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Kunming Yundi Behavior and Health Research Centre

Policy Advocacy to Promote Peer-led Naloxone and Access to Hepatitis C Treatment for Drug Users  
in China

Final Report (2016.11—2017.10)

## I. Background

Chronic hepatitis C virus (HCV), an infection in the blood which is most notable for causing liver failure, plagues 130-150 million people in the world today (Hepatitis C, 2015). In recent years, its incidence has crept up faster than governments or public health entities can catch up with. Last year alone, 1.2 million people died from HIV related deaths (2015). Injecting drug users (IDU) are extremely vulnerable population whose health and health rights are at grave risk in China. The two main threats to the lives of IDU are heroin overdose and hepatitis C infection, which without long-term treatment will have a severe impact on current and former IDU.

With OSF last term support, the peer-led naloxone rescue pilot project has been accepted by National Centre for AIDS/STD Control and Prevention, China Centre for Disease Control (NCAIDS). And the service model has been edited in “Guidelines for social organizations to carry out AIDS prevention and treatment of high-risk population and care for infected patients”, Promoted in Chinese social organizations. Besides, OSF last term also supported publicity of DAA medicine treatment among drug users infected with hepatitis C and promoted the advocacy of relevant departments of the country.

During this project period, OSF has supported the continued expansion of peer access to naloxone at four provinces and the continued advocacy for the "legalization" of peer-led naloxone programs. At the same time, Yundi advocated for access to HCV treatment for IDU and finished 34 persons received DAA therapy. The overall purpose was to protect the right to life and health for vulnerable IDU populations in China. Yundi received a total of USD 69937(RMB480390.26 yuan), and used USD 69937(RMB480390.26 yuan) on project-related activities. This report covers all activities conducted during the period from Nov. 2016 through Oct. 2017

## II. Activities and Outcomes

### 1. Maintain stable network operations, raise capacity of network members

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Funding from OSF was used to maintain stable activates, information sharing, network training, workshop and financial management for 20 member Community Based Organizations (CBOs). OSF funding was used to supply Yundi regional coordinators from 4 core staff and 5 prefecture-level key activists from Guangxi (Nanning), Kunming (Yuxi), Lincang (Zhenkang), Dehong (Mangshi) and Honghe (Mengzi) with basic stipends, which allowed those groups to support local CBOs with management and technical support and guidance. Work conducted by these groups included the HCV treatment access, naloxone rescue, trainings and advocacy activities. OSF support also ensured the stable operations of the entire Yundi network, creating opportunities for network members to apply independently for and got 10 external support from government sources and other donors.

## **2. Key activities: Hepatitis-C advocacy, pilot treatment and result dissemination**

There were three main activities conducted as part of Yundi's Hepatitis C work under this grant. The main goal was to capacity building of team member to offer DAA treatment, concluded and disseminated fibrosis and HCV treatment needs investigation result, In addition, Yundi organized those most in need of HCV treatment and accessed to pilot DAA treatment, collected, analyzed and reported of HCV pilot treatment result, submitted to provincial and national level for advocacy, in order to raise awareness among the general public and policy makers about the urgent need for HCV treatment access.

### **1) Capacity building of team member to offer DAA treatment and continuously community advocacy**

In order to strengthen the ability of team personal and regional staff management, OSF support Yundi held the "2017 staff management training" at the Haiou Hotel on March 11<sup>th</sup>, 2017. A total of 35 people participated in the training group, 5 regional leader summed up the 2016 OSF project implementation experience with the focus on HCV infected drug users DAA therapy publicity and training experience sharng, it should strengthen the propaganda and training, help more drug addicts with hepatitis C accessed to the ADD treatment and related knowledge. In additional, on July 18<sup>th</sup>, 2017, Yundi has made a team building for regional leaders and backbone teams, in order to improve team members capacity, enhancing cohesion between teams and improving teamwork and coordination ability among regional team members.

From Oct,2016 to Oct, 2017, Yundi and the Yunnan Provincial Association of Drug Abuse cooperated for the HCV DAA related training and result dissemination at Yingjiang County, Ruili, Mangshi, Longchuan County at Dehong prefecture, four times trained a total of more than 200 people.

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Besides, March to Oct, 2017, Yundi carried out hepatitis C related knowledge publicity and training activities, issued more than 1000 copies of promotional materials, covered more than 400 Myanmar IDUs along China Myanmar border area in Longchuan County.

## **2) Concluded and disseminated fibrosis and HCV treatment needs investigation result**

a) In order to better understand the need of HCV treatment assessment and the DAA therapy among HCV-positive, in December 1, 2016, the twenty-ninth "World AIDS Day", the 4 organizations as Longchuan County, Yuxi City' s Hongta District Sunshine home, Manshi Ivy studio, Kunming Sunshine Home and companions distributed brochures and displayed panels in local communities for treatment of hepatitis C advocacy campaign

b) In the first half year of 2017, Yundi team members went to Dehong, Honghe, Kunming five prefecture' s methadone clinics respectively to carry out the hepatitis C treatment awareness, demand for hepatitis C therapy, new DAA medicine related knowledge training. Surveys and HCV antibody testing were carried out at Longchuan, Mangshi, Zhaotong, Mengzi City (Honghe), and Leshan (Sichuan). Because of limited testing resources, fibrosis testing was only done for those already on ART treatment, as some of the necessary test results were already available for further analysis. The data was collected as, a total of 100 widows of PLHIV were surveyed in Dehong prefecture (Longchuan and Mangshi county), 45 MMT clients were surveyed in Zhaotong (Zhaoyang district), 121 HIV/HCV-positive MMT clients were surveyed. In Mengzhi (Honghe), In Mangshi and Leshan, 454 HCV-positive MMT clients were surveyed and received approximate staging (using FIB4) for liver fibrosis.

Of the survey respondents, MMT clients had the highest rate of HCV infection. All respondents reported an extremely large need for HCV treatment, with 89.5% of MMT clients reporting such a need. 58.3% of those currently on ARV treatment were also HCV-positive and reported a need for treatment; and 14.3% of the widows of PLHIV reported a need for HCV treatment. Fibrosis estimates for 188 HCV-positive ART patients revealed that 84.2% had a Fibrosis level of F2 or higher, which indicates that they either need or will soon need treatment for HCV. For all groups, the main reason why HCV-positive people had not yet received any sort of standardized HCV treatment was a that the cost of such treatment was too high. Other reasons included that traditional treatment side-effects were too serious, and that the treatment duration was too long.

### 3) Accessibility and outcome of 34 HCV positive received DAA

November 2016 - October 2017, Yundi helped testing expense, offered DAA treatment advice, cooperated and provided doctor and expert services, support 15 HCV positive voluntary purchasing DAA. The results were analyzed for a total of 34 DAA under Yundi DAA treatment. The results showed that total 34 received DAA, among them, 73.5% drug use with 5 types of hepatitis C genotype (mainly 3B type, accounting for 50%, followed by HCV 1b type accounted for 26.5%, the other three genotypes 3a, 1 of type A and type 6N respectively Different genotypes treatment results were shown in table 1. the average treatment costs about \$1700. 4 DAA treatment interruption because of economic reasons, however, all 34 patients were cured..

Table 1 Different genotypes of 34 cases of DAA treatments receipts

Treatment Course	genotypes	1a	1b	3a	3b	6n	not detected	Total
Harvoni	12w	0	6	0	0	2	0	8
Harvoni	8w	0	0	0	0	0	1	1
Harvoni+ Ribavirin	12w	0	2	0	0	0	0	2
Sovaldi+ Daklinza	12w	0	0	2	8	0	0	10
Sovaldi+ Daklinza+ Ribavirin	12w	0	0	2	8	0	0	10
Sovaldi+ Daklinza+ Ribavirin	16w	0	0	0	1	0	0	1
Sovaldi+Pegylated interferon	12w	0	1	0	0	0	0	1
Sovaldi+Ribavirin	24w	1	0	0	0	0	0	1
Total		1	9	4	17	2	1	34

### 4) Public advocacy and media campaigns of DAA

#### At the national level:

In December 2016, Yundi participated in the " Fourteenth National Drug Dependence Conferences and International Symposium on mental illness, the poster session sharing "HIV/HCV co infected with hepatitis C liver fibrosis accept nucleotide inhibitor (DAA) treatment intention analysis ", which advocated DAA treatment accessibility.

In September 2017, Yundi participated in the "China AIDS Conference" held in Guangzhou. 4 articles were included in the conference magazine as "The cost-effectiveness analysis of naloxone emergency injection heroin overdose" and "The result analysis of 34 cases of hepatitis C infected persons under direct antiviral (DAA) treatment" .

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In May 18, 2017, Yundi expert invited to participate in the French Embassy organized Sino French dialogue "medicine and humen" , the topic of improving special groups of hepatitis C treatment, naloxone and first aid, maintenance of group' s life and health rights were discussed..

In May 11, 2017, Yundi received a visit from Mr. Ai Tengmo, the Second Secretary of the New Zealand Embassy in China. Yundi communicated with HIV/HCV treatment possibility on the Sino Burmese border.

In March 2017, Yundi participated with Kunming Zoo Institute of Chinese Academic of Science in the study of “Cross-border high-risk group of HIV/HCV co infector hepatic fibrosis and nucleotide inhibitor therapy acceptances, published in <China STD/STD Magazine (May 2017 volume 23, issued fifth).

### **At provincial level**

In August 2017, Yundi held “Expert Advocates of HCV Treatment Seminar” in Kunming. The participants came from AIDS Project Planning Dep, Yunnan Province AIDS Prevention & Control Bureau, Yunnan Institute for Drug Abuse, Yunnan Institute of Health Education, Center for Disease Control of Yunnan Province, Foreign Economic Cooperation Office of Yunnan Provincial Bureau of Commerce, other experts and representatives came from Yunnan Province Academy of Social Sciences and Kunming Municipal Civil Affaire Dep, a total of 15 people attended the meeting. The meeting reviewed OFS supported Yundi network group for past 3 years, HCV advocacy activities, 34 positive HCV infection treatment results. Provincial experts and relevant departments leaders were being noticed the liver cirrhosis consequence of HCV, the need of DAA therapy and importance of hepatitis C DAA therapy accessible. After the meeting, the experts helped to modify “ hepatitis C accessibility treatment report in 2017”. In the same time, it is suggested that Yundi continue to carry out policy advocacy of DAA treatment accessibility, and help infected persons to get DAA treatment.

In August 30, 2017, Yundi took part in in “Yunnan Provincial the First AIDS Conference“ hosted by Yunnan Province AIDS Association ", OSF supported 3 papers won the outstanding paper award, Luo Zhi, Yang Lihua respectively had presentation in the meeting to share “Result Analysis of 34 Cases of Hepatitis C Infection Direct Antiviral (DAA) Therapy", "302 cases of HIV/HCV co-infectors status of liver fibrosis, the Willingness for the DAA treatment”, In fact, it further advocated academic experts, department leaders concerned about drug addicts related hepatitis C treatment

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## **Organizational website, Weichat, Newsletter, etc**

For past one year, Yundi published 4 Chinese quarterly newsletter, which distributed to more than 60 institutions and government departments. The 7 pieces of news included hepatitis C cirrhosis situation, The urgent need of DAA treatment, HCV community advocacy, services and pilot treatment results, advocacy activities etc. Above information also spread by Yundi unit website [www.ynaidsexm.com](http://www.ynaidsexm.com) and official WeChat website (YDHR-YN). in addition, “Analysis of liver fibrosis and willingness of receiving DAA treatment among HIV/HCV co-infected patients” issued on Chin J AIDS STD Vol. 23 No 5 May 2017. Another paper “Analysis the results of 34 cases of direct antiviral therapy (DAA) for hepatitis C positives” is under modification before issued.

### **3. Key activities: spread of naloxone service, result dissemination and advocacy**

#### **1) Substantial training and naloxone service coverage expanded**

This year, Yundi organized 4 training activities on naloxone data collection, mobilization of family member in naloxone rescue. Yundi 28 network teams organized 20 training activities for drug addicts and their families at the Liujiang County and Liuzhou Guangxi, Xinjiang City, Toutun River District, Sichuan county and Leshan County. Naloxone training content included injection drug overdose prevention knowledge, naloxone medicine introduction, naloxone first aid, emergency rescue operation, peer mutual aid agreement. The results in core facilitates management and technical capabilities improved, more understand of injection overdose among drug addicts and their family members, more confidence of naloxone first-aid, ensured the more rescue of overdose injection by naloxone, the drug human life saved. Through OSF supported first aid training, sustainability of the network team to carry out naloxone ensured and naloxone service coverage expanded.

#### **2) Naloxone service result**

Under the support of OSF, Yundi bought and issued 3590 naloxone to network teams. Among them, 1090 to methadone doctors, 1100 to drug addicts family and drug users, 1400 to peers in Sichuan, Guangxi, Xinjiang and Yunnan province. Besides, families signed 473 copies of willingness to accept naloxone emergency rescue agreement. For past one year, peer and family members from Dehong, Yuxi, Jinning, Kunming, Kaiyuan and other 22 counties carried out 372 naloxone emergency services for overdose injection drug users. Among them 10 rescue service for Xinjiang, 8

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from Liuzhou City and the Liujiang River County Guangxi, 7 people from Leshan city Sichuan. The drug addict right of health and life is defended, drug users and their families benefit from peer led heroin overdose rescue.

Kunming CDC invited Yundi, Luo Zhi to give harm reduction lectures at two drug user compulsory detoxification centers 2 times in 2017, training a total number of 500 drug users and providing 200 piece of Naloxone for them. The service not only ensured the drug addict right of life and health in closed set, but also strengthened the cooperation with Kunming CDC. The result promoted naloxone

### **3) Public advocacy and media campaigns**

#### **At national level**

25th Harm Reduction International Conference held on 14-17 May 2017 Montréal, Canada, Yundi cooperated with Department of Public Health, Erasmus MC, University Medical Center Rotterdam, the Netherlands to present “Peer-implemented naloxone treatment among heroin users: early experience and cost-benefit analysis in Yunnan province, China” (abstract number: 948) oral presentation, 15 May 14:00 - 15:30. And “Coverage of harm-reduction on services and HIV-infection : a multilevel analysis of five Chinese cities” (poster number : 59), 16 May

In August 2017, invited by the National Community Organizations Promotion Association under the Foreign Liaison Department of the Central Committee of the Communist Party of China, Yundi attended the “National Community Social Organization Management and Experience Sharing Conference. Luo Zhi presented" NGO cross-border harm reduction and peer led naloxone service for Myanmar drug users”

Yundi member and key expert jointed report "The technology guide of social organizations to carry out AIDS intervention and care for high-risk population” has been extended among Chinese social organization. The HCV and naloxone service has been adapted among harm intervention services in China.

Related two articles as “Model of establish of peer Naloxone service were shared in post in “ Fourteenth National Conference on drug dependence and International Symposium on mental illness ” , “Cost-benefit analysis of peer-led Naloxone first aid among heroin overdose injection users ” was issued

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## **At provincial level**

In February 2017, due to peer led naloxone service model and result of helping HCV infected patients to access DAA therapy and other achievements, Luo Zhi from Yundi was appointed as an expert committee member by the Yunnan STD / AIDS Association.

In January 2017, Yundi as Agency, Luo Zhi and Yang Lihua as individual was awarded the third prize for scientific and technological achievements of Yunnan Province, because of the outstanding result of clean needle and naloxone related research on "Key Technology and Application of Harm Reduction to Reduce HIV among Injecting Drug User ". The award affirmed the outstanding contribution that Yundi made in the scientific research work of harm reduction and the human right defending among drug users in Yunnan Province.

## **4. Experience**

- 1) With the support of OSF, Yundi carried out peer naloxone first aid service for 5 years, which was extended from initial outreaching personnel to peers, drug addicts and family members. The service was extended to Guangxi, Sichuan, Xinjiang and other provinces, and the peer led naloxone model was included in the guidelines of national social organizations to carry out harm reduction services by China Centre for Disease Control. The model of Yundi peer led first aid replicable pattern for drug injection overdose was recognized by the state. More than 800 life were saved.
- 2) The project ensured health rights of vulnerable people by means of community based service from NGO. After HCV infection and cirrhosis status investigation, analysis of vulnerable population HCV treatment needs and obstacles, policymakers and community advocacy activities, analysis of therapeutic effect of pilot results, result media, conference and academic paper dissemination. Whole project has helped 34 HCV infectors who receive DAA treatment, substantial promoting Chinese policy of HCV DAA accessible treatment.
- 3) Long term trust and support for social organization NGO from OSF, let Yundi organization have long period of time for service summary of related results and experience, have time to publish series of reports, articles and papers, which enable the opportunities of results dissemination in a number of academic activities, meetings and media publicity and policy advocacy activities. Result in naloxone and preliminary HCV advocate bear fruit. Relevant experience is worth sharing.



4) Funding from OSF was used to build up and maintain a potential NGO organization grow up and stable. The OSF funding made capacity building, network training, cooperation and financial management of whole network team at four provinces possible, OSF funding lay the corner stone for network teams the experience and ability to apply for different funding after capacity built up. At the end, Yundi and whole network had ability to apply for national project and extended community based activity to neighbor countries. The experience of OSF supported a substantial NGO built up as regional capacity organization was highly valued and could be copied.

## 5、Challenge and plan

- 1) Post OSF supported project, how to stable of network teams, keep long year's regular team key facilitator's stipend, regular training, information and experience sharing.
- 2) The continuous collect DAA treatment and Naloxone first aid result without funding should be considered.
- 3) Following long term policy influence and advocacy based on the OSF supported evidences, efficiently copy the model of OSF supported NGO model to regional countries remain as a challenge.

## 6、Financial progress

No	Item	Budget (RMB)	Spending (RMB)
<b>1</b>	<b>Yundi core operations and Staff capacity building</b>		
1.1	Stipends for 4 provincial level core staff	85,000.00	88,000.00
1.2	Stipends for 5 prefecture-level key activists	30,000.00	29,729.62
1.3	Monthly telephone subsidy for 28 CBO coordinators	36,600.00	36,496.47
	<i>Sub-total</i>	<i>151,600.00</i>	<i>154,226.09</i>
	<b>Improve community members' capacity to advocate for protection of basic health rights/services</b>		
1.4	Bi-annual regional advocacy training workshop for Yundi member CBOs (two/region/year)	12,000.00	9,786.00
1.5	Regional coordinator-led community training workshops (two/region/year)	6,000.00	5,606.00

1.6	Annual network meeting (skills-building, experience exchange, naloxone distribution, network coordination)	10,000.00	9,476.00
	<i>Sub-total</i>	<b>28,000.00</b>	<b>24,868.00</b>
<b>2</b>	<b>Expanded heroin injection of overdose naloxone to cover the 38 counties in guangxi, xinjiang and sichuan</b>		
2.1	Expand naloxone to 38 counties/cities, procure 5000 doses	10,000.00	10,255.00
2.2	Distribute 4000 doses of naloxone to IDU peers and family members, continue peer rescue activities	20,000.00	20,000.00
	<i>Sub-total</i>	<b>30,000.00</b>	<b>30,255.00</b>
<b>3</b>	<b>Secure central CDC approval for standardized peer naloxone protocol</b>		
3.1	Complete documentation report on peer naloxone pilot sites, produce advocacy report	5,000.00	4,169.00
3.2	Document local results from peer naloxone pilot sites in Guangxi, Sichuan and Xinjiang provinces, prepare local advocacy reports	4,000.00	2,752.00
3.3	Travel to Beijing for national-level advocacy (two trips)	10,500.00	10,394.00
	<i>Sub-total</i>	<b>19,500.00</b>	<b>17,315.00</b>
<b>4</b>	<b>To provide the testing and treatment training for the community HCV, to promote the multi-level health department and promote the treatment of HCV</b>		
4.1	Conduct 50 testing and treatment workshops for IDU community members and family members. Anticipated will reach 1000 people.	15,000.00	13,811.00
4.2	10 groups of HCV training and treatment advocacy	57,000.00	54,510.00
4.3	Promoting the government's referral services for HCV treatment	38,000.00	40,000.00
4.4	Prepare analysis report of HCV treatment needs (including fibrosis and other data) and submit to County, Provincial, and National-level health authorities	25,000.00	26,500.00
4.5	support traffic cost to promote the voluntary purchase of sofosbuvir by 5 patients with HCV	6,000.00	3,099.00
4.6	Province level HCV treatment access advocacy workshop	12,000.00	20,000.00
4.7	produce at least two media reports on the urgent need for HCV treatment	1,200.00	0.00
	<i>Sub-total</i>	<b>154,200.00</b>	<b>157,920.00</b>
<b>5</b>	<b>Summary of project result analysis report</b>		
5.1	Yundi staff author (or co-author) five academic articles on HCV or naloxone	15,000.00	13,228.90
5.2	Attend three domestic and/or foreign academic conferences	15,000.00	10,000.00

	<i>Sub-total</i>	<i>30,000.00</i>	<i>23,228.90</i>
<b>6</b>	<b>Monitoring and Technical Support</b>		
6.1	Expert and Technical Support visits to CBOs (prefecture-level, 2 day visits)	15,000.00	11,754.00
6.2	NGO/peer "expert" technical support visits (staff from 2 sites visit 1 other site, mini-mentor model)	40,000.00	36,496.47
	<i>Sub-total (Technical Support)</i>	<i>55,000.00</i>	<i>48,250.47</i>
<b>7</b>	<b>Network Daily Operations</b>	12,090.26	24,326.80
	<b>Total budget</b>	<b>480,390.26</b>	<b>480,390.26</b>

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**Attachment 1:****Yundi Network Naloxone overdose Rescue Cases (November 2016 - October 2017)**

<b>Time Period</b>	<b>Local CBO</b>	<b>No of new rescue agreements signed</b>	<b>No. of overdose reversals</b>
Jan-Oct,2017	Tongxin group of Yundi at Hongta district	20	19
Feb-Sep,2017	xingsheng group of Yundi at Yingjiang district	19	16
Oct,2016-Oct,2017	qingteng workgroup of Manshi county	26	26
Dec,2016-Oct,2017	Tongxin homeland group of Longchuang county	37	40
Nov,2016-Oct,2017	The coastline group of Ruili county	15	21
Jan-Jun,2017	Qingsong group of Yangzong county	17	10
Dec,2016-Sep,2017	5.12 Xingzhe group of Jinning county	19	10
Oct,2016-Sep,2017	Chengguan zhi jia of Yongde county	18	14
Dec,2016-Oct,2017	Hangbiao group of Zhengkang county	15	15
Oct,2016-Aug,2017	Social care working group of Hekou county	7	3
Feb-Aug,2017	Shuguan jia yuan of Guangxi province	29	3
Nov,2016-Sep,2017	Honghui sunshine home of Kunming city	27	10
Oct,2016-Oct,2017	Yingxing group of Yingjiang county	30	38
Nov,2016-Nov,2017	Huyangshu of Gejiu city	24	0
Nov,2016-Nov,2017	Beidou shop of Kaiyuan county	15	10
Nov,2016-Nov,2017	La hu jia yuan of Lancan county	66	59

Nov,2016-Nov,2017	qing cao di of Ma guang county	8	8
Nov,2016-Sep,2017	hu kang jiayuan of Pinyuan county	47	36
Nov,2016-Nov,2017	Sunshine home of Jinping county	4	4
Dec,2016-Oct,2017	Red ribbon of Huize county	5	5
Nov,2016-Nov,2017	Toutunhe Xinjiang methadone clinic	10	10
Nov,2016-Nov,2017	Liujian methadone clinic of Guangxi province	4	4
Nov,2016-Nov,2017	Liuzhou methadone clinic of Guangxi province	4	4
Nov,2016-Nov,2017	leshan methadone clinic of Sichuan province	7	7
<b>Total</b>		<b>473</b>	<b>372</b>

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## Attachement 2:

### Analysis of liver fibrosis and willingness of receiving DAA treatment among HIV/HCV co-infected patients

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**Abstract: Objective** Investigating liver fibrosis and their willingness of receiving DAA treatment among HIV/HCV co-infected patients, providing the basis for hepatitis C patients getting accessibility DAA treatment. **Methods** In March 2016, all HIV/HCV co-infected in some AIDS antiviral treatment clinics in Kunming, Yunnan province. Investigating collected demographic information, non-invasive index assessment of liver fibrosis (FIB-4) and DAA treatment requirements through an cross-sectional study. Establishing a database by using EpiData3.1, descriptive statistical analysis by SPSS17.0. **Results** 303 patients with HIV/HCV were recruited. Average age of  $43.4 \pm 5.7$ , Male 204 cases (68.5%), Family per capita monthly income less than 2000 RMB (77.9%), there are 64.5% patients that the degree of liver fibrosis is in F2 level and above. Willingness to accept DAA treatment and liver function test reached were account for 82.5%、96.3% respectively, 62.7% of them wanted to get DAA treatment for free. **Conclusion** The degree of liver fibrosis is more serious among HIV/HCV co-infected, they would like to accept DAA to treat hepatitis C with free treatment offered from the government.

**Keywords:** HIV/HCV co-infection; Liver fibrosis; DAA drugs; willingness of treatment

## Analysis the results of 34 cases of direct antiviral therapy (DAA) for hepatitis C positives

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**Objective:** Analysis the results of direct antiviral therapy (DAA) for hepatitis C positive to promote therapy accessibility.

**Methods:** Social organization advocated confirmed hepatitis C positive infection patient to accept DAA in 2016. Cross section study by questionnaire and personal in-depth interview for all personnel after treatment collected their demographic data、virus genotypes、treatment course、virus load at the end of treatment and 3-6 months after the end of treatment、side effects during the treatment and the costs for an analysis.

**Results:** A total of 34 people were treated, 73.5% from drug users. Including 5 kinds of hepatitis C virus genotypes (mainly 3b type 50%, 1b type 26.5%, other 3a, 1a and 6n) . Actual treatment course of different genotypes as follow:

Treatment Course	genotypes	1a	1b	3a	3b	6n	not detected	Total
Harvoni	12w	0	6	0	0	2	0	8
Harvoni	8w	0	0	0	0	0	1	1
Harvoni+ Ribavirin	12w	0	2	0	0	0	0	2
Sovaldi+ Daklinza	12w	0	0	2	8	0	0	10
Sovaldi+ Daklinza+ Ribavirin	12w	0	0	2	8	0	0	10
Sovaldi+ Daklinza+ Ribavirin	16w	0	0	0	1	0	0	1
Sovaldi+Pegylated interferon	12w	0	1	0	0	0	0	1
Sovaldi+Ribavirin	24w	1	0	0	0	0	0	1
Total		1	9	4	17	2	1	34

At the end of the treatment course (including 4 cases interrupted treatment at lack of financial resource), HCV virus load tested under the limitation of detection(cannot be measured). 3-6 months after the treatment course, 22 persons voluntarily had high precision HCV virus load test, the result still under the limitation of detection. 6 cases reported slight adverse reactions as headache and fatigue, consistent with adverse reactions of the drug description. The average expenditure for diagnosis and treatment costs 1700 USD.

**Conclusion:** Some drug addicts continue to suffer from hepatitis C liver function worsen, and no long be able to wait for marketed Chinese DAA drugs. Social organization advocated hepatitis C patient to receive acceptable DAA therapy. Results showed the cure rate was very high (100%), a few side effect was mild (Long term result remains to be observed). As the DAA are included in China medicine listed in the near future and DAA drug costs continue to decline, extended DAA therapy to drug addicts and other HCV high infected people are expected.

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## **Establish of peer Naloxone service (under review)**

2010-2014, under AusAID HIV/AIDS Asia Regional Project support, Non government organization (NGO) Yundi Harm Reduction Network mainly composed of IDUs and Yunnan Institute for Drug Abuse held multi units and peer community jointly advocate for peer administrated Naloxone in order to establish a supporting environment. Drug users at 20 county Yunnan detoxification centre and Methadone clinics were trained of overdose knowledge, noticed the peer Naloxone service and local hotline since 2010. Then, NGO's harm reduction outreach workers or volunteer drug users from 20 counties in Yunnan China from 2010 to 2014 and 29 counties of 4 provinces (Yunnan, Sichuan, Guangxi and Xinjiang) in China in 2015 were trained of overdose knowledge and peer Naloxone service, volunteer recruited from them for another at least of 10 hours medical and peer training course. Australian Naloxone peer first aid training courseware was adapted. The peer performed Naloxone advocacy video, lecture, group discussion, observation, imitating performance and role play were adapted by Yunnan provincial emergency centre doctors and experienced peers. The training content included the knowledge of heroin overdose, judge of overdose, Naloxone antidote, the standard procedures of field operation, the observation after the Naloxone injection, dispute and referral of further medical service, record and data collection, questionnaires after the Naloxone service, drug user mutual aid protocol and consent procedure. Late, the heroin overdose peer administrated Naloxone first aid operation manual and 2-3 pieces of Naloxone distributed to each participants.

Counties were separated in 5 regions, five key peer facilitators from Yundi NGO were responsible for the irregular local area technical support. Naloxone supplement and quarterly service result report. NGO experts tour the site at each province two times per year for the advanced training, technical guide, file record review and service quality control.

### **2.2. Sites and participants recruitment**

2010-2014, Yundi Harm Reduction Network and Yunnan Institute for Drug Abuse, in collaboration with Open Society Foundation and 20 county public health agency, recruited IDUs serious epidemic 20 counties in Yunnan China as sites, in 2015, National Center for AIDS/STD Control and Prevention, China Centre for Disease Control (CDC) contracted Yundi Harm Reduction Network of heroin overdose serious prevalence 9 counties from four provinces(Yunnan, Sichuan, Guangxi and Xinjiang) in China added as sites. From 2010 to 2015, IDUs were eligible for the



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study if they received peer Naloxone service. From 2010 to 2011, the questionnaire was designed and modified after pre-test. The survey questionnaire collected from peer service receiver IDUs or some family members.

To ensure participants' privacy, the survey questionnaires were confidential and anonymous. The survey was conducted in a private space at the worksite. In total, the survey took about 15 minutes to complete. During self-administered survey, trained interviewer was available on site to clarify any questions that the participants had. Trained peers informed statement and verbal consent was obtained prior to the survey. As an incentive, the participants or family members received condoms, overdose prevention knowledge upon completing the survey. The survey protocol was approved by the NO 2 People's Hospital of Yunnan Province Ethics Committee and guided by the Yunnan Institute for Drug Abuse. Interviewers and investigators received human subjects training and followed ethical conduct in administering the survey.

### **2.3 Measure and data analysis**

Database was set up by Epidata3.1. Double data entry with 10% samples were randomly selected and verified. The study had the event description of multi units jointly peer Naloxone advocate activities, advocate letter signed, county detoxification centre and methadone clinics drug users trained, annual peers trained, Naloxone distributed, Naloxone mutual aid protocol signed and Naloxone rescued client from 2010 to 2015. Then, cross section survey and cluster sampling applied. first two years survey collected quantitative data from Naloxone service receiver's four different thematic domains: (a)demographic characteristics (age, sex, education, ethnicity, marital status, residential place); (b) drug using experience (e.g., years of drug using, heroin alone or poly drug using); (c) overdose experience by genders(e.g., heroin overdose experience for past 6 months and 1 year); (d) Naloxone service time and quality (e.g., the expense and time of the service, satisfaction of the service).

Respondents were asked about their current drug use. Poly-drug use was defined as the use of two or more illegal drugs. Self-reporting overdose and Naloxone rescued experience to estimate drug use's frequency of overdose and quality of the service among respondents. Self-reporting has been established as a viable way to estimate drug use among hard-to-reach populations. While self-reporting may underestimate drug use, the degree to under re-porting often varies in response to the type of drug used, frequency of use, and interviewer characteristics (23-26).

In the description, we analyzed of number of drug users trained at detoxification centre and methadone site, annual peers trained, Naloxone distributed, Naloxone mutual aid protocol

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signed and Naloxone rescued client, analyzed peer Naloxone service receivers demographic characteristics, drug using experience and overdose experience by genders. Then, we compared the Naloxone service expense and time needed to overdose site and satisfaction of the service between medical and peers. All analyses were conducted using the SPSS 17.0. Chi-square test examined the differences among the two groups (peer vs. medical staff). A P-value of  $\leq 0.05$  was considered statistically significant.

### **3. Result**

#### **3.1. Establish of peer Naloxone service**

Thirteen multi units and peer community jointly 5 advocate activities for peer administrated Naloxone held, result in advocate letter signed by 9 units for a supporting environment. An IDU network organized 27,000 Drug users from 20 county detoxification centre and 17 methadone clinics trained or noticed the peer Naloxone service since 2010. 590 drug user person times were trained of Naloxone first aid service. Among them, a network team of 45 from 20 counties and 63 outreach workers and peers from 29 counties of 4 provinces were recruited and further trained by IDUs NGO, 814 of Naloxone mutual aid protocol signed between outreach workers or peers and drug users, who were potential heroin overdose victims, 24,071 doses of Naloxone distributed in 5 years. Peer successful offered Naloxone first aid for 885 heroin overdose and none of Naloxone service participant died (Figure 1).

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## Cost-benefit analysis of peer-led Naloxone first aid among heroin overdose injection users

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**Abstract:** Objective Cost-benefit analysis was conducted on peer-led Naloxone first aid to heroin injection overdose users, in order to spread the use of the model. Methods Respective survey was conducted in 20 counties of Yunnan province. People who performed peer-led Naloxone first aid were collected, and the related budget of advocacy, training, peer subsidies, Naloxone and management from 2010 to 2014 was calculated. The model of health economics was used for cost-benefit analysis. Results Long-term 45 backbone peers at 20 counties kept providing first aid services. The total cost was 1, 578, 415 Yuan, and totally 564 people received the first aid, with 38.7 doses of Naloxone to successfully save one person's life, and an average of 2, 799 Yuan for one emergency service. The economic benefit by reducing death was estimated to be 404, 266, 750 Yuan, with a cost-benefit ratio of 1: 255. Conclusion The program of Naloxone first aid provided by NGO organization had significant health economics, thus it should be promoted for wider use. Keywords: Peer-led; Naloxone first aid; Heroin overdose; Cost effectiveness analysis

## Analysis of liver fibrosis and hepatitis C treatment service in HIV / HCV co infected patients in an AIDS antiviral treatment outpatient clinic in Yunnan

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**【Abstract】 Objective** To understand the HIV/HCV co infected liver fibrosis and hepatitis C treatment status, for the development the basis of Direct antiviral agents (DAA) treatment. **Methods** In March 2016, HIV/HCV co-infector at one Kunming City AIDS antiviral treatment clinic as target, a cross-sectional survey with purposely sampling and questionnaire collected demographic information, the hepatitis C service status and future expectations of services. FIB-4 and APRI fibrosis scores were adapted to collect liver fibrosis score results. SPSS17.0 was used for data analysis. **Results** A total of 303 clients were investigated. Among them, 71 persons FIB-4 liver fibrosis score was >3.25, by stages of F3-F4. The APRI method results in 20 patients scores >1.5 and listed as suspected fibrosis, and the other 55 persons scores >2.0 and listed as suspected cirrhosis. In fact, 81.8% (248 persons) expressed they would like to receive DAA treatment. **Conclusion** The clients mainly came from the low education the unemployed poor vulnerable groups, nearly 1/3 them had liver fibrosis or cirrhosis, Most expected to obtain hepatitis C related DAA treatment.

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## **Attachement 3:**

### **25th Harm Reduction International Conference held on 14-17 May 2017 Montréal, Canada**

**Combine abstracts      ID 1439 + ID 948 for oral presentation**

Session: PEER POWER IN SERVICES

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**Title: Peer-implemented naloxone treatment among heroin users: early experience and cost-benefit analysis in Yunnan province, China**

This study compares costs and benefits of peer-implemented naloxone treatment (PINT), introduced in 2010, and assesses users' experience, and perceptions of family members.

**Data:** Financial records on PINT-related expenses between 2011 and 2014 from all 20 counties. Answers to two questionnaire surveys (January 2010-July 2011) among PINT users and among family members in 13 and 3 counties respectively.

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## Results:

With the help of 45 peer educators PINT was provided to 564 heroin overdose patients in 20 counties at a total cost of 1,578,415 CNY (which includes costs for advocacy, training, per diem, naloxone purchase and internet). For each patient who benefited, on average 38.7 naloxone injections had been purchased. The cost-benefit ratio was 1:255 (1 CNY invested in the PINT program for a return value of 255 RMB in terms of life years saved). The total produced benefit was calculated as the number of years gained because of prevention of overdose death (potential years of life lost, PYLL), multiplied by the gross domestic product (GDP, for the years 2011-2014), adjusted for three age groups (30-39, 40-49, 50-58): this was 404,266,750 CNY.

For 108 PINT users, who answered a questionnaire, the median time between detection of overdose symptoms and receiving naloxone was 19 minutes. All prefer PINT above hospital-delivered-treatment. In total 205 family members participated in the second questionnaire survey (including 161 with a family member with naloxone treatment experience).

**Conclusion:** This first calculation of PINT cost-benefit ratio in Yunnan province may be useful for comparisons over time and with other regions. However, for comparison with other health care investments and investments in other sectors, cost-efficiency analysis is needed.

Early feedback from patients and family members seem to support the PINT delivery, although its acceptance varies across the cities. Future studies need to explore more standardized ways of delivery.

**Attachement 4:** Certificate of Yundi won the third prize of science and technology in Yunnan province

