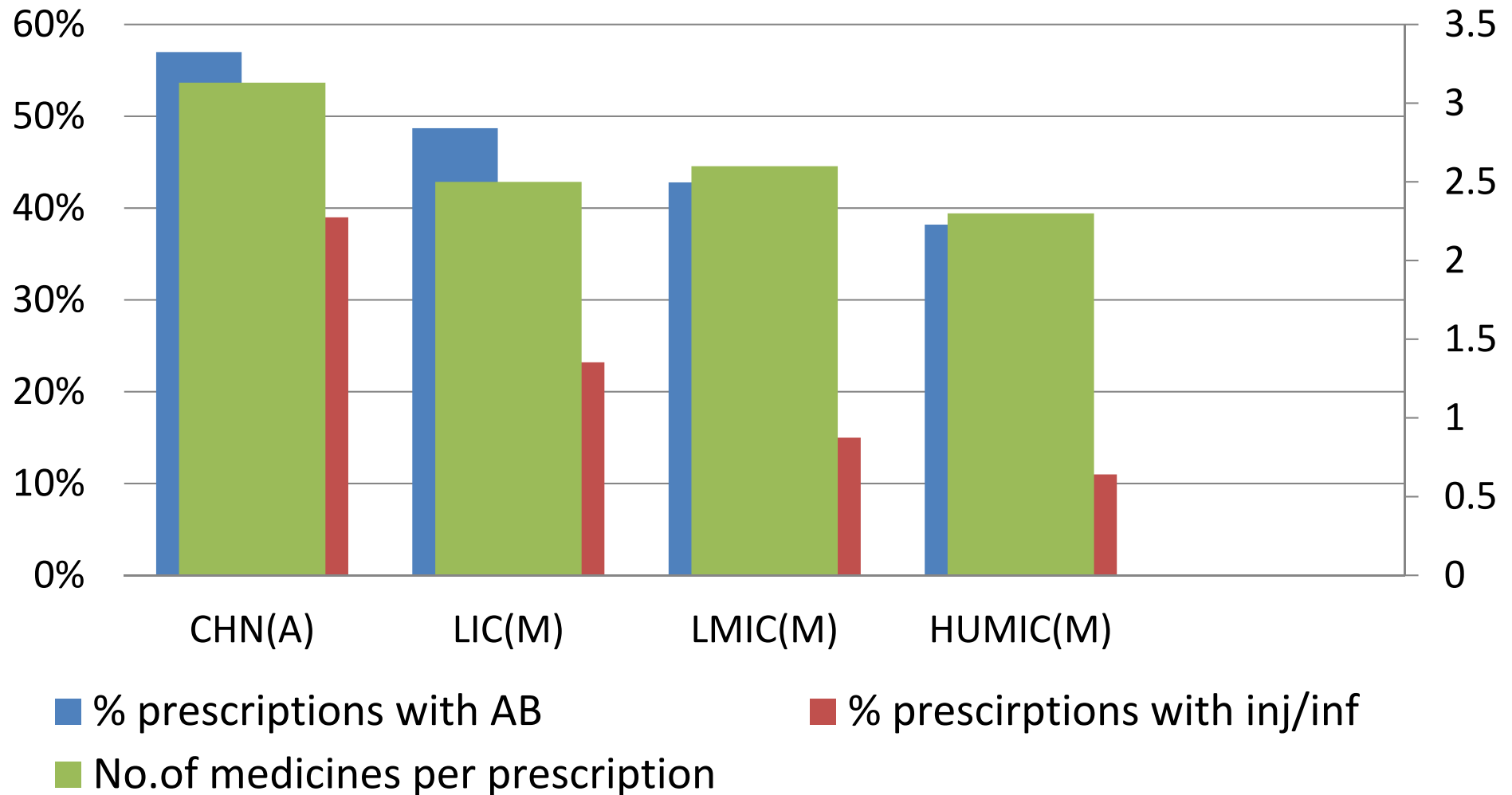
Indicators for monitoring

- WHO proposed indicators are most frequently used for monitoring use of medicines at all levels, for both IP and OP

- In addition, consumption (DDDs), top items used (DDDs & value), prophylaxis (time of administration, duration), ICU of antibiotics are monitored

- Generics/brand use, market share of specific categories are also monitored by project based studies or commercial companies

- Few disaggregated data in terms of age, population with different insurance coverage

Total Pharmaceutical Expenditure/Total Health Expenditure

TPE/THE(%)

■ CHN IP ■ CHN OP ■ CHN (A) ■ LIC (M) ■ MIC(A) ■ HIC(A) ■ Global(M)
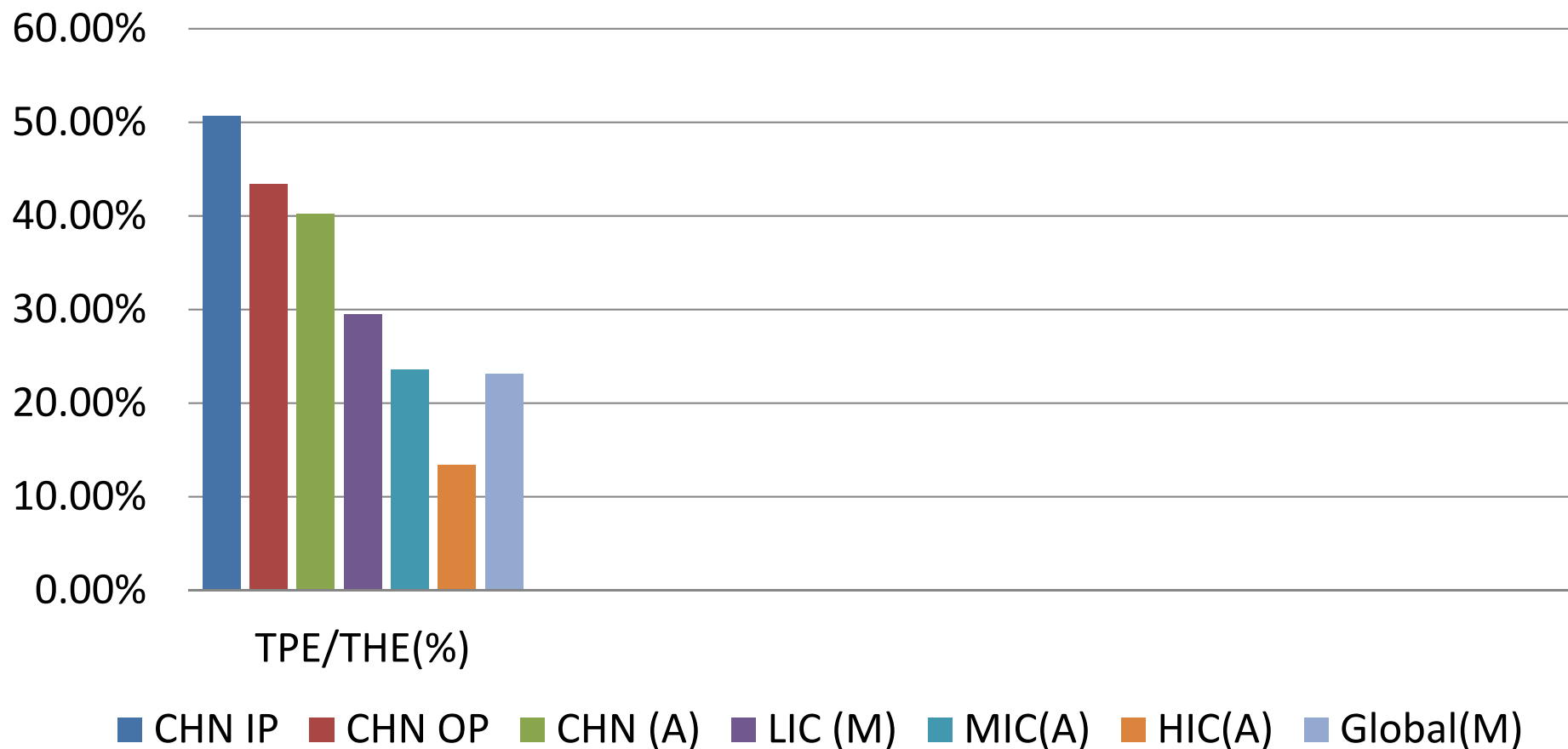
Source: OECD Health Data, 2011; China National Health Accounts Report 2011; China Health Statistics Summary 20

% prescriptions with antimicrobials, infusions & No. of medicines per prescription

Legend:
- % prescriptions with AB
- % prescriptions with inj/inf
- No.of medicines per prescription

Use of medicines was monitored and recorded in China since 1984

- **360,000 prescriptions and 3,957 medical records from 40 hospitals of 18 districts;**

- **20% of inpatients and 25% of outpatients were irrationally treated;**

- **Deaths due to irrational use of medicines accounting for 4.8-17% of total inpatients;**

- **Most of the irrational uses were combinations, 39.6-62.2% was with more than 6 medicines;**

- **The most irrationally used medicines were antibiotics, steroids and infusions.**

Source: Tang, J. et al. Minutes of the national seminar on promoting rational use of medicines. *National Medical Journal of China.* 1985;65(5):P258.

Medicines use in Chinese primary care-1

- **57% prescriptions in primary care facilities contain antimicrobials, 39% contains infusions**

- **Average number of medicines per prescription is 3.13**

Source: National Health Service Survey 2008 -*Research on Health Service of Primary Health Care Facilities in China.* Center for Health Statistics and Information, MoH. P.R.China

Medicines use in Chinese primary care-2

	Use of antibiotics (%)			Infusion rate (%)			Use of hormones (%)			Use of IV injection (%)			Average expenditure per prescription (¥)		
	2007	2010	Change (2010–07)	2007	2010	Change (2010–07)	2007	2010	Change (2010–07)	2007	2010	Change (2010–07)	2007	2010	Change (2010–07)
Upper respiratory tract infection															
Urban															
EM	60·79	59·65	−1·14	34·70	39·50	4·80	7·34	8·10	0·77	37·73	44·59	6·86	62·88	44·34	−18·54
Non-EM	75·28	68·40	−6·88	44·84	47·96	3·12	13·57	8·76	−4·81	50·51	53·00	2·50	59·21	55·86	−3·35
Difference (SE)*	–	..	5·74 (17·73)	..	..	1·68 (22·50)	..	..	5·58 (9·70)	..	..	4·36 (22·46)	..	..	−15·20 (22·69)
Rural															
EM	76·62	75·84	−0·78	33·40	33·31	−0·09	21·33	15·51	−5·82	46·72	47·63	0·91	30·34	31·80	1·46
Non-EM	82·04	70·77	−11·27	30·38	42·19	11·81	27·88	22·26	−5·62	51·50	58·29	6·79	22·01	33·65	11·64
Difference (SE)*	–	..	10·49 (8·22)	..	..	−11·90 (10·77)	..	..	−0·20 (9·55)	..	..	−5·88 (11·26)	..	..	−10·18 (12·79)
Hypertension															
Urban															
EM	3·66	4·23	0·57	13·84	1·67	−12·17	0·00	0·00	0·00	16·66	3·61	−13·05	85·31	77·34	−7·97
Non-EM	0·00	10·00	10·00	5·36	4·00	−1·36	0·00	0·00	0·00	7·14	4·00	−3·14	64·24	27·28	−36·96
Difference (SE)*	–	..	−9·43 (9·17)	..	..	−10·81 (13·39)	..	..	–	..	..	−9·90 (13·49)	..	..	28·98 (44·17)
Rural															
EM	18·55	21·12	2·57	16·96	11·93	−5·04	0·00	2·08	2·08	17·45	10·72	−6·73	43·90	27·94	−15·96
Non-EM	8·89	13·69	4·80	15·00	26·08	11·08	2·22	7·14	4·92	13·33	18·94	5·61	32·78	41·11	8·33
Difference (SE)*	–	..	−2·23 (13·27)	..	..	−16·12 (13·16)	..	..	−2·84 (4·17)	..	..	−12·33 (12·36)	..	..	−24·28 (17·27)
Diabetes															
Urban															
EM	0·00	3·30	3·30	2·47	1·74	−0·73	0·00	0·00	0·00	33·13	12·67	−20·45	168·47	143·50	−24·97
Non-EM	16·67	0·00	−16·67	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	73·23	29·33	−43·90
Difference (SE)*	–	..	19·97† (10·03)	..	..	−0·73 (4·54)	..	..		..	..	−20·45 (23·40)	..	..	18·93 (74·49)
Rural															
EM	17·59	1·41	−16·18	11·11	8·00	−3·11	3·70	2·17	−1·54	20·99	21·92	0·93	53·24	56·16	2·92
Non-EM	0·00	12·50	12·50	12·50	12·50	0·00	12·50	0·00	−12·50	0·00	41·07	41·07	58·13	52·94	−5·19
Difference (SE)*	–	..	−28·68† (14·99)	..	..	−3·11 (23·40)	..	..	10·96 (8·93)	..	..	−40·14 (29·93)	..	..	8·09 (45·51)

Source: Report on the implementation of national essential medicines policies, P.R.China, 2011

Medicines use in Chinese hospitals-1

- **30%-50% of the medicines consumed in hospitals are antimicrobials**

- **70% of the inpatients are treated with antimicrobials**

Source: Xiao, Y. et.al. *Report of Public Security Concerns of Irrational Use of Antibiotics.* Policy analysis study funded by the Chinese Science and Technology Association, 2007

Surgical AB prophylaxis in Chinese hospitals

Key indicator	World Alliance for Patient Safety (2nd)	Scottish NHS Guideline July 2008	Chinese National Guideline 2008	Reported best performance after intervention in CHN
General principle	NA	Grades of recommendations based on levels of evidence	NA, except high risk factors	32.56–39.1% non-indicated clean surgery with AB prophylaxis
Timing	Within the hour before incision	Intravenously ≤30 mins before incision	0.5–2 h before surgery	31.4–92.42% AB prophylaxis 0.5–2 h before surgery
Dosage and duration	NA	Single standard dose for most circumstances	Single dose for clean surgery <2 h. 2nd dose for >3 h	39.5–96% of clean surgery with no AB prophylaxis after operation; No. of days for AB prophylaxis: 4.1±2.9 (X ± SD)
Medicines choice	NA	Narrow spectrum, less expensive	Effectiveness, safety, convenience, and cost	2nd and 3rd generations of cephalosporin were commonly used

Source: Sun, J. Systematic review of interventions on antibiotic prophylaxis in surgery in Chinese hospitals during 2000–2012. *J.of Evidence-Based Medicine*, 2013;6:126–135.