

# Drug Addiction treatment and rehabilitation in China

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# Min Zhao, M.D&Ph.D

**Professor of Psychiatry at Shanghai Jiao Tong University**  
**Vice president of Shanghai Mental Health Center (SMHC)**  
**The director of drug abuse research center at SMHC**



- **Member of UNODC informal scientific network**
- **vice president of Chinese Association on Drug Abuse Prevention and Treatment (CDAPT)**
- **Vice director of Chinese drug control expert Committee**
- **Associate Editor of Addiction, International Journal of Mental Health & Addiction**

- **Member of international advisory group and FSCG of ICD-11 MBD and led the field study in China**
- **Worked on more than 10 national and international research projects focus on drug abuse clinical research**
- **More than 200 (SCI 60) papers and 6 books**

# Drug Addiction treatment and rehabilitation in China

## Outlines

- Drug abuse and related policy of drug control in China
- Drug abuse treatment and rehabilitaiton in China
- About our group: related research and future direction

# Drug abuse in China

- It's still a large number of drug users in CHINA although the growth rate has slowed down. The major abused drugs are **Methamphetamine, Heroin and Ketamine**.
- The abuse of synthetic drugs such as **Methamphetamine** continues to increase, with 80% of newly discovered users abusing synthetic drugs.
- Among traditional drugs, Heroin abuse increase is slowing.
- People under 35 is the main abusing group. Wide distribution, especially some stars.

2.4 million

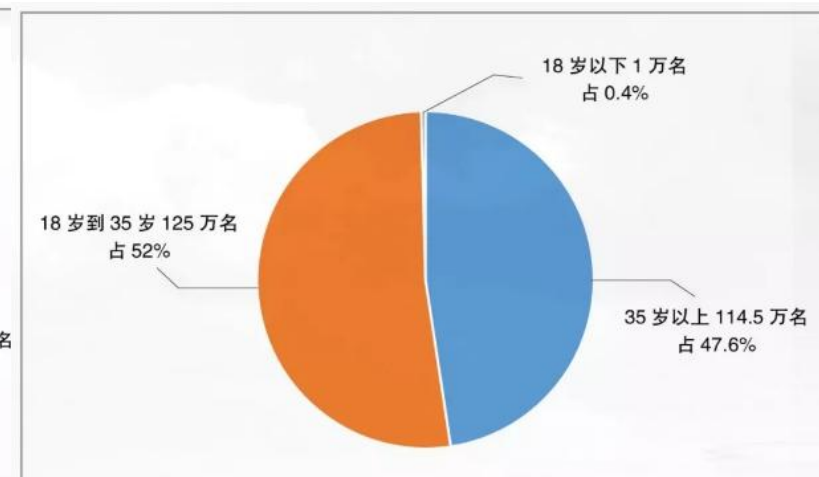
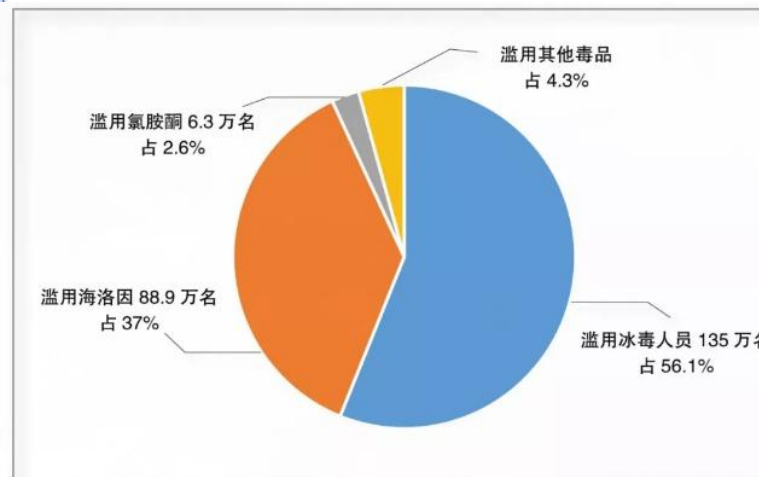
Drug users until  
the end of 2018

89.2

Seized drugs  
in 2017 (tons)

70%

Proportion of  
seized drugs in  
CHINA



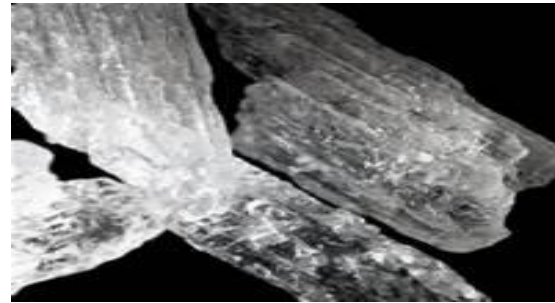


# New psychoactive substances (NPS)

NPS is often mixed with other drugs for sale and is abused mainly in European and American countries. 170 new psychoactive substances (including 25 fentanyls) have been identified in China, and **the fentanyls have been included in regulations since May 1, 2019**



First Generation Drugs  
Heroin Cocaine



Second generation drugs  
Methamphetamine  
Ketamine



Third generation drugs  
New psychoactive  
substances



# CHINA attaches great importance as public health issue

- **Drugs Control Law of the People's Republic of China (2018.6) : Compulsory, Voluntary and Community Detoxification**
- **State Council of the PRC <Drug Control Regulations> ( 2011.6 )**
- **Planning of Healthy CHINA Plan 2030 ( 2016 )**



The Fourth chapter: **Reducing unsafe sexual behavior and drugs harm.**

Popularizing knowledge about the harm of drugs, response and treatment of drug use, etc. Strengthening the national health service system construction. Early detection and treatment of addicts. Establishing a detoxification rehabilitation model including physiological detoxification, mental rehabilitation, employment support and social reintegration. Minimize the social harm of drugs

- **Program for the Construction of Social Psychological Service System (2018.11)**

Improving the psychological communication mechanism of the special population, such as **drug addicts of compulsory isolation, community rehabilitation, drug maintenance therapy and voluntary detoxification.**

Formulating individualized counseling programs.

**The coverage rate** of individualized psychological counseling for special groups should be **more than 60%.**

# Drug abuse treatment in China

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## Drug dependence was regarded as chronic disease

- ◆ Individuals with Drug dependent should be treated
- ◆ Patients are encouraged to voluntary treatment
- ◆ compulsory drug rehabilitation should have clinics to provide treatment
- ◆ Treatment should be available to the individuals with drug dependence in prison or detention
- ◆ social support should be offered to the drug dependence individuals in community and discrimination are prohibited



June 1, 2013

# Drug Rehabilitation in CHINA

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**Complementary advantages of voluntary detoxification, community detoxification, compulsory isolation detoxification, community rehabilitation, methadone maintenance treatment(MMT) and other detoxification measures.  
Further improving the diversified detoxification rehabilitation model.**



# **Drug rehabilitation in CHINA: Community**

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**A total of more than one million drug addicts have received community rehabilitation since “8·31” project in 2017 till 2019**



**Number of Community Drug Rehabilitation Institutions nationwide**



**Professional Drug Control social workers**



- **Acceptance of Community Drug Rehabilitation**
- **Number of Community Rehabilitation individuals**



# Drug rehabilitation in CHINA: Compulsory

According to the different time periods from entry to exit of drug addicts, compulsory rehab set up staged and rrelated area for **physiological detoxification, education adaptation, rehabilitation consolidation and re-enter society preparation** providing 1-2 years of specialized services for drug rehabilitation.

Numbers of  
compulsory center

730

Average annual  
number of  
patients

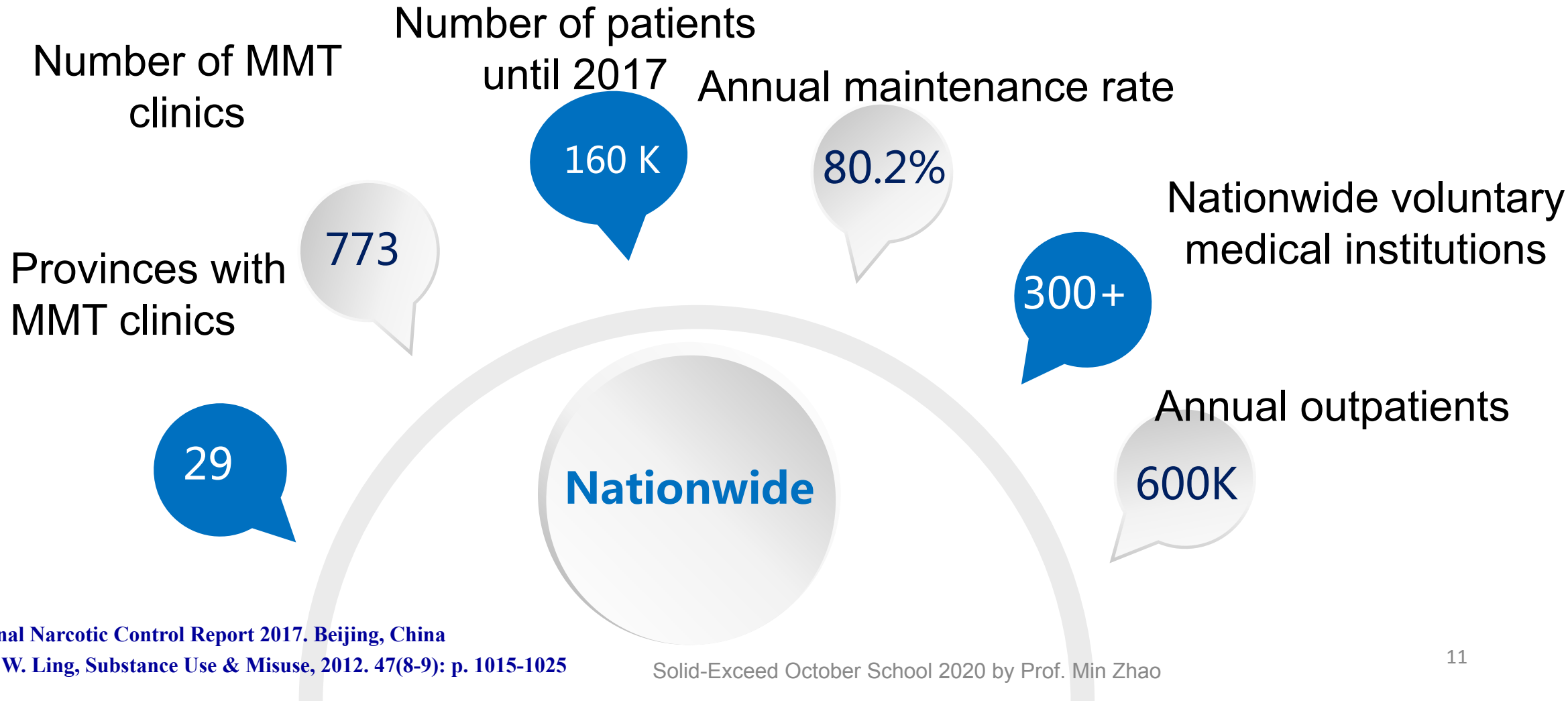
300 K

Improving treatment and drug rehabilitation through **government purchase of services, introduction of social medical institutions and referral**, etc.



- Physiological detoxification area
- Educational adaptation area
- Rehabilitation area
- Re-enter society area

# Drug rehabilitation in CHINA: Voluntary



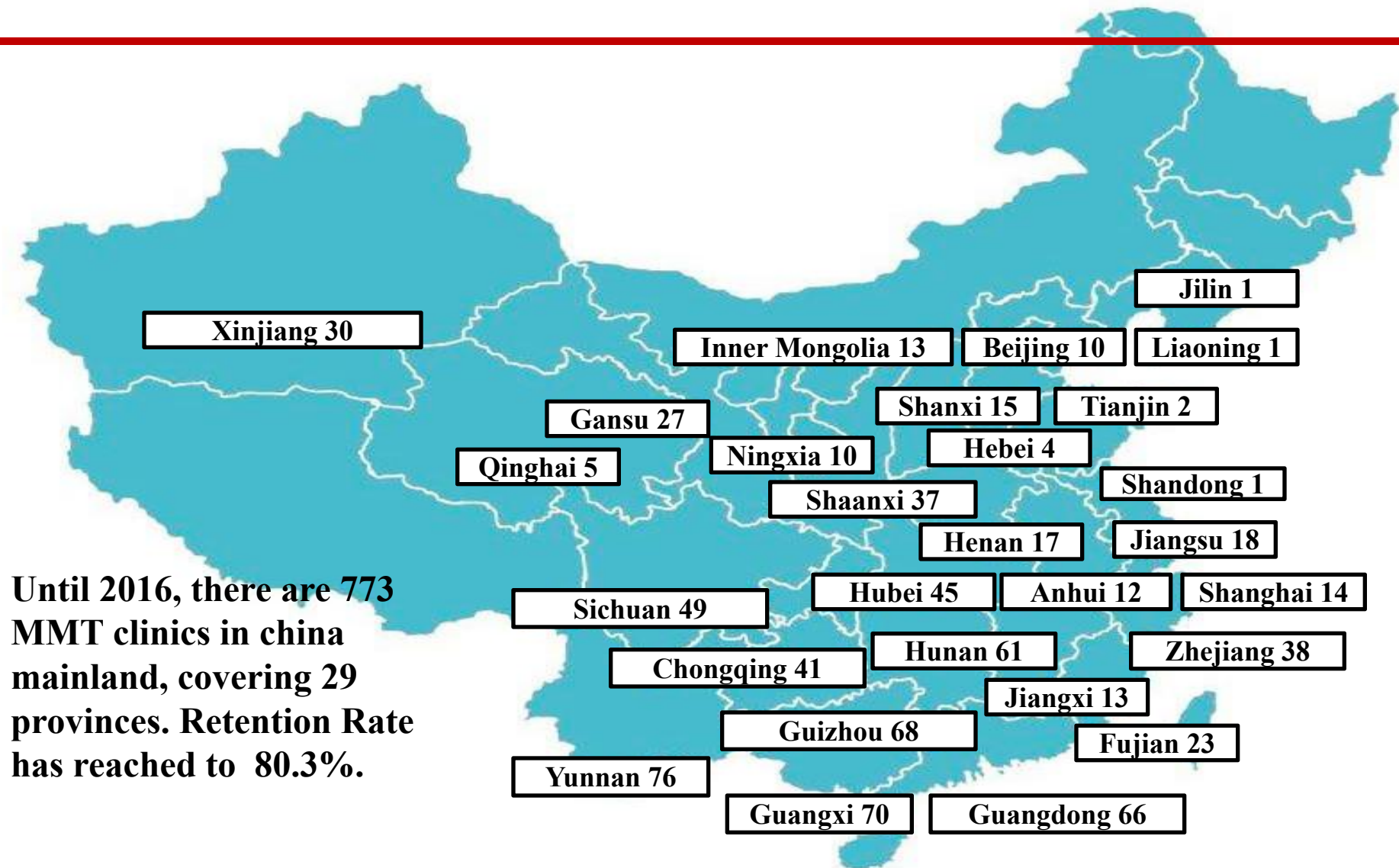
# Drug rehabilitation in CHINA: Voluntary

- **Methadone Maintenance Treatment(MMT)** for serious opioid addicts in the community, help reducing related harms such as AIDS/STD
- To encourage the establishment of **voluntary detoxification medical institutions** and drug addiction treatment departments in general medical institutions

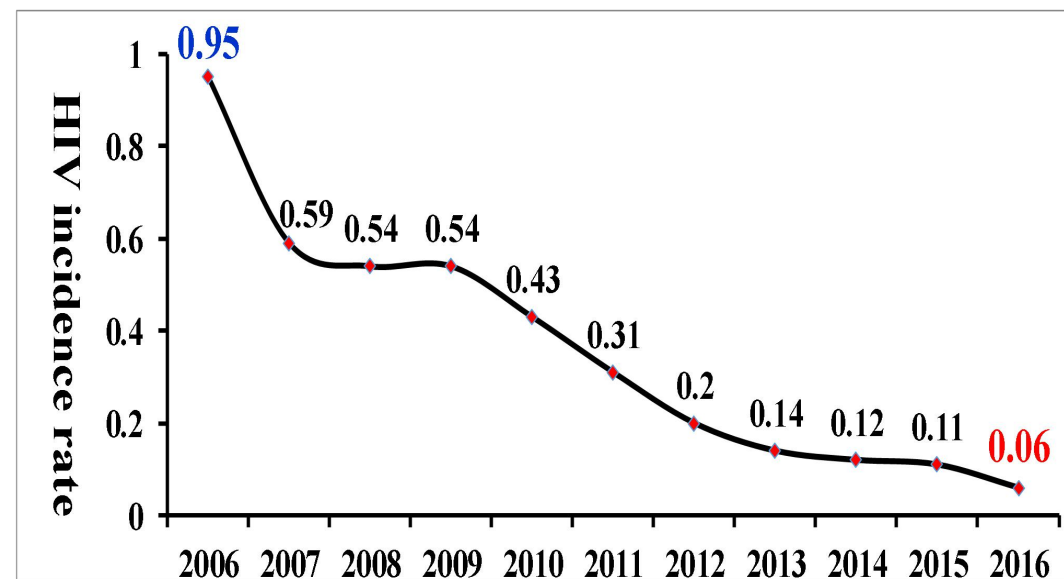
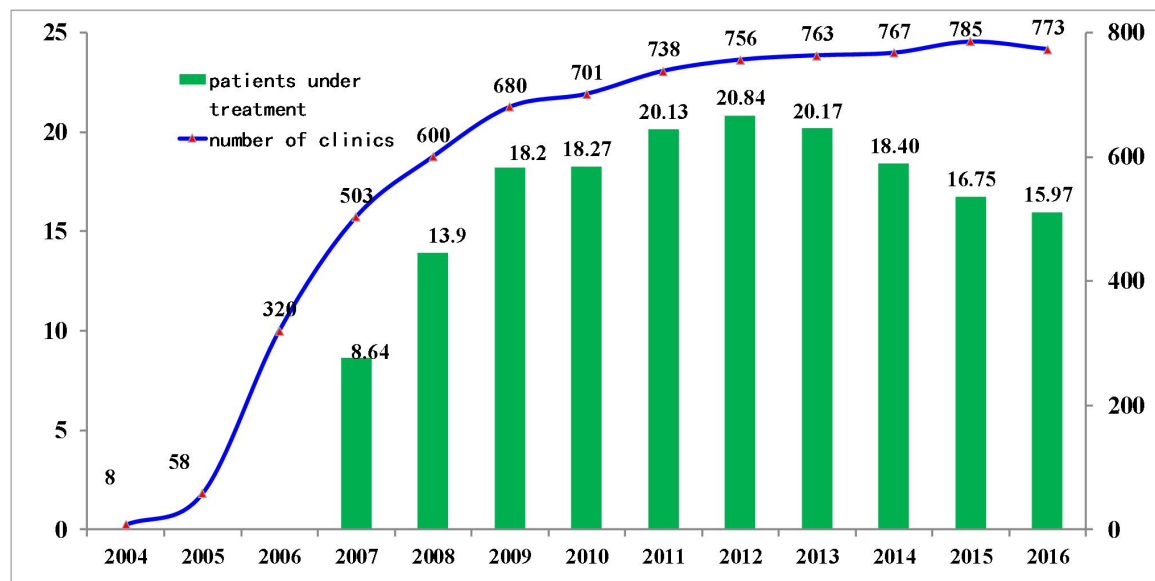




# HIV/AIDS prevention in China



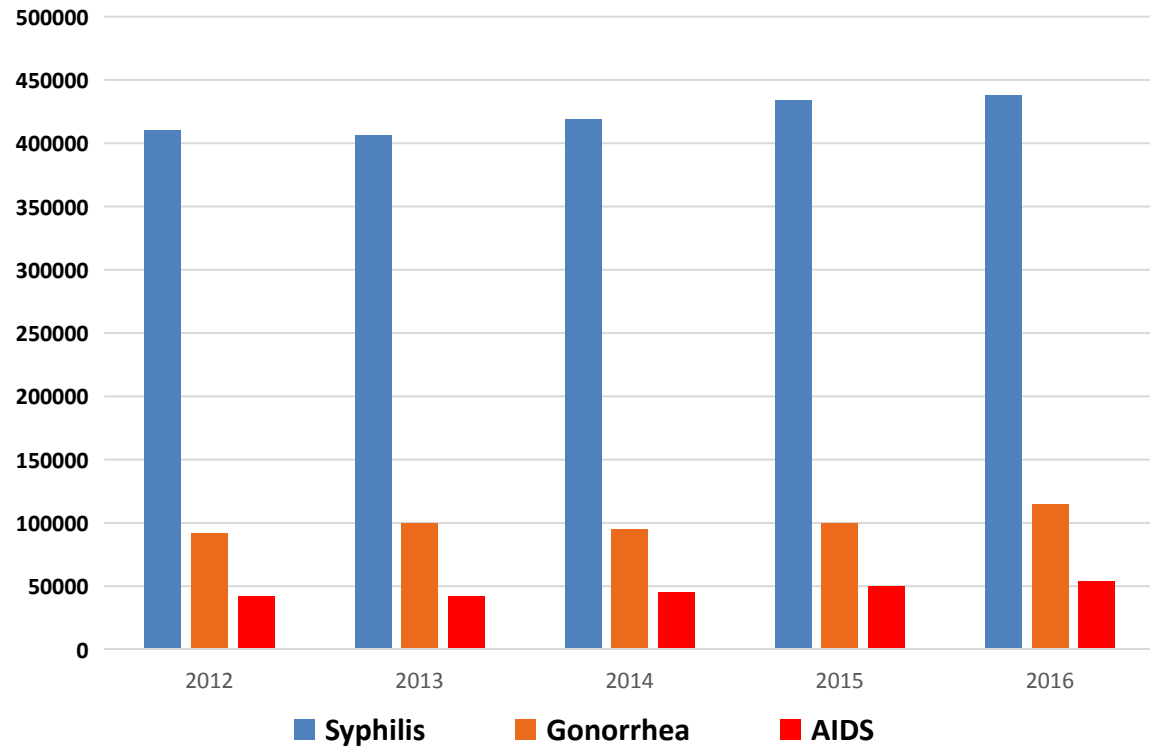
# Effectiveness of MMT in HIV prevention



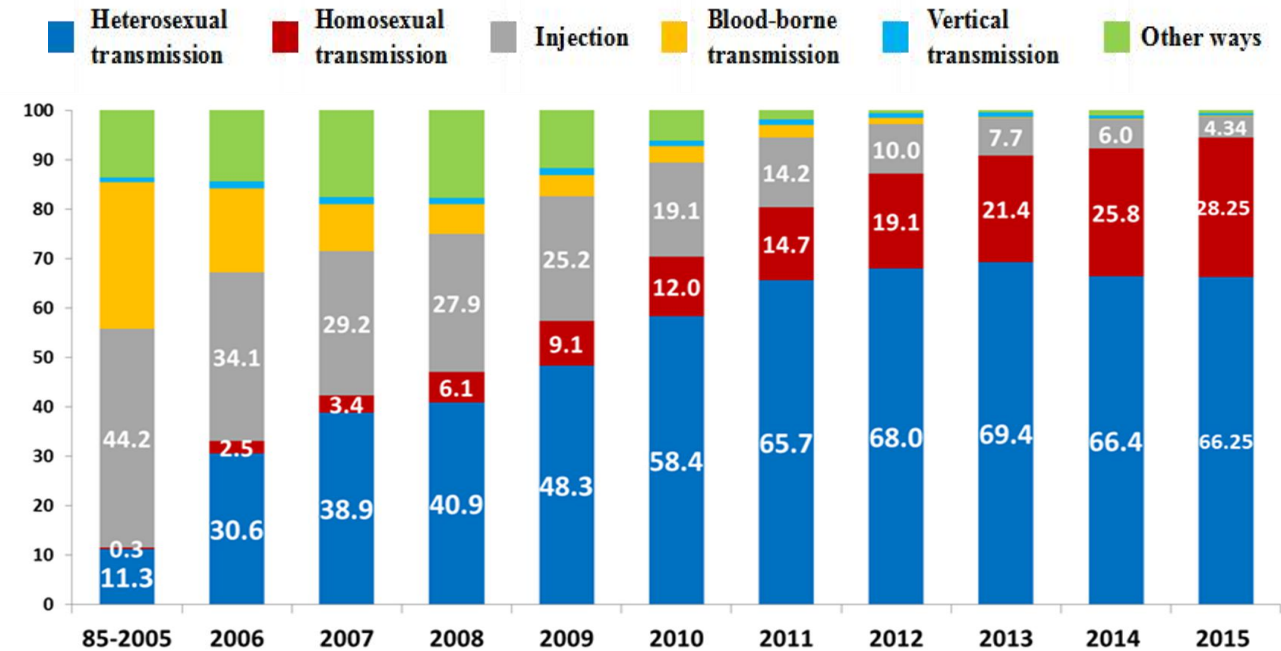
- The rate of HIV infection in MMT patients: 0.06%; 0.03% in 2018
- Prevention of 17,000 new HIV infections
- Reduction of 130 tons of Heroin
- Prevention of \$123 billion drug trafficking

# STD/AIDS infection in China

STD/AIDS morbidity in CHINA



Ways of newly-found HIV/AIDS transmission in China



The annual work report of Chinese CDC, Capital Journal of Public Health, 2018

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# Drug abuse treatment in China

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## **Muti-system and departments work together closely for Drug abuse prevention and treatment**

- **Health departments (voluntary drug abuse treatment, guildlines, professonal support)**
- **Public security system (drug control and indentify drug users, compulsory drug dependent treatment)**
- **Justice system (compulsory drug abuse rehabilitation)**
- **Community (social support, commutity drug abuse treatment and rehablitaion)**
- **NGO, proffessional associations...**
- **preventions: all related system and department**



# Drug abuse treatment in China

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**Drug abuse treatment are offered by a variety of professionals by work closely**

- **Medical doctors**
- **Psychiatrists**
- **Psychologists**
- **Certified drug abuse counsellors**
- **Social Workers**
- **Nurses**
- **Case managers**
- **Other related professionals**



# HIV/AIDS prevention in China

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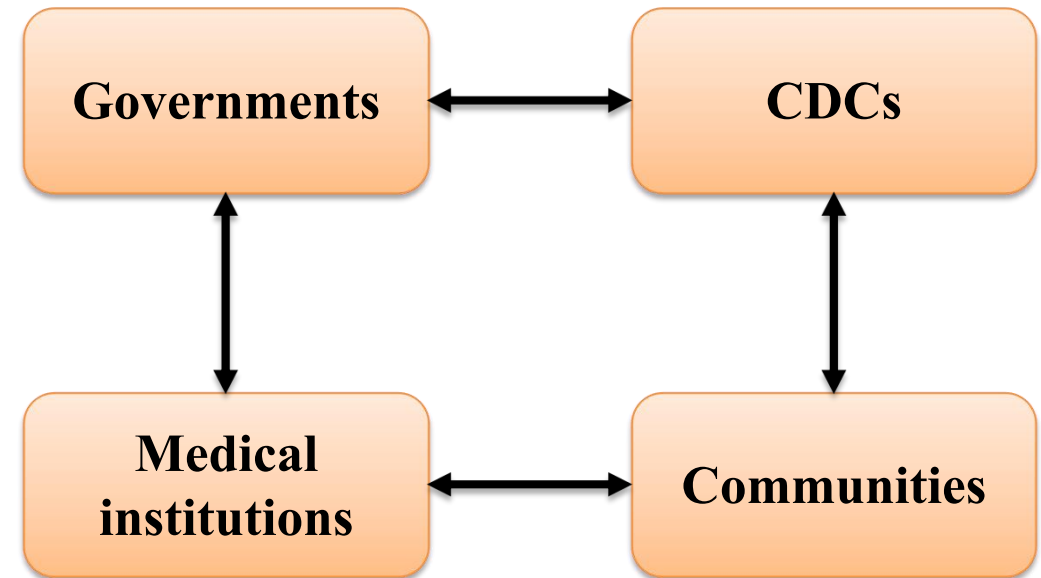
- **Education:** laws and regulations related to anti-drug law, knowledge about HIV/AIDS 、 HCV and syphilis treatments and prevention.
- **Consultation:** Psychological Counseling, psychological rehabilitation therapy and behavior modification.
- **Testing:** HIV/AIDS, HCV, syphilis.
- **Follow-up, treatment and referral:** cooperating with communities and Medical institutions
- **Monitoring:** working with CDC and other government department to monitoring the situation of drug use

# Drug abuse and HIV/AIDS prevention: integrated efforts

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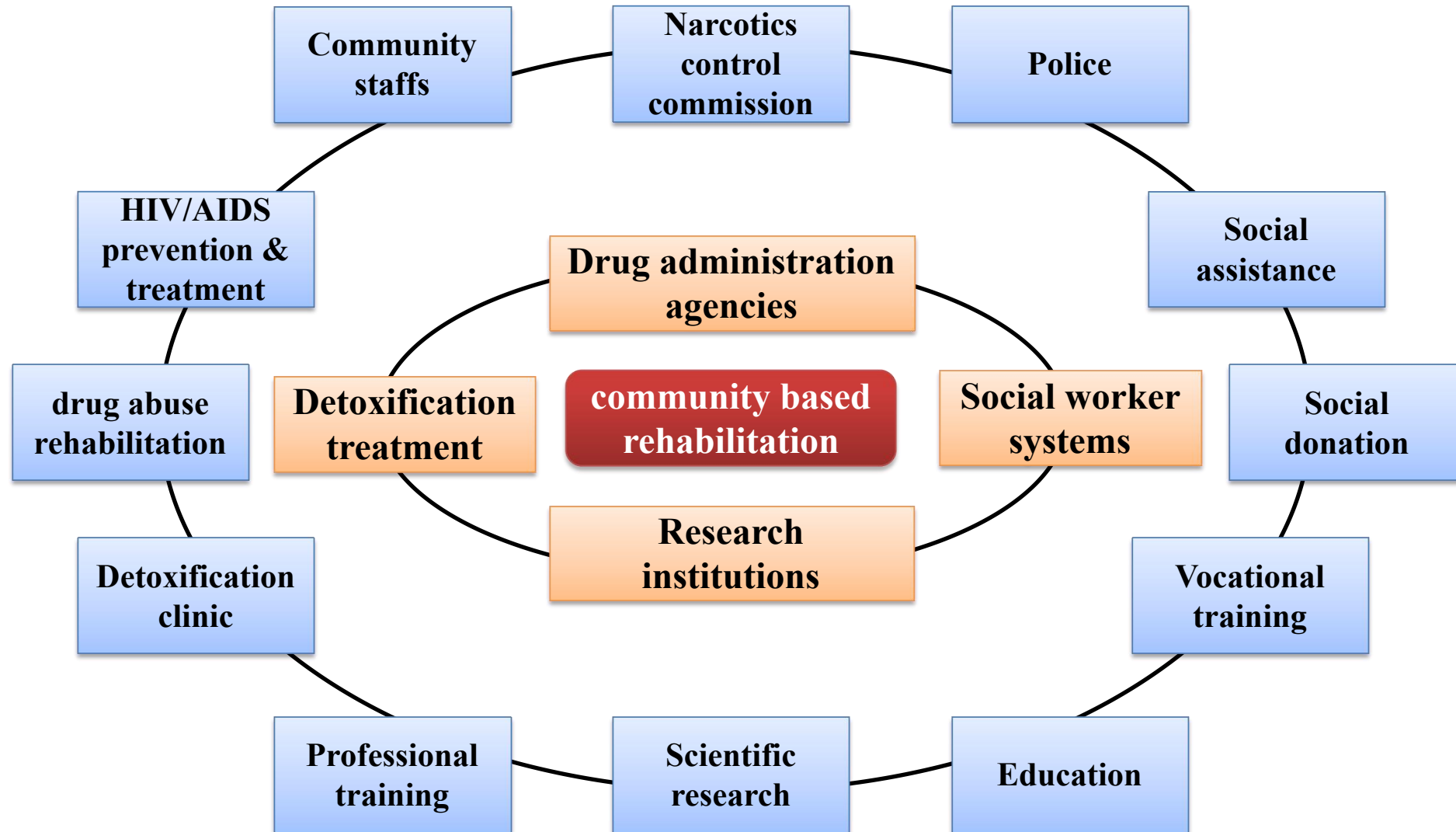
## ◆ Integrated efforts to enhance program benefits

- ✓ Part of expense and place for health examination are covered by CDC
- ✓ Co-ordination mechanism is established among governments, medical institutions, CDCs and communities



Take shanghai as example

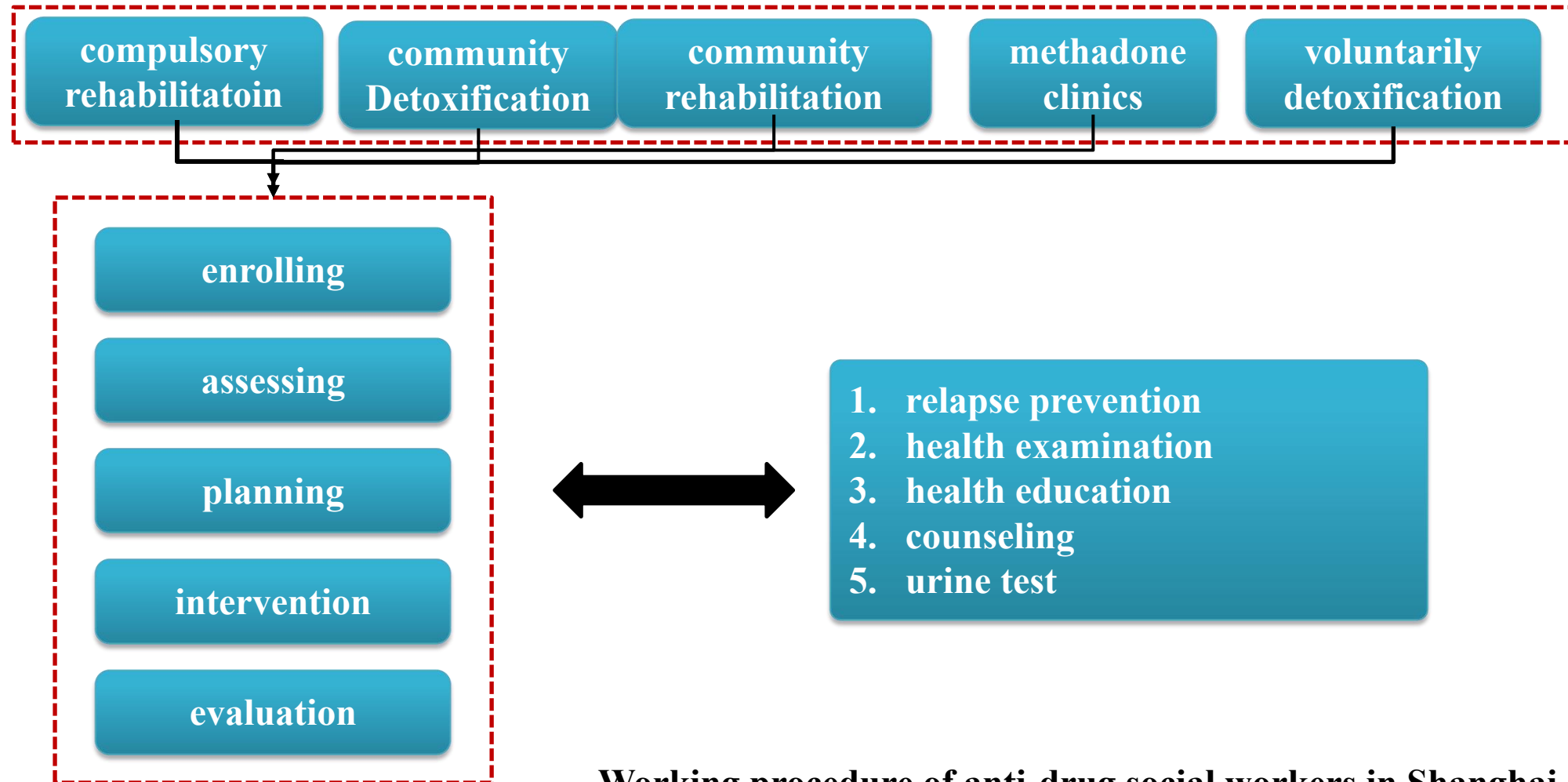




## **Integrated intervention system for drug and HIV/AIDS prevention and treatment**

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# Drug abuse and HIV/AIDS treatment in community



**Working procedure of anti-drug social workers in Shanghai**

# Drug abuse and HIV/AIDS treatment in Community

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- ◆ **Focusing on general health including HIV/AIDS**
  - ✓ **Guiding patients mainly focusing their own health**
  - ✓ **Health examination including HIV testing is offered for free to drug abusers**
  - ✓ **Patients are encouraged to participant these free examination**



# Drug abuse and HIV/AIDS treatment in Community

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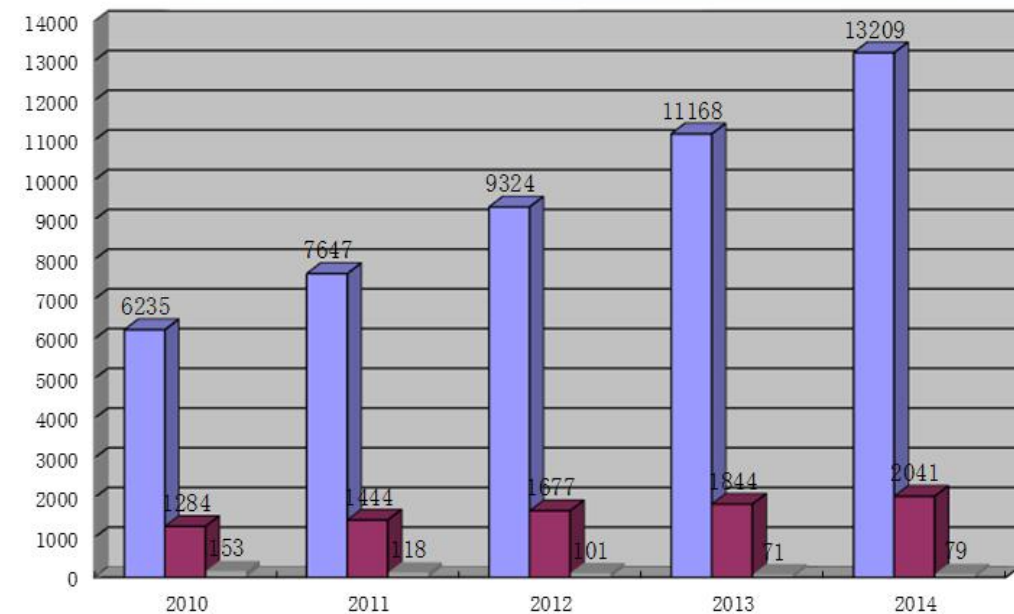
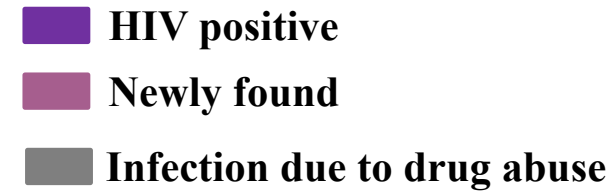
- ◆ Health education is throughout the whole process of treatment
  - ✓ community health education
  - ✓ individual health education
  - ✓ health education for community residents
- ◆ Doctors and nurses, social workers, drug abusers as well as community residents are all included



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# Drug abuse and HIV/AIDS treatment in Rehab center



- More than 1500 Social worker (1:50 of the registered drug dependents)
- 85% coverages of the community rehabilitation
- HIV/AIDS in drug users is very low
- 3 years of abstinence, about 30%
- 65.5% of the previous of drug dependents had works



# Drug and HIV/AIDS treatment in Rehabi Center

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- Treatment and rehabilitation orientated and the drug dependents is regarded as patients, as well as victims and law-breakers
- Stage based evaluation and individualized intervention
- Professional training and collaborated with health and other related system are highly stressed
- Evidence based intervention is stressed
- Comprehensive rehabilitation to address the individualized treatment needs, such as psychiatric comorbidity, HIV/AIDS, physical health,
- medical, psychobehaviour, psychosocial intervention, vocational training, etc.



# Treatment Goals and Basic Principles

## Treatment Goals

- **Prevention First**
- **To control or stop drug use**
- **To prevent and reduce relapse**
- **To improve physical and mental health**
- **To improve family and social functions**
- **To promote social reintegration**
- **To reduce related hazards**

## Basic Principles

- **Individual comprehensive treatment measures**
- **Adequate treatment period, for most patients at least three months**
- **Emphasis on Psychobehavioral Therapy**
- **Active treatment of coexisting mental disorders**

# Three stages and methods of treatment

**Detoxification  
treatment**

**Gradually Reducing  
Drug Substitution**

**Rehabilitation  
and Relapse  
prevention**

**Psychobehavioral  
Therapy**

**Social  
reintegration**

**Social support and  
intervention**

**Comprehensive  
treatment**





# Medication treatment

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- **Prevention of Addiction :  
Vaccine/Antibody**
- **Rescue of acute poisoning :  
Antagonist/Antibody、Naloxone**
- **Detoxification Treatment**
- **Relapse prevention**
  - **To reduce positive intensification**
  - **To improve cognitive function**



# Psychosocial Intervention


- **Motivational Reinforcement Therapy**
- **Cognitive Behavioral Therapy : Relapse Prevention、 Mindfulness-Based Therapy**
- **Behavior Therapy : Reward and Punishment Treatment, Clue Exposure Treatment, Aversion Treatment, Conditional Management**
- **Expression Support Psychotherapy**
- **Individual Drug Counseling**
- **Group Psychotherapy**

- **Family Therapy : Systemic Family Treatment, Structural Family Therapy**
- **Adolescent Behavior Therapy**
- **Multidimensional Family Therapy : Multisystem Therapy**
- **Living Skill Training**
- **Community Treatment**
- **Self-help Groups : AA,NA,CA, etc.**
- **Follow-up services : Halfway Houses**

# The Goal of Psychosocial Intervention

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**Focus on the causes and consequences of drug use and relapse**

- **To improve treatment compliance**
  - **To improve family relations**
  - **To improve mental skills**
  - **To reshape personality**
  - **Healthy lifestyle**
- 
- **Enhance resistance to drugs**
  - **Psychological behavior correction**
  - **Healthy social life**
  - **Engaging in proper occupation**

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# Shanghai Drug Addiction Treatment Center

- Established in 1997 and the only public voluntary rehabilitation center in Shanghai
- The main division of the National Clinical Key Specialty
- Key Discipline in Shanghai
- Clinical work: Outpatient and inpatient services for addiction
- Teaching and Training: MD & Ph.D. student supervision, national training program in Addiction
- TOT training, 2006-2011, Sino-US joint training programs on drug abuse treatment, focus on psychosocial interventions



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# Psychological intervention for heroin dependence

Settings	Intervention	Result	Reference
Rehabilitation center	Relapse prevention training	Relapse rate decreased by 20% in 3 months	The American Journal of Drug and Alcohol Abuse. 2011, 37(3): 141–147.
Rehabilitation center	CET+biofeedback	Craving reduced	Physiology & Behavior, 2014 ,130:34-39 .
MMT clinic	CM	Improve 6 months' retention rate in Kunming, Shanghai urine drug negative rate	Addiction, 2011 (106) :1081-1089.
community	Psychosocial comprehensive intervention	6 months' positive urine rate is low, improve the psychological and social function	Journal of Addiction Medicine (2015)
community	Rehabilitation management	Raise employment, reduce the rate of illegal crime again	J Subst Abuse Treat. 2013, 44(1):78-83.
MMT clinic	CBT	Reduce drug use and stress levels, and improve employment	PLoS ONE (2015)

# Longitudinal study on drug dependence in China

## Polydrug use patterns and their impact on relapse among heroin-dependent patients in Shanghai, China

Article October 2018 · Addiction

Tianzhen Chen · Na Zhong · Jiang Du · [...] · Min Zhao

Aims To describe the polysubstance use patterns of heroin-dependent patients and understand the impact of polysubstance use patterns on relapse during the 5 years after completing compulsory rehabilitation programs. Design In this secondary ...

47 Reads · 8 Citations

## History of Alcohol and Opioid Use Impacts on the Long-Term Recovery Trajectories of Methamphetamine-Dependent Patients

June 2019 · Frontiers in Psychiatry 10:398 · [Follow journal](#)

DOI: [10.3389/fpsy.2019.00398](https://doi.org/10.3389/fpsy.2019.00398)

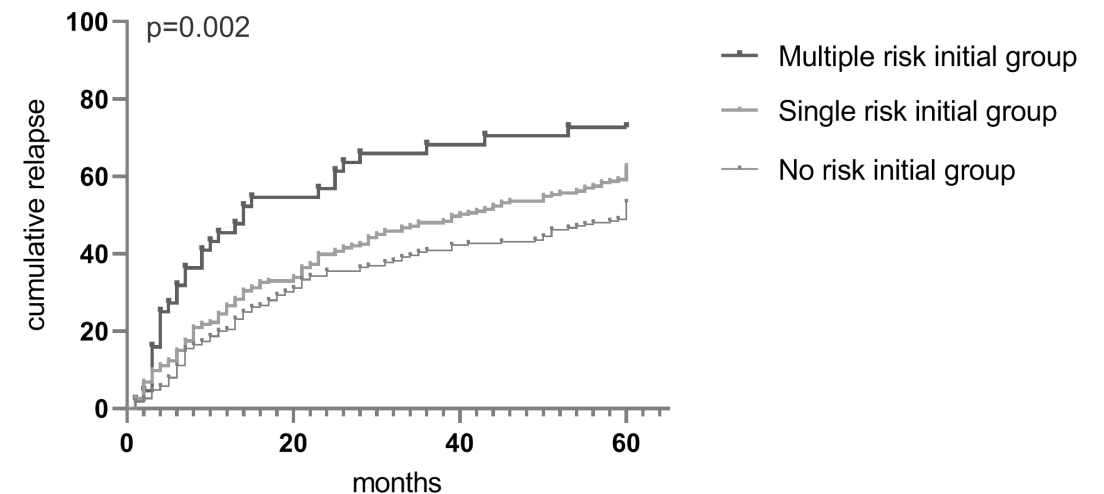
Haoye Tan · Di Liang · Na Zhong · [Show all 7 authors](#) · Haifeng Jiang

## Trajectories of heroin use predict relapse risk among heroin-dependent patients: A 5-year follow-up study

April 2020 · Journal of Clinical Neuroscience 76 · [Follow journal](#)

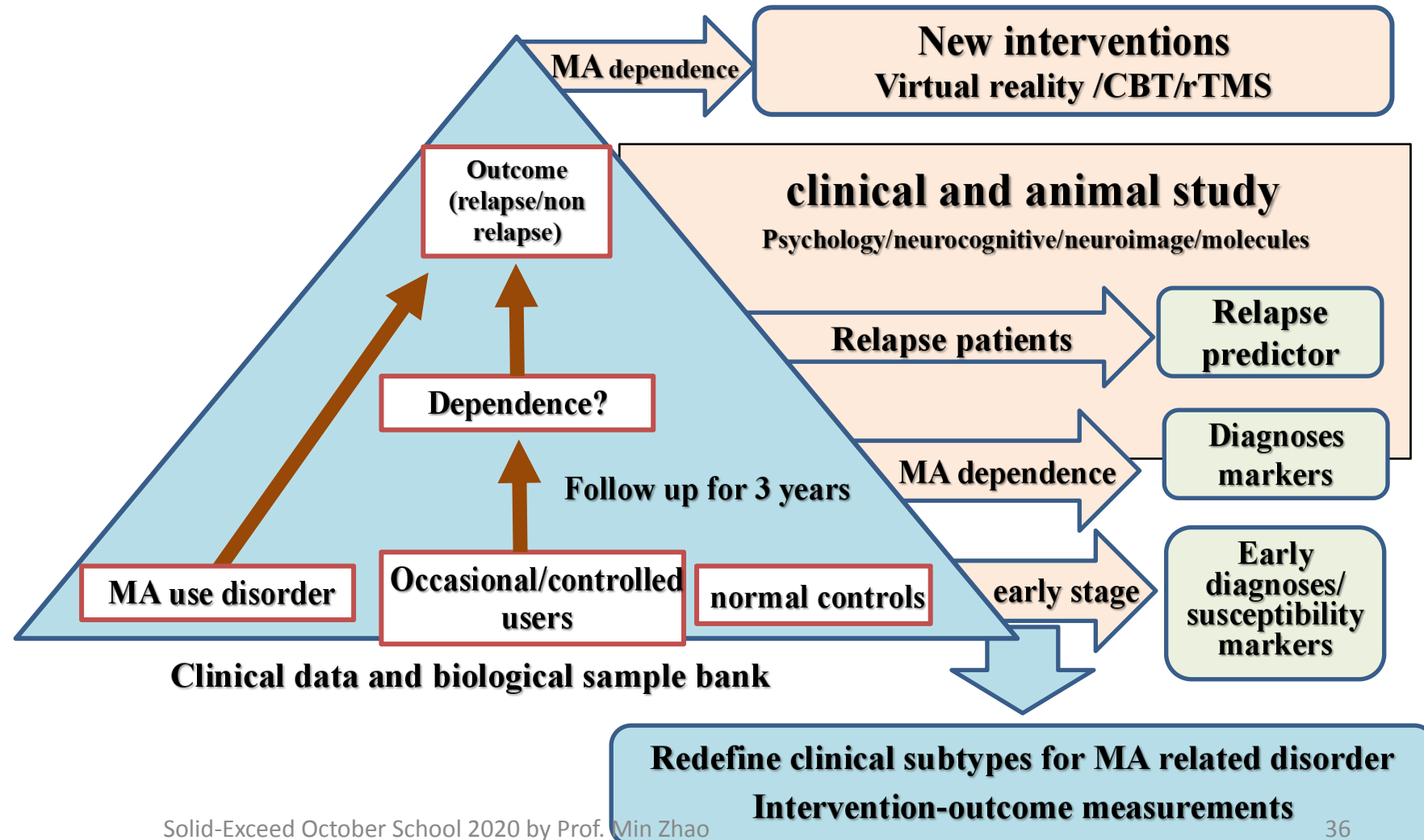
DOI: [10.1016/j.jocn.2020.04.020](https://doi.org/10.1016/j.jocn.2020.04.020)

Tianzhen Chen · Jiang Du · Na Zhong · [Show all 8 authors](#) · Min Zhao



# CARD Study (Cohort of addiction related disease) in China

- Establish large-scale clinical data and biological sample bank
- Find objective and biomarkers for early detection, diagnosis and relapse prediction
- Develop New Interventions for MA dependence





# CARD Study (Cohort of addiction related disease) in China



成瘾大数据数据库基本框架



By July 2020, 21 hospital, 2500+ subjects, 500K sample, 400 imaging data

Supported by National Key R&D Program of China (2017YFC1310400)

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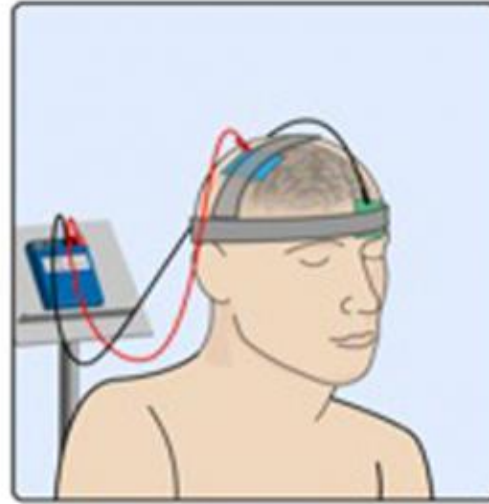
# None medical treatment



**DBS**



**TMS**



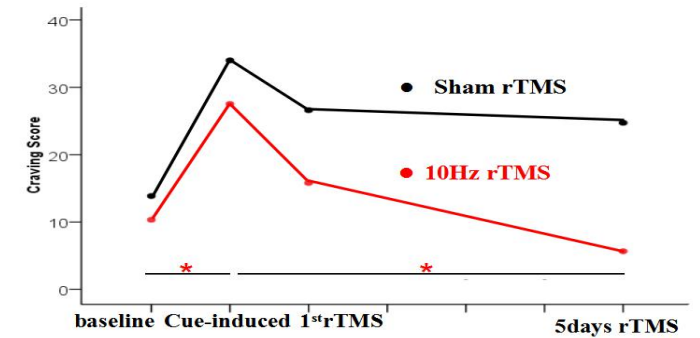
**tDCS**



**Surgical Therapy**

**Non-invasive  
Treatment**

**Novel Treatment**



**Su H. Zhao M. Drug and Alcohol  
Dependence, 2017**

# rTMS for Methamphetamine dependence

European Neuropsychopharmacology (2020) 31, 158–161



ELSEVIER

[www.elsevier.com/locate/euroneuro](http://www.elsevier.com/locate/euroneuro)

SHORT COMMUNICATION

## Intermittent theta burst transcranial magnetic stimulation for methamphetamine addiction: A randomized clinical trial

Hang Su<sup>a,1</sup>, Tianzhen Chen<sup>a,1</sup>, Haifeng Jiang<sup>a</sup>, Na Zhong<sup>a</sup>, Jiang Du<sup>a</sup>, Ke Xiao<sup>b</sup>, Ding Xu<sup>b</sup>, Weidong Song<sup>b</sup>, Min Zhao<sup>a,c,d,e,\*</sup>



EBioMedicine 60 (2020) 103027



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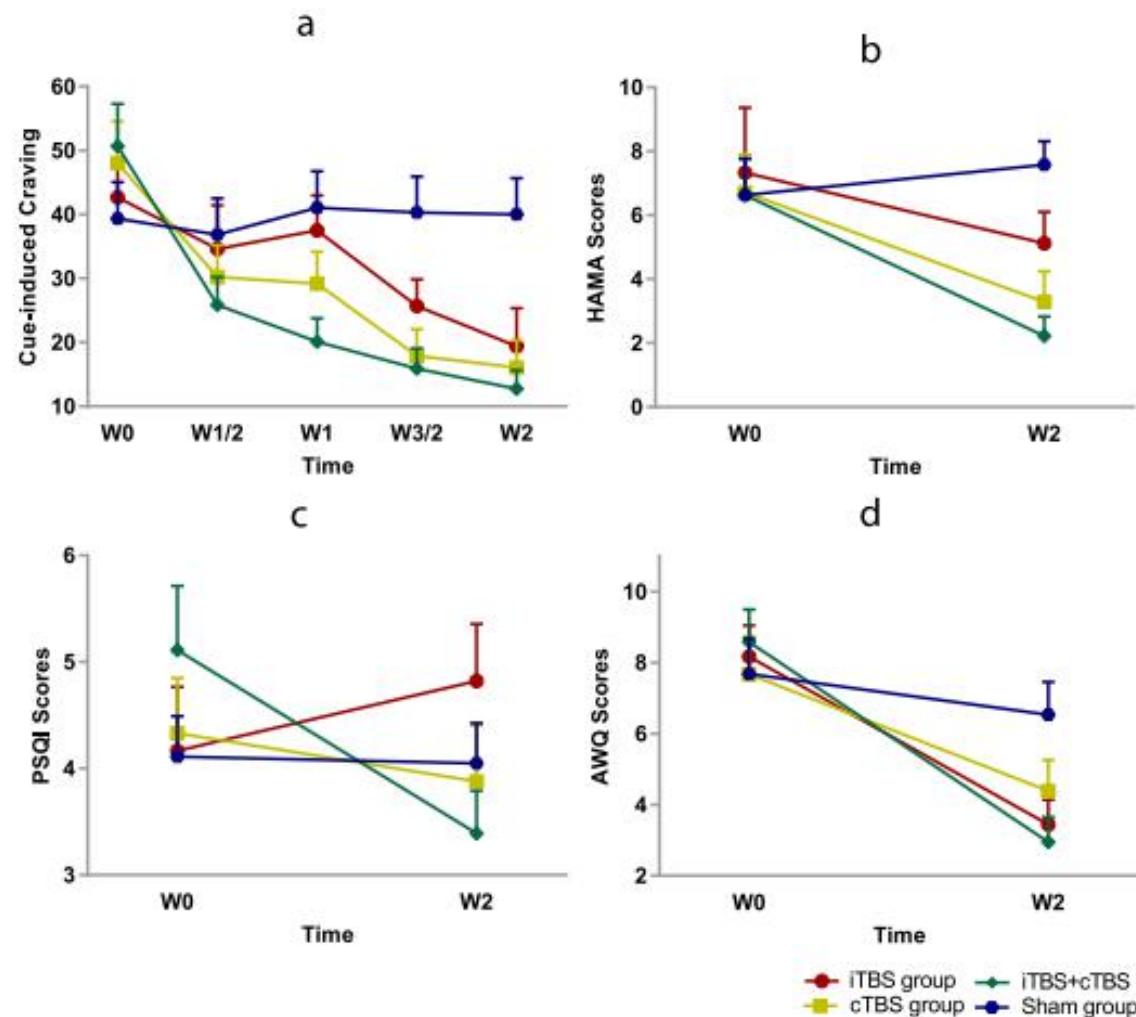
EBioMedicine

journal homepage: [www.elsevier.com/locate/ebiom](http://www.elsevier.com/locate/ebiom)

Research paper

## The exploration of optimized protocol for repetitive transcranial magnetic stimulation in the treatment of methamphetamine use disorder: A randomized sham-controlled study

Tianzhen Chen<sup>a,#</sup>, Hang Su<sup>a,#</sup>, Ruihua Li<sup>a</sup>, Haifeng Jiang<sup>a</sup>, Xiaotong Li<sup>a</sup>, Qianying Wu<sup>a</sup>, Haoye Tan<sup>a</sup>, Jingying Zhang<sup>a</sup>, Na Zhong<sup>a</sup>, Jiang Du<sup>a</sup>, Huijuan Gu<sup>b</sup>, Min Zhao<sup>a,c,d,e,\*</sup>





# Psychological and cognition impairments in MA users

- MA causes obvious cognitive impairment, strong craving and psychiatric disorder
- Cognitive impairment: **impulse control, working memory and social affective cognition**
- Execution control and social cognition of MA users improved after 6 months of withdrawal

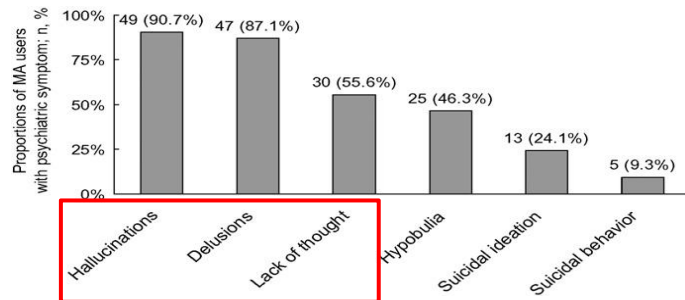


Fig. 2. Psychiatric symptoms in the MA group.

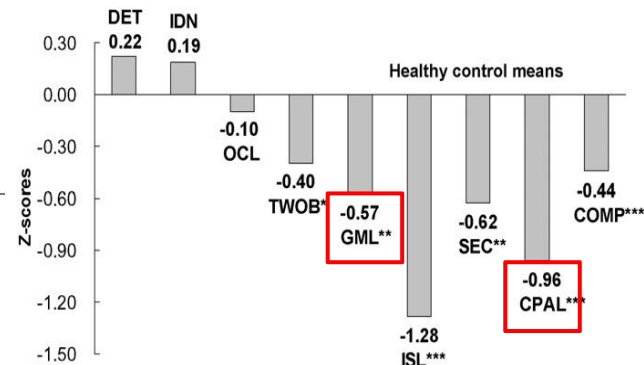
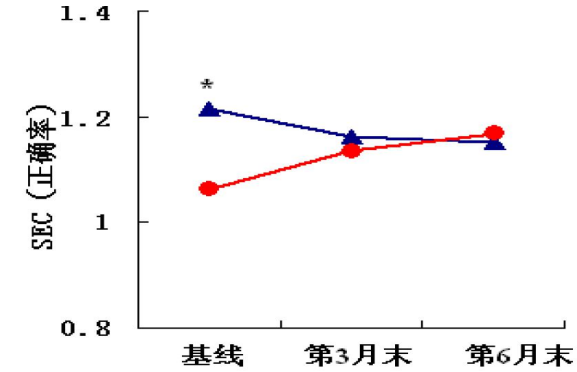
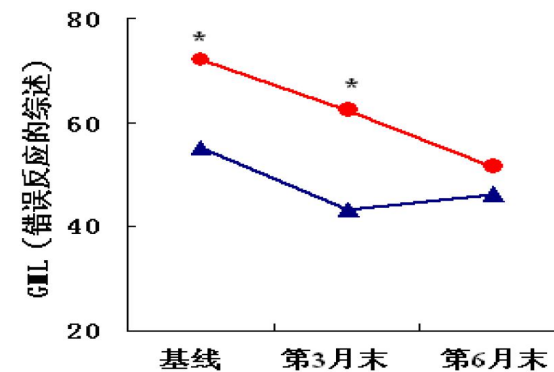


Fig. 3. Magnitude of impairment of relative to healthy controls in the CogState Battery.



**Patients with impulse control impairment (decision-making, etc.) tend to have high risk, immediate satisfaction options and are more likely to become addicted or relapsed**

N. Zhong, M. Zhao, et al. Prog Neuropsychopharmacol Biol Psychiatry, 2016

# Computerized Cognitive Therapy for Addiction (CCAT)



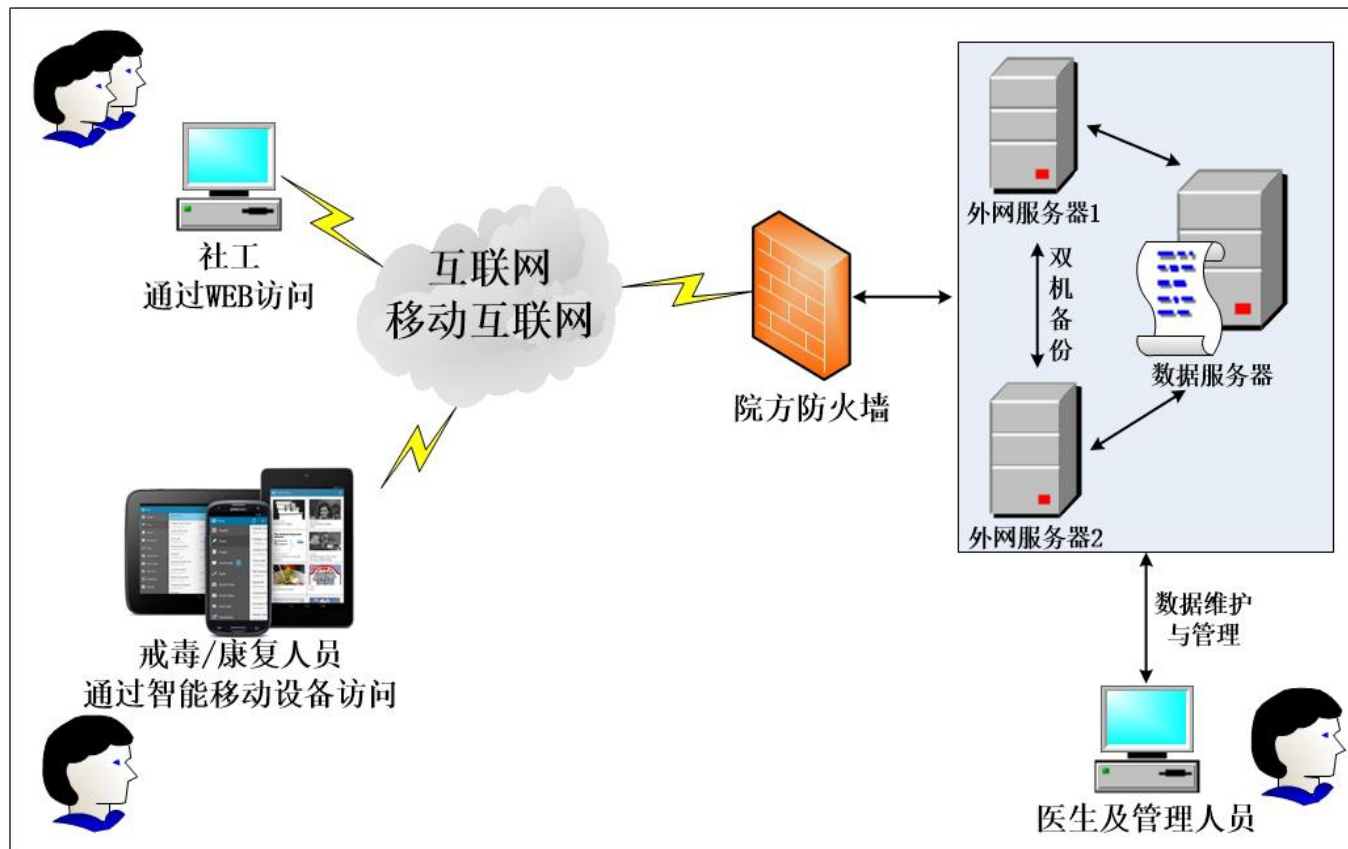
持续跟踪多批次干预训练数据，定期给出专业干预结果报告

**Clinical Study showed CCAT improved cognitive impairment and bias for MA dependents**



# Digital Medicine in addiction rehabilitation

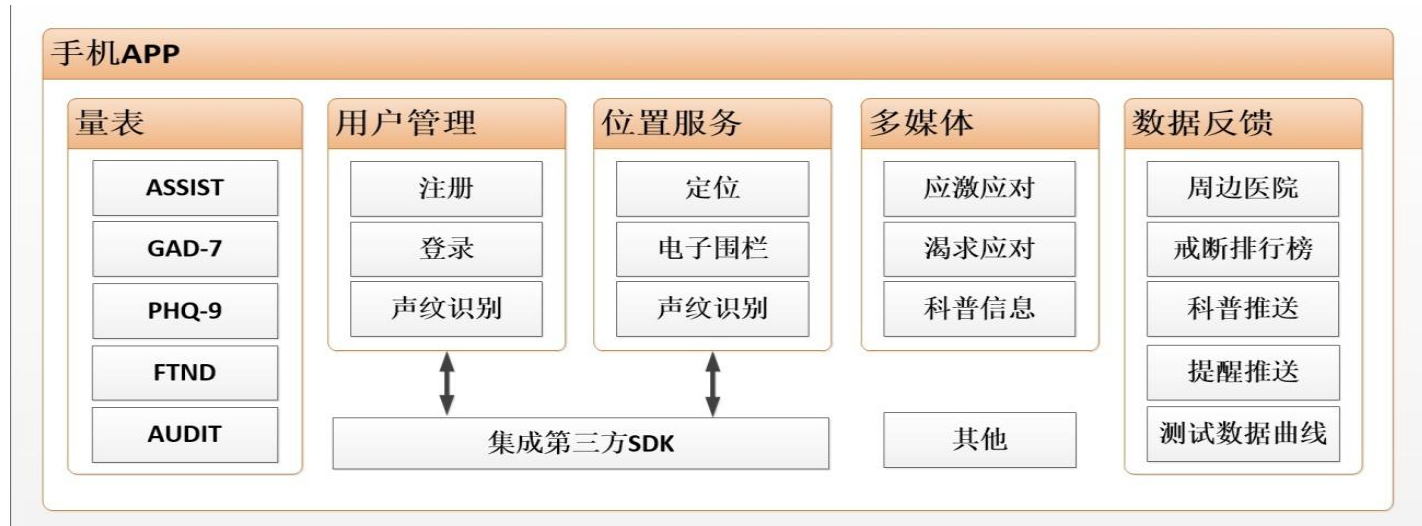
## Community-based Addiction Rehabilitation Electronic-System(CARE)



**Based on the mobile Internet**

- Applications for patients
- Social workers website management
- Doctor/Medical institution Application
- Education of relapse prevention
- Support for craving crisis
- Psychological intervention

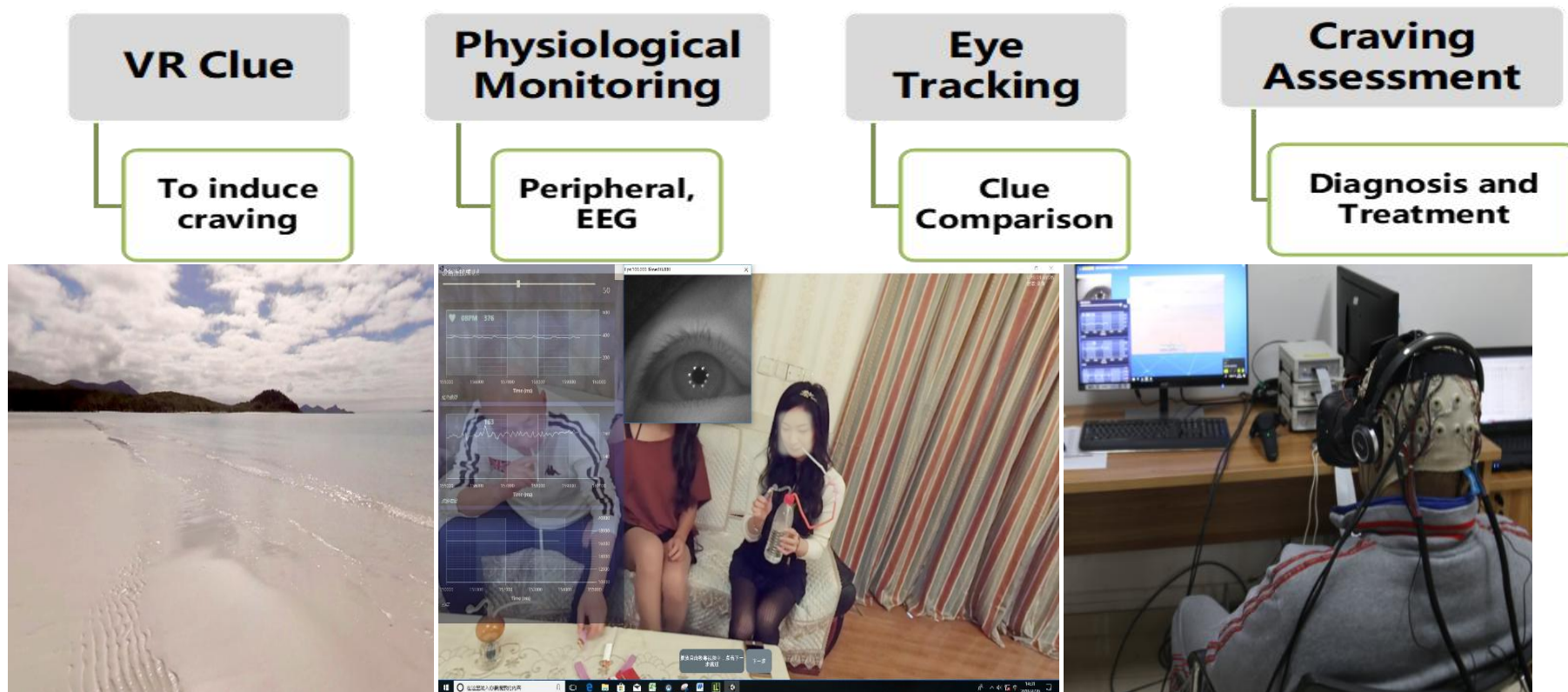
# CARE System



- **Rehabilitation Management** : Regular reminder and evaluation
- **Social Support** : Popularization of science and Outreach support
- **Crisis intervention** : Dealing with craving, emergency situation and stress event
- **Data Platform** : Medical data, location, mutual information

# Application of VR in Addiction Rehabilitation

## Development of ATS abuse craving evaluation and rehabilitation system



The VR drug-related cue can induced increased craving and physiological reactions

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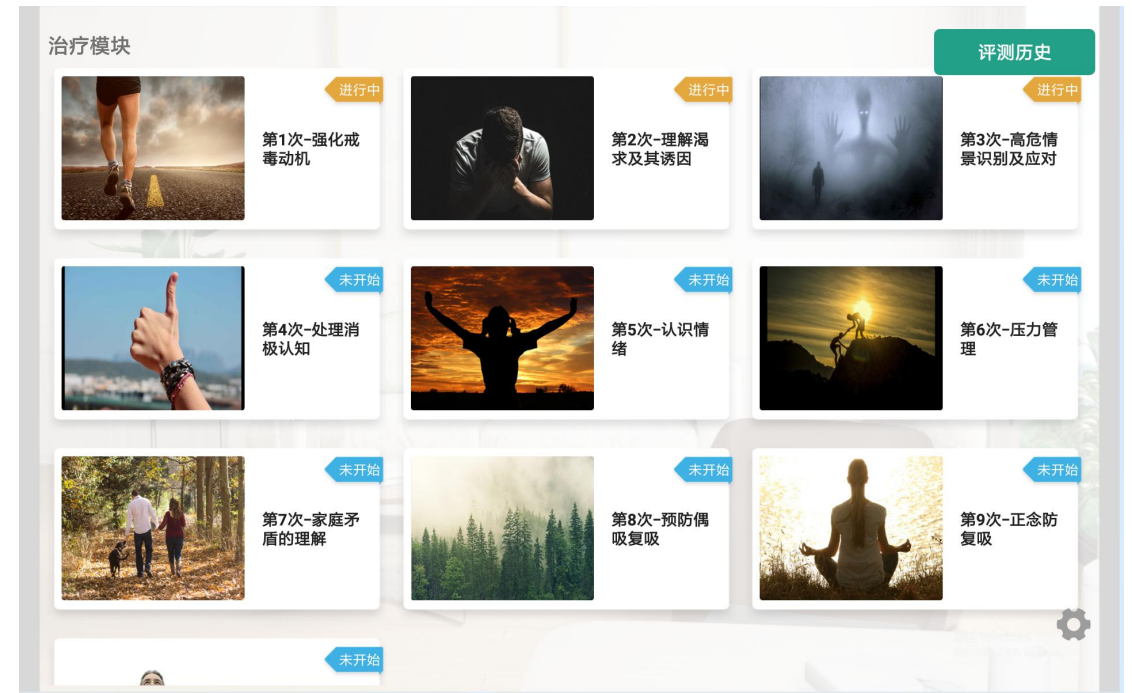
Tan HY, Zhao M. Archives of Medical Research, 2019(In press)

# Application of AI in psychotherapy for Addiction

## AI assessment and psychotherapy system



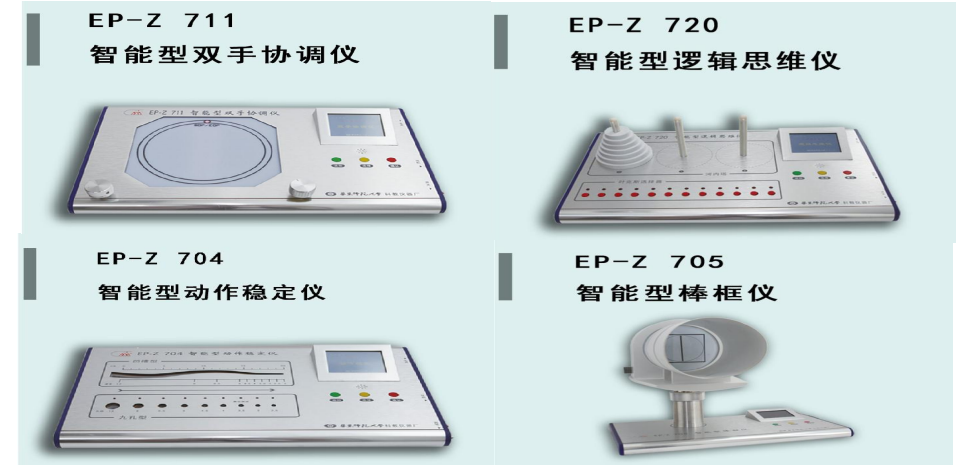
**Development of AI therapist by integrating virtual digital person, natural language processing, Artificial intelligence, etc.**



**10 modules based on MI and relapse prevention for drug dependent individuals**



# Rehabilitations for Methamphetamine dependence

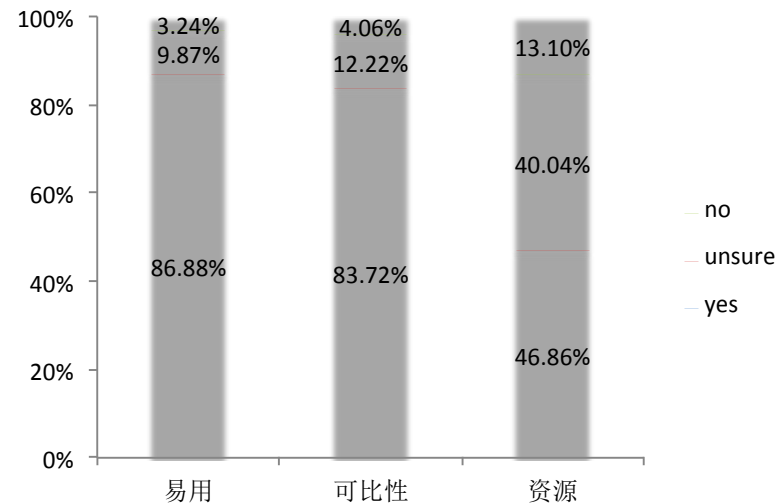
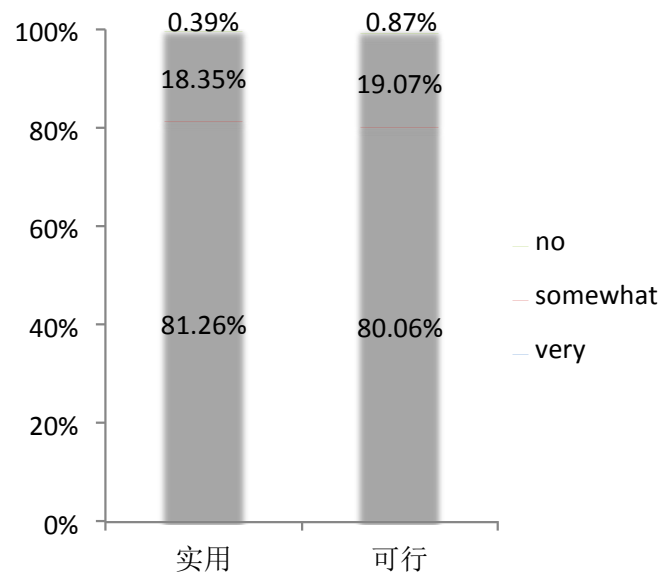


## Cognitive evaluation and rehabilitation for MA dependence



# ICD-11 substance use and addictive behaviour disorders

- The reliability and utility of substance use and addictive behaviour disorders especially on Gaming disorder (GD)
- Development of screen tools for GD based on ICD-11
- Application of online brief intervention based on assessment of Gaming Disorder for youth





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上海市科普工作联席会议办公室 2020-02-21

收起 ^

作者单位：上海市科普工作联席会议办公室 上海市精神卫生中心 上海市医学会精神医学专科分会 中华医学会精神医学分会  
责任编辑：刘彦纬 杨洁 张蔓蔓

## 简介

我们正在经历一场应对新型冠状病毒的战役。疫情是命令和考验，也是一次重大社会应激事件，一线工作者，生活节奏紧张，直面被感染的风险，不良情绪不断累积；后方群众，居家时间变长，烟酒任意用，手机开怀刷，游戏放肆玩，真



学习强国

打开



**GCP.NETWORK**





## Challenges of methadone maintenance treatment during the COVID-19 epidemic in China: Policy and service recommendations

The methadone maintenance treatment (MMT) program, implemented by the Chinese government to control illegal drug abuse, has been operating as a nation-wide program since its initiation in 2004 (Sullivan et al., 2015). By the end of 2017, it has established an extensive network of 789 community MMT clinics in 29 provinces, with 162,000 patients receiving treatments everyday (Committee, 2019). According to the regulation, patients registered with the MMT program are required to visit a designated clinic daily to take

ing medication delivery, each prescription dosage and related regulations. (2) communications between the clinic and patients and between clinics should be strengthened via a variety of channels such as phone, mobile app (e.g. WeChat), or social media sites (Liu et al., 2020). (3) In order to prevent the client from COVID-19 infection, clinics in epidemic areas could carry out "Take-home dosing plan" based on special provisions for high- and low-risk patients and patients with disabilities (Matusow et al., 2018). Patients, whose daily dose is low, who usually have good compliance records, and who have no illegal records, could be allowed to take home a dose of 3 to 5 days. Implementing online appointments to get methadone with a propose dose is also necessary to reduce the risk of cross-contact of patients when visiting the clinic (Qiu et al., 2020).

## Journal Pre-proof

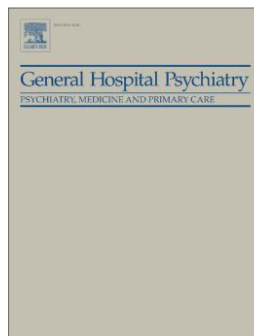
Psychological symptoms among frontline healthcare workers during COVID-19 outbreak in Wuhan

Jiang Du, Lu Dong, Tao Wang, Chenxin Yuan, Rao Fu, Lei Zhang, Bo Liu, Mingmin Zhang, Yuanyuan Yin, Jiawen Qin, Jennifer Bouey, Min Zhao, Xin Li

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DOI: <https://doi.org/10.1016/j.genhosppsy.2020.03.011>

Reference: GHP 7513



Solid-Exceed October School 2020 by Prof. Min Zhao

## Challenges of methadone maintenance treatment during the COVID-19 epidemic in China: policy and service recommendations

Journal:	Addiction
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Manuscript Type:	Letter to the Editor
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Complete List of Authors:	Jiang, Haifeng; Shanghai Mental Health Center, Shanghai Jiao Tong University School of Medicine, Addiction Su, Hang; Shanghai Mental Health Centre, Zhang, Changchun

## Open access

## Original research

## General Psychiatry

## Clinical characteristics of hospitalised patients with schizophrenia who were suspected to have coronavirus disease (COVID-19) in Hubei Province, China

Xuebing Liu,<sup>1</sup> Hong Lin,<sup>2</sup> Haifeng Jiang,<sup>3</sup> Ruihua Li,<sup>3</sup> Na Zhong,<sup>3</sup> Hang Su,<sup>3</sup> Yi Li,<sup>1</sup> Min Zhao<sup>3</sup>

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## ABSTRACT

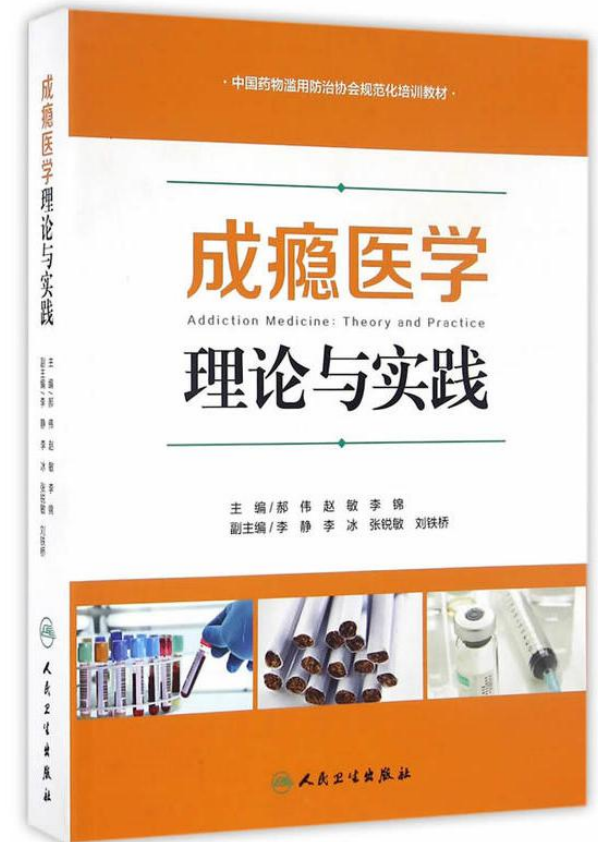
**Background** Since the outbreak of COVID-19, no data have been available for hospitalised psychiatric patients who are suspected to have COVID-19. We performed a

## INTRODUCTION

Since the outbreak of COVID-19 caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in Wuhan, Hubei

# Future challenges and Suggestions

- The problem of drug abuse in China is still serious, with high relapse rate, lack effective treatment
- Should be addressed as public health problem and prevention is very important
- Comprehensive treatment and rehabilitation
- Improving drug rehabilitation institutions and their professional capacity
- Cooperation among various related systems
- Strengthen Addiction medicine and related research to improve treatment outcomes







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# Thank you

**Look forward to collaborating  
with you all**

