Integrating CAM into Hospital Care: Perspectives from China

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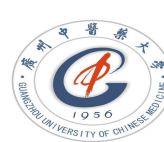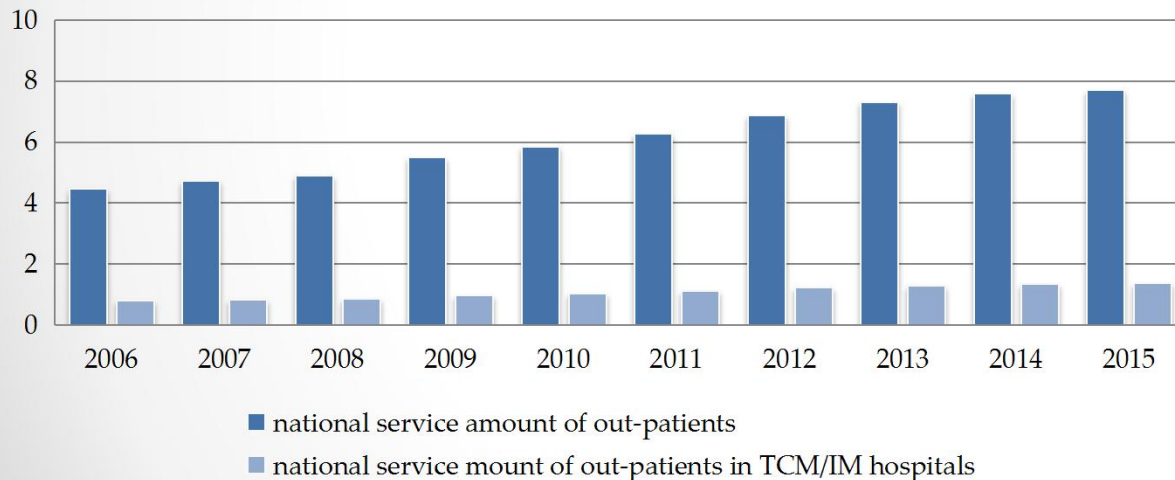# 1. Integrative Medicine in China: Background

- ## History
  - Traditional Chinese medicine(TCM) has a history of thousands of years

  - It is well documented in it's 2000-year history

  - It made great contributions to the health and well-being of the people and to the maintenance and growth of the population

• 1. Integrative Medicine in China: Background

National service amount of out-patients compared with those in TCM/IM hospitals (unit: billion)

national service amount of out-patients

national service mount of out-patients in TCM/IM hospitals

Data downloaded from http://www.satcm.gov.cn/ 2017.3.22

Popular

More than 90% of the urban and rural Chinese population have sought for TCM in their lifetimes (Xu H, 2008)

1. Integrative Medicine in China: Background (cont'd)

- **Policy**
  - The importance and development of both biomedicine and TCM are well recognized by the Chinese Central Government, and have been included in the country's constitution
  - Most TCM/IM treatments are covered by Medical insurances in China

Guidelines for TCM Development Program (2016-2030)

TCM Law, People's Republic of China, released in 2016

"TCM in China" the first time to be released by the central government, 2016.12

1. Integrative Medicine in China: Background (cont'd)

o **For quite a period of time, government encourage doctors with biomedicine education background to learn TCM**

o **Most TCM doctors in China, especially those who work in hospitals which have in-patient departments, have education background of biomedicine**

o **Nowadays, more and more doctors who work in biomedical hospital are willing to prescribe TCM treatments**

- **Trends：Holistic Integrative Medicine（HIM）**

2. Several main types of model in terms of integration TCM into inpatient/hospital settings in China

(1) Disease-based model

Heart Failure

A Multic
Parallel-
Effects
With Ch

Xinli Li, MD
Weimin Li, N
Wenming Ya
Qili Qiangxin

Nanjing, Beiji

Table 1	Baseline Characteristics of Patients Receiving Qili Qiangxin Capsules or Placebo		
Characteristic	**Qili Qiangxin Capsules (n = 244)**	**Placebo (n = 247)**	**All (N = 491)**
Course of disease, months	77.25 ± 10.94	77.14 ± 11.27	77.20 ± 11.10
Demographics			
Age, yrs	56.98 ± 11.59	57.53 ± 11.05	57.25 ± 11.31
Male	74.59	76.11	75.36
Race			
Han	98.77	98.79	98.78
Other	1.23	1.21	1.22
Medication			
ACE inhibitors	169 (69.26)	157 (63.56)	326 (66.40)
Angiotensin receptor blockers	51 (20.90)	48 (19.43)	99 (20.16)
Beta-blockers	191 (78.28)	196 (79.35)	387 (78.82)
Aldosterone antagonists	190 (77.87)	201 (81.38)	391 (79.63)
Diuretics	220 (90.16)	222 (89.88)	442 (90.02)
Digoxin	127 (52.05)	136 (55.06)	263 (53.56)

From 2012 to 2014 national volume of top 10 Chinese Patent Medicine retail sales（unit：hundred million）
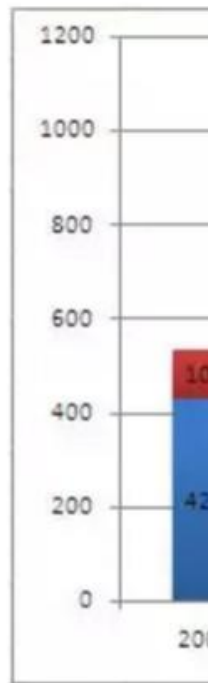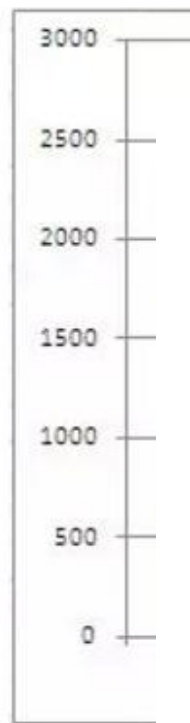
Category	2012	2013	2014
Cold medicine	144	169	174
Cardiovascular and cerebrovascular	76	90	98
Cough and reduce phlegm remedies	79	85	88
Tonic health	49	64	82
Urine and Kidney	59	62	80
Gastrointestinal medicine	68	73	76
Throat and oral medication	60	64	69
Gynecological medication	61	67	69
Rheumatism and orthopedic medication	43	55	60
Topical analgesics	51	55	57

Conclusion: Disease-based model

- **Only with a biomedical Diagnosis**
  - Clinical areas include, cardiovascular disease, neurological disease, oncology, kidney disease, digestive disorders, respiratory disease, etc
- **Apply patent products of TCM**
  - Usually use internal treatments, such as Chinese patent medicine, other than external therapies, such as acupuncture
- **More widely adopted in biomedical hospitals either for in-patient or out-patient services**
  - The consumption amount of Chinese patent drugs in biomedical hospitals are even more than those in TCM or Integrative Medicine (IM) hospitals
- **Safety issues**
  - OTC products might be misused by people

(2) Combined model on the basis of disease and pattern of Chinese medicine

Dr. Keji Chen, M.D. a famous integrative medicine doctor in China

Keji Chen, M.D., an integrative medicine doctor, makes a diagnosis with traditional pulse-feeling in addition to modern stethoscope in clinical practice. Photo by Jingchun Zhang.

As all the integrative medicine doctors in China, he makes a diagnosis with traditional pulse-feeling in addition to modern stethoscope in clinical practice.

——Xu H, Chen K. 2008

Research Article

Clinical and Epidemiological Investigation of TCM Syndromes of Patients with Coronary Heart Disease in China

TABLE 3: Comparison of the presence/absence of each of the 7 syndrome types between North and South China.

	Qi deficiency syndrome		Yang deficiency syndrome		Yin deficiency syndrome		Cold congelation syndrome		Qi stagnation syndrome		Blood stasis syndrome		Turbid phlegm syndrome	
	NO	Yes	NO	Yes	NO	Yes	NO	Yes	NO	Yes	NO	Yes	NO	Yes
North China	236 (69.2%)	105 (30.8%)	318 (93.3%)	23 (6.7%)	291 (85.3%)	50 (14.7%)	314 (92.1%)	27 (7.9%)	316 (92.7%)	25 (7.3%)	115 (33.7%)	226 (66.3%)	189 (55.4%)	152 (44.6%)
South China	46 (16.3%)	237 (83.7%)	257 (90.8%)	26 (9.2%)	243 (85.9%)	40 (14.1%)	276 (97.5%)	7 (2.5%)	268 (94.7%)	15 (5.3%)	24 (8.5%)	259 (91.5%)	88 (31.1%)	195 (68.9%)
χ^2	175.10		1.28		0.04		8.90		1.06		56.92		37.09	
P	0.00		0.26		0.85		0.003		0.30		0.00		0.00	

Patients with Chest pain, Chest discomfort, possible ACS

Yes

Whether st segment continues to raise

No

Conventional treatment and assessment

Literature | Experience | Expert opinion

TCM treatment

Qi Deficiency

Blood stasis

Phlegm

Treatment Strategy A

Treatment Strategy B

Emergency PCI

Hospitalization

Hospital discharge

Indications of IT

Yes

Yes

Intravenous thrombolysis

Remedial PCI if TT failure

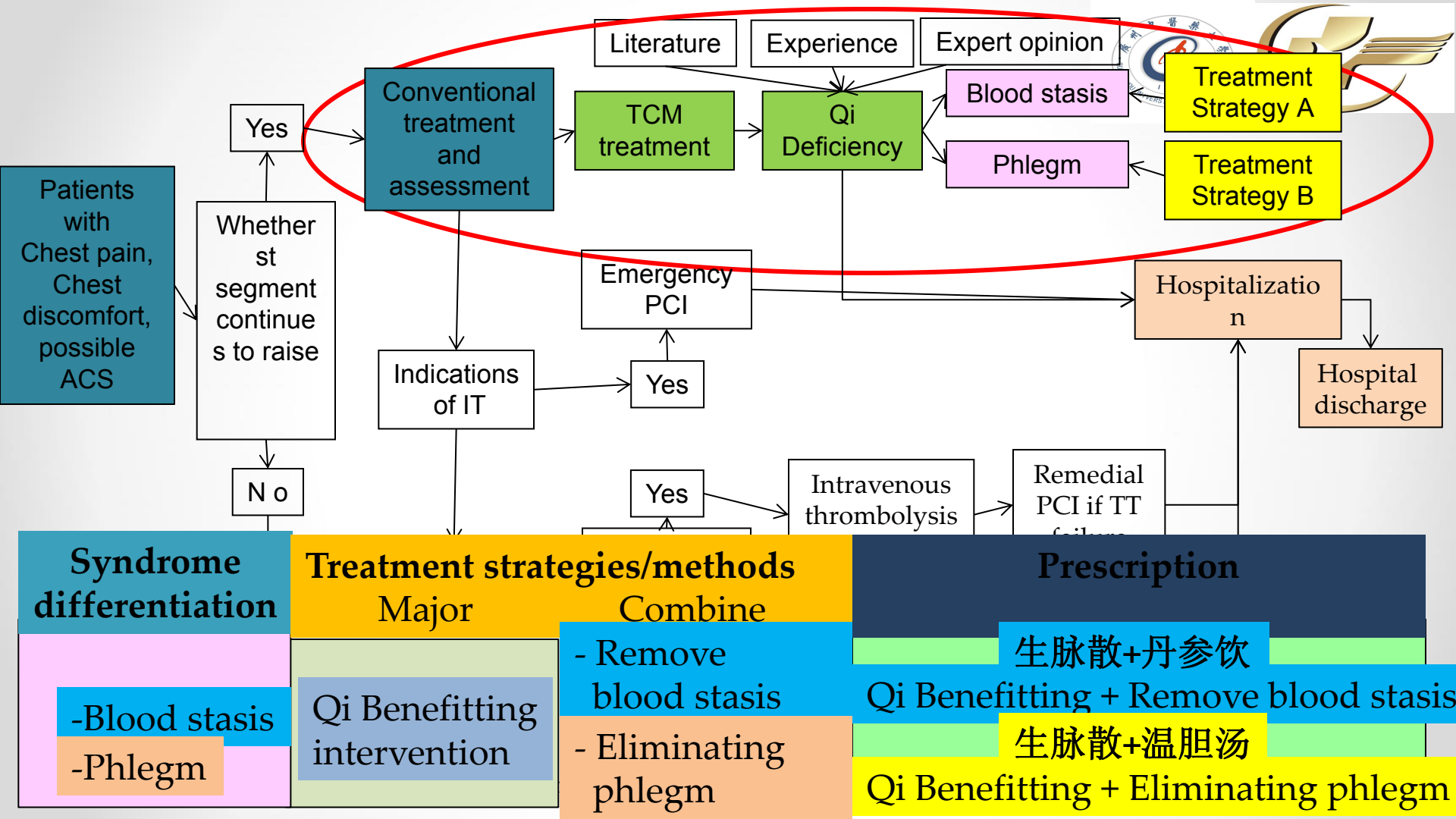| Syndrome differentiation	Treatment strategies/methods		Prescription
	Major	Combine	
-Blood stasis	Qi Benefitting intervention	- Remove blood stasis	生脉散+丹参饮
			Qi Benefitting + Remove blood stasis
-Phlegm		- Eliminating phlegm	生脉散+温胆汤
			Qi Benefitting + Eliminating phlegm

TABLE 1: Demographic and clinical features of patients.

Variable	Intervention group (n = 197)	Historical control group (n = 405)

Objective. To determine
outcomes for patients w
197 consecutive patients
These patients were enr
patients with AMI from
CPs were implemented.
(MACEs) during hospit
length of hospital stay (9
versus 52866.0 ± 35404.
hospitalization period (2
the clinical pathways ba:
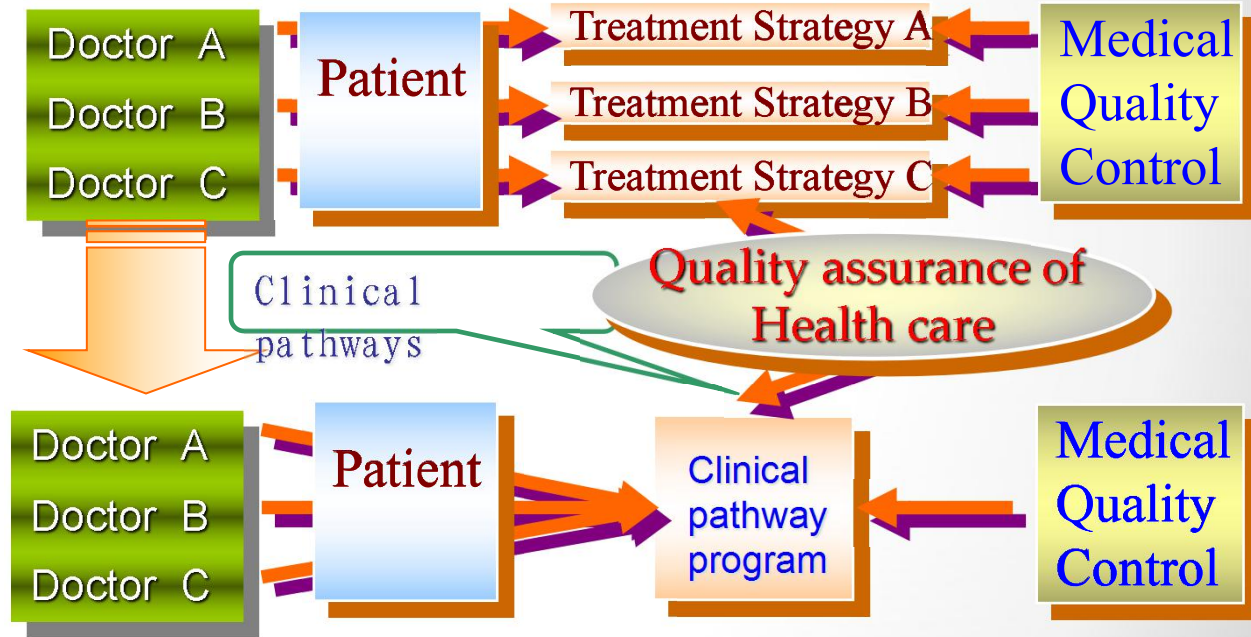
Clinical pattern
  STEMI
  NSTEMI

TABLE 6: Individual and combined outcome measure of MACE occurrence during hospitalization.

Variable	Intervention group	Historical group	P
Death	3 (1.5)	22 (5.4)	0.03*
Nonfatal MI	1 (0.5)	1 (0.2)	0.55*
Stent thrombosis	1 (0.5)	2 (0.5)	1.0*
TVR	0 (0)	3 (0.7)	0.56*
Total	5 (2.5)	28 (6.9)	0.03

*Using the exact probability method; MI: myocardial reinfarction; TVR: target vessel revascularization.

Differences between classic diagnosis/treatment model and the management of clinical pathways

- Which may:

  - Enhance medical quality

  - Medical safety assurance

  - Decline waste of medical resources

  - Provide best health care service

To balance individualized treatment strategy and the regulated clinical pathways

•We can stop the level of treatment strategy regulation at any of these stages, depending on the degree of consensus among the doctors :

•1)Same treatment principle—Yes(continue to next level)/No(stop)

•2)Same method of treatment—Yes(continue to next level)/No(stop)

•3)Same Recipe/or same advised therapy—Yes(continue to next level)/No(stop)

•4)Same dose for each herb/ same therapeutic dose of the non-pharmacological intervention

BMC
Medical Research Methodology

RESEA

Results

Com
with
proc

A total o... ...04 records with a p... ...ry diagnosis of AIS

Darong Wu
Liuer Ye[4],

Patient's Situation

Treatment strategies

Reward value of the corresponding treatment strategies

Table 8 Example of states within which patient's pattern of Chinese medicine was *Yin*

Code*	State						Cases	Stage 1					Rewards at t_2	Cases	Stage 2					Rewards at t_3
	i_1	i_2	i_3	i_4	i_5	i_6		a_1	a_2	a_3	a_4	a_5			a_1	a_2	a_3	a_4	a_5	
(10036)	3	1	0	1	2	1	122	0	1	0	1	1	1.00	127	0	1	0		1	1.00
(10037)	3	1	0	1	2	2	130	0	1	0	1	1	4.00	119	0	0		0	1	4.00
(10038)	3	1	0	1	2	3	51	1	0	0	0	1	6.28	60		0	0	1	4.67

*each state is coded difference according to the sequence of composing of the six characteristics.

Table 9 Examples of ...

Code	i_1	i_2	i_3	i_4	i_5	...	...						Rewards at t_3					a_4	a_5	Rewards at t_3
(10031)	3	1	0	1	1	1	57	0	0	1	0	1	1.00	51	1	0	0	1	1	1.00
(10032)	3	1	0	1	1	2	40	0	0	0	0	1	5.00	41	1	0	1	1	0	5.00
(10033)	3	1	0	1	1	3	38	0	0	1	1	1	7.33	39	0	1	0	0	1	6.00

Protocol of stroke CPWs

Table 1
CP protocol.

Time	**First 24 h**	
Evaluation	■ Physical examination ■ GCS ■ NIHSS ■ Noncontrast brain CT or brain MR ■ Evaluation and management of complications	
Orders	■ Blood pressure management (evaluation and application) ■ Temperature management (evaluation and application) ■ Aspirin application (evaluation and application) ■ Management of complication ■ Management of concomitant diseases ■ Rehabilitation ■ Blood tests: blood routine, blood sugar, electrolyte, coagulation function, ■ Markers of cardiac ischemia, renal and liver function, lipid profiles ■ ECG	
Chinese medicine	■ Decoction based on Yin and Yang syndrome ■ Relief of blood stasis ■ Purgation ■ Acupuncture	
Nursing	■ Swallow function evaluation (evaluation and application) ■ Skin care (Norton scale) ■ Fall prevention (evaluation and application)	
Variation		
Signature		
Cost		

1 GDPHM

2 Beijing Tiantan Hospital

In-Hospital Treatments		
Time, d	Preparatory Items	Clinical Cares
1	1. The physical examination 2. Review of medical history 3. Develop a treatment plan 4. Assess neurological functions 5. Complete the first medical chart (baseline) 6. Brief patient family about treatments	1. Routine care for patients with stroke 2. Class I care 3. Diet control 4. Continue prior drug administration 5. Anticoagulation drugs 6. Blood, urine and stool tests, liver and kidney functions, electrolyte, blood glucose, thrombosis, blood lipid, and screening of common infectious diseases (hepatitis B, hepatitis C, syphilis and AIDS) 7. Antistreptolysin O test, ENA, antinuclear antibody, rheumatoid factor, fibrinogen, and protein C* 8. Chest radiographs, electrocardiography, brain MRI or computed tomography, and carotid ultrasound*
2	1. Examination of patients by physician 2. Assess neurological functions 3. Brief patient family 4. Adjust treatment plan if necessary 5. Consultation with other physicians (radiologists, surgeons, etc)*	1. Continue previous drug administration 2. Routine care for patients with stroke 3. Class I care† 4. Diet control 5. Anticoagulation drugs 6. Measure PT/INR if warfarin is prescribed* 7. Measure APTT if heparin is prescribed* 8. Anticoagulation drugs*
3	Same as day 2	
4–6	Same as day 2	
5–7	Discharge with prescription drug	

APTT indicates activated partial thromboplastin time; ENA, extractable nuclear antigens; PT/INR, prothrombin time/international normalized ration; TIA, transient ischemic attack.

1. Evaluation of clinical pathway in acute ischemic stroke: A comparative study. Euro J IM,2015
2. Reduction of Length of Stay and Costs Through the Implementation of Clinical Pathways for Stroke Management in China.stroke,2014

443 patients with diagnosis of ische

1639 patients with diagnosis of

144 patients excluded for d the inclusion and exclusion

CP
RCP

Table 1
CP protocol.

Time	
Evaluation	First 24 h
	■ Physical examination
	■ GCS
	■ NIHSS
	■ Noncontrast brain CT or brai
	■ Evaluation and management
Orders	■ Blood pressure management
	■ Temperature management (e
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	■ Rehabilitation
	■ Blood tests: blood routine, bl lation function,
	■ Markers of cardiac ischemia, profiles
	■ ECG
Chinese medicine	■ Decoction based on Yin and
	■ Relief of blood stasis
	■ Purgation
	■ Acupuncture
Nursing	■ Swallow function evaluation
	■ Skin care (Norton scale)
	■ Fall prevention (evaluation a
Variation Signature Cost	

Table 5
The odds ratio and coefficient of CP for LOS, hospitalization cost and clinical outcomes.

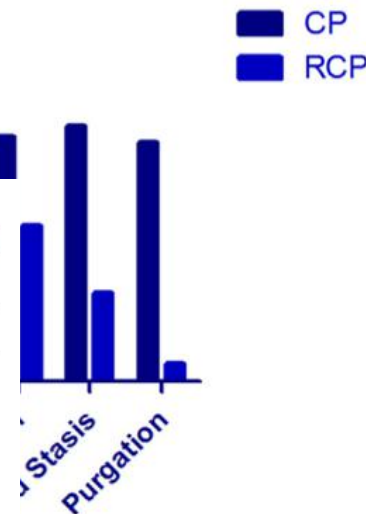|		CP	RCP	P value
Length of stay	Model 1	1.0	4.0 (2.3, 5.8)	<0.001
	Model 2	1.0	4.5 (2.6, 6.3)	<0.001
	Model 3	1.0	4.0 (1.5, 6.0)	0.002
Cost	Model 1	1.0	5744.5 (3237.6, 8251.4)	<0.001
	Model 2	1.0	7163.7 (4575.6.6, 9751.7)	<0.001
	Model 3	1.0	7850.3 (4306.3, 11,394.3)	<0.001
Good outcome	Model 1	1.0	0.48 (0.35, 0.64)	<0.001
	Model 2	1.0	0.48 (0.35, 0.66)	<0.001
	Model 3	1.0	0.62 (0.40, 0.96)	0.034

Model 1 adjusted for age and sex.
Model 2 adjusted for age, sex, histories of diabetes mellitus, hypertension, coronary heart disease, dyslipidemia, TIA, cerebral infarction, artrial fibrillation, smoke, alcohol and family history of stroke.
Model 3 adjusted for baseline NIHSS score and year of admission on basis of Model 2.

Stasis Purgation

l points nd NCPgroup

between CP and RCP group.

Conclusion: Combined model on the basis of disease and pattern of Chinese medicine

- **With both biomedical and TCM pattern diagnosis**

- **Apply all kinds of TCM treatments**
  - According to the diagnosed pattern of Chinese medicine and at the meantime take the disease biomedical diagnosis into consideration

- **More widely adopted in TCM/IM hospitals**
  - Both for out-patient and in-patient services

- **Safety issues**
  - Drug-Herb, Drug-Chinese Patent Products or Drug-Food interactions

(3) Symptom-based model
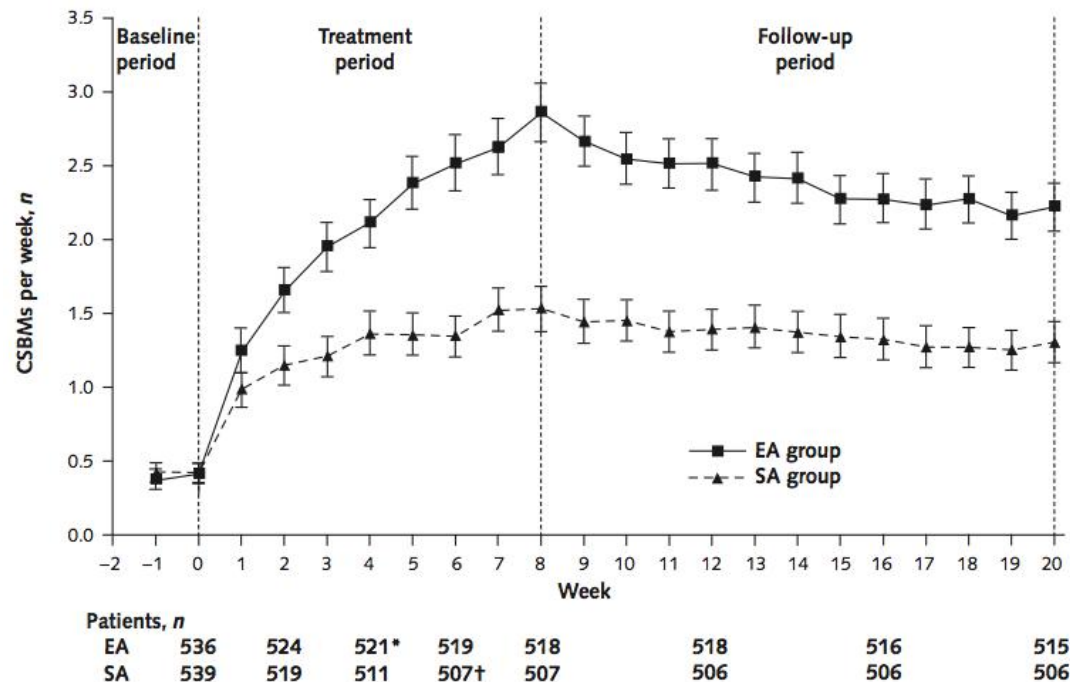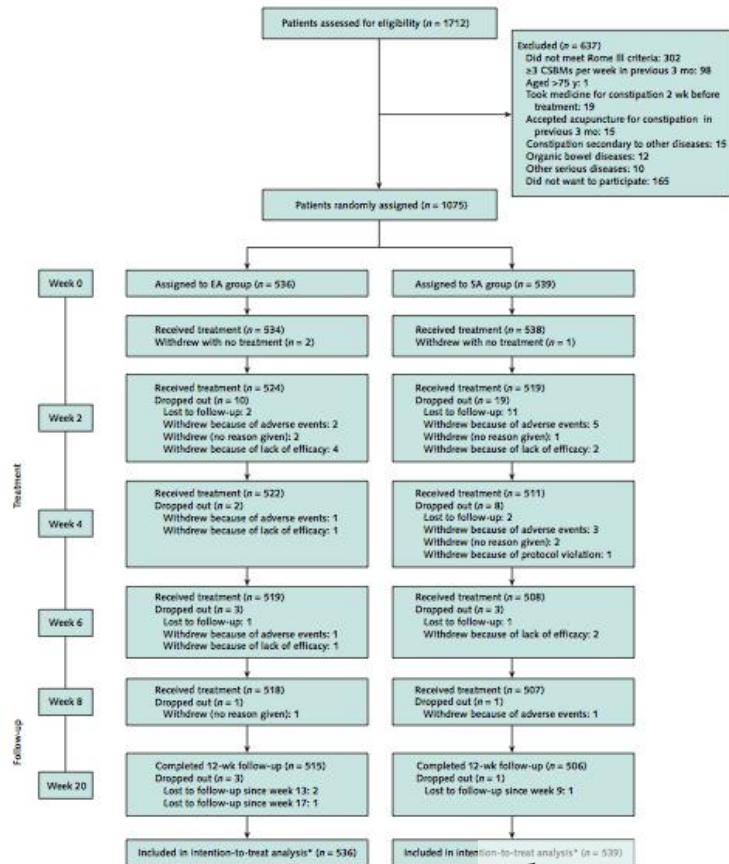
There were 1075 patients (536:539) included from 15 sites.
Treatment duration: 8 weeks, 28 section of therapy
Follow-up: 12 weeks

Conclusion: Symptom-based model

- For in-patient, biomedical diagnosis, yes; For out-patient, biomedical diagnosis, not necessary

- Fixed treatment with or without high level evidences

- Promising in a number of situations, for instance, pain, fatigue, nausea, tight, etc.

The concerns in IM service quality

Effective

Accessible

Equitable

(1) Lack of IM service in countryside and remote mountainous regions

(2)Young people accept less IM service

(3) Indications could not get proper IM service

(4) In-patients have trouble to get IM

(5) Long time to wait for IM service

(6) Deficiency of skill training

(7) Lack of high quality clinical guidance

(8) Singleness of therapies, lack of follow-up

(9)Lack of IM standards

(10)Lack of high quality clinical evidence

Concerns in IM service quality

(11) Lack enough education background for description

(12) Drug-herb/drug-food/drug Chinese Patent Products interactions

(13)false advertisement exaggerating effect

(14) Less of knowledge of IM indications

(15) Fearing needling

(16) Worry about IM causing infectious diseases

(17) Fatigue of HCW

(18)Inadequate instrument

(19)Short for charged service kinds

(20) Low service price

(21)Lack of IM technician

Safe

Acceptable

Efficient

Indications for the limitation of proper IM services

IM therapy

(1) Singleness of therapies

(2) Inadequate study and training of special IM therapies

(6) Lack of complementary condition to various therapies, e.g. smoke controlling instrument for moxibustio

(7) Lack of IM technician

complementary condition

Politics

(3) Some IM therapies haven't been charged

(8) lack of training

(9) Senior IM physician lower the requirement for junior because of affect from narrow disease spectrum knowledge

Physician

Discipline setting

(4) Patients was screened based on disease before having chance to choose IM

(5) Patients choose to the department of his/her disease

(10) Patients are not clear on IM indications.

(11) Lots of patients lack the knowledge of IM.

Patient

Indications for the limitation of proper IM services

Conclusion

- The trend of integrative medicine, especially in inpatient service, cannot be reversed

- The steps of integration need to be based on evidence

- Evidence is a relative rather than absolute concept, when no highly recognized evidences exist, to know as much as you can by following the principle of evidence-based medicine

- "To listen to both sides, you will be enlightened" It will be good for patients, if biomedical doctors and TM/IM doctors may learn more from each other

Acknowledgement