

## Therapeutic interventions for users of amphetamine-type stimulants (ATS)

*The interventions described in this brief adhere to internationally accepted principles of drug treatment,<sup>1</sup> are evidence based and reflect a public health perspective. These are alternatives proposed to the predominantly law-enforcement approaches to ATS use currently common in the Asia–Pacific region. Medical interventions for the treatment of physical and mental health problems are described, as well as psychosocial treatment approaches including community-based interventions.*

### Introduction

The main objectives of therapeutic interventions for ATS users are to enable them to cease high-risk and harmful ATS use and address their health-care needs. Research<sup>2</sup> has shown that most psychostimulant users, especially younger users, do not access treatment services, and most are unaware of such services when they do exist. ATS users are reluctant to attend specialist drug services and are more likely to initially seek help from nongovernmental organizations (NGO) or within the primary health-care system. NGO and primary health-care workers are in a unique position to provide services for ATS users as their services are accessed by a broad cross-section of the community, so drug users need not feel stigmatized while seeking counselling and other interventions. Evidence<sup>3</sup> has shown that services for ATS users are best provided in the context of existing primary health-care services and NGO/welfare services such as drop-in centres for drug users, and not as “stand-alone” services or in compulsory/residential centres for which there is no evidence of effectiveness.

### Therapeutic interventions

Because of the diversity of ATS users and their drug-use patterns, interventions must be equally diverse and varied, and should depend on the extent and severity of the problems experienced by users. Below are recommendations for a step-by-step approach, which begins and ends in the community but may require highly skilled specialist care for severe problems resulting from substance use. To date, there is no evidence-based pharmacological treatment that is suitable for ATS users (i.e. substitution therapy).<sup>4</sup>

To meet the challenge of ATS treatment, an eclectic “stepped-care approach”<sup>5</sup> has been developed which aims to provide individualized, evidence-based and voluntary treatment. The “stepped-care”

1 UNODC/WHO. *Principles of drug dependence treatment: discussion paper*. March 2008. (<http://www.unodc.org/documents/drug-treatment/UNODC-WHO-Principles-of-Drug-Dependence-Treatment-March08.pdf>, accessed on 02 January 2011).

2 Adapted from: *The optimal mix of services for mental health*. WHO, Geneva, 2007. ([http://www.who.int/mental\\_health/policy/services/2\\_Optimal%20Mix%20of%20Services\\_Infosheet.pdf](http://www.who.int/mental_health/policy/services/2_Optimal%20Mix%20of%20Services_Infosheet.pdf), accessed 01 January 2011).

3 World Health Organization. *mhGAP Intervention Guide for mental, neurological and substance use disorders in non-specialized health settings (version 1.0)*. Geneva, WHO Mental Health Gap Action Programme, 2010. ([http://www.who.int/mental\\_health/evidence/mhGAP\\_intervention\\_guide/en/index.html](http://www.who.int/mental_health/evidence/mhGAP_intervention_guide/en/index.html), accessed 01 January 2011).

4 Srisurapanont M, Jarusuraisin N, Kittirattanapaiboon P. Treatment for amphetamine dependence and abuse. *Database of Systematic Reviews*, 2008, Issue 3.

5 NSW Department of Health. *Amphetamine, ecstasy and cocaine: a prevention and treatment plan 2005–2009*. Sydney, NSW Department of Health, 2005:13. ([http://www.health.nsw.gov.au/pubs/2005/pdf/amph\\_ecstasy\\_plan.pdf](http://www.health.nsw.gov.au/pubs/2005/pdf/amph_ecstasy_plan.pdf), accessed 02 January 2011).

approach uses psychosocial interventions at various stages of drug use. It aims to increase access to treatment, provide support to help users reduce or cease use, and mitigate the social, health and legal problems associated with continued use.

The services provided under the heading of “stepped care” include community-based prevention and health promotion, creating awareness that there are help/treatment options for ATS users, self-help groups, brief interventions of motivational interviewing and cognitive-behavioural therapy (e.g. one to four sessions), intensive individual counselling, detoxification and withdrawal services, crisis interventions and emergency care, as well as long-term rehabilitation and reintegration services. Research suggests that cognitive-behavioural therapy applied in a stepped-care approach is the treatment of best practice for ATS use.<sup>6</sup>

The diagram below summarizes the different levels of services recommended for ATS users.

<p><b>Step one:</b> Occasional ATS users believed to be at relatively low risk</p>	<p><i>Personal care activities:</i> Self/family care in reducing/stopping drug use. Self-help groups, informal community-based care</p> <p><i>NGO activities:</i> Information about the risks of drug use, brief counselling, peer outreach and education, drop-in centres, skills and vocational training, rehabilitation and reintegration services</p>
<p><b>Step two:</b> “Problem” ATS users</p>	<p>Drug services in <i>primary health-care</i> settings: assessment, brief counselling, harm reduction information, needle and syringe programmes, referral to specialist services if required, assistance with basic symptomatic detoxification and withdrawal. Referral back to the community for support, rehabilitation and reintegration services and/or to expert care</p>
<p><b>Step three:</b> Heavy / dependent ATS users</p>	<p>Specialized, voluntary <i>drug dependence clinical care:</i> Assessment of dependence, pharmacologically assisted withdrawal, harm reduction, needle and syringe programmes, outpatient and/or inpatient or residential treatment and specialized counselling, referral to rehabilitation and reintegration services, and back to the community for support</p>

There are many activities, which need to be undertaken at every step. Thus, case management and counselling are important at every stage – though different techniques and different intensities are indicated for ATS users, depending on their profiles. Also important is the provision of opportunities for ATS users to undergo vocational training and assistance to gain employment, as well as in improving family relations, dealing with legal problems and assisting in the development of new recreational activities and social networks in the community.

## A. Interventions in the community and in primary health-care settings (Steps one and two)

Providing services for ATS users in the community is the first step. Many ATS users are occasional users who require information and education about the risks of ATS use, as all ATS users may at some time require emergency care and management of acute withdrawal. All ATS users should be provided with condoms since ATS use tends to increase libido and hence the risk of unsafe sex. Needles and syringes should be provided to all ATS injectors.

Providing services for ATS users in the community and in primary health-care settings has many benefits:

- 1 It helps dispel stigma and discrimination as ATS users are not singled out.
- 2 ATS users are exposed to a range of evidence- and community-based psychosocial interventions as appropriate, without necessarily providing a specific therapeutic approach.
- 3 It is a setting where knowledge of community resources is available so that referral can easily be made to specialized drug treatment facilities or other ancillary services.
- 4 It is the setting to which drug users are likely to return if referred to specialist care. It is in the community that resources for rehabilitation and reintegration are mobilized.
- 5 It is the most cost-effective option for ATS users due to the lower costs of transportation to such health facilities as well as for the health sector in the delivery of services to ATS users and associated costs of referral to other standard health services such as HIV/ AIDS and tuberculosis.

Nongovernmental outreach workers and community primary care nurses are often tasked with initial assessment

6 National Drug Research Institute. *National Stimulant Strategy Background paper: monograph series No.69*. Australian Government, Department of Health and Ageing, 2007. ([http://www.health.gov.au/internet/drugstrategy/Publishing.nsf/content/98CFCAEC1A10B E00CA2574C5000C2641/\\$File/mono69.pdf](http://www.health.gov.au/internet/drugstrategy/Publishing.nsf/content/98CFCAEC1A10B E00CA2574C5000C2641/$File/mono69.pdf), accessed 01 January 2011).

of the severity of drug use of clients. Key determining questions should include the following:

- Pattern and frequency of ATS use
- Use of other substances
- Perceived consequences or harms.

### A.1 Psychosocial interventions

Research into a range of psychosocial interventions has yielded some encouraging results.<sup>7</sup> The key features of

successful psychosocial treatment interventions for drug problems are as follows:<sup>8</sup>

- a. Seek the input of drug users to determine what works.
- b. Do not blindly apply what seems to work for other drug treatment. Interventions must be appropriate. Adopt evidence-based approaches.
- c. Adopt a holistic approach that addresses the broader socioeconomic issues rather than only the drug use.

Cognitive-behavioural therapy (CBT)	Based on Social Learning Theory <sup>9</sup> and applied to the treatment of alcoholism, cocaine and nicotine dependence, and marijuana use. Key concepts include: encouraging and reinforcing behaviour change, recognizing and learning to avoid high-risk settings, improving coping skills, managing and avoiding trigger situations associated with drug-use behaviours, and learning to deal with drug craving.
Motivational interviewing (MI)	Used primarily to treat tobacco smokers but now applied to ATS users. Underlying assumptions are that people change their thinking and behaviour according to a series of identifiable stages, and it is possible to influence the natural change process with “motivational” interviewing techniques. Key concepts include establishing a “therapeutic alliance” showing empathy, providing feedback, helping the client to reframe his/her behaviour and thus reinforcing change. The five basic stages of change are described thus: pre-contemplation, contemplation, determination, action and maintenance stages. <sup>10</sup>
Contingency management (CM)	Contingency management is the systematic application of reinforcement/conditioning principles. Basic assumptions include the belief that drug and alcohol use behaviour can be controlled using reinforcement procedures. It is a powerful tool commonly used in many fields including education, business and industry. Positive reinforcement takes the form of verbal praise, earning programme privileges or rewards, or “graduating” to a higher level of status in the programme. Typically, the individual can earn larger-value rewards for longer periods of continuous abstinence from drugs and alcohol.
Harm reduction and risk reduction (see Brief 3 on harm reduction)	Designed to help drug users minimize the adverse consequences of their drug use. The interventions that make up the package of harm/risk reduction include provision of information, education and counselling, peer outreach, distribution of condoms and clean needles and syringes, ensuring easy access to primary health care, e.g. services for HIV/voluntary counselling and testing (VCT) and antiretroviral medication, drug counselling and treatment, crisis management, collaboration with civil society organizations including clinics/hospitals, police, entertainment venues, etc.
Brief interventions (BI)	Brief interventions aim to investigate a potential problem and motivate an individual to begin to do something about their substance use. The primary goal of brief interventions is to reduce the risk of harm that could result from continued use. Brief interventions on their own have been shown to promote behaviour change and can act as the first stage of more intense treatment. <sup>11</sup> Brief interventions are usually considered pre-treatment tools with the broad goal of reducing or eliminating drug use to avoid or minimize associated problems. <sup>12</sup>
Matrix model	Developed in the 1980s by the Matrix Institute on Addictions group in Southern California, USA. It has evolved over time to incorporate treatment elements supported by scientific evidence. It is a comprehensive behavioural treatment approach that combines behavioural therapy and family education including cognitive-behavioural therapies (see above), relapse prevention techniques, positive reinforcement for the abstinence-using components of motivational interviewing, contingency management, provision of accurate psychoeducational information, and introduction to the 12-step recovery programme (see below). It employs regular urine testing. The programme thus focuses on encouraging behaviour change and not on dealing with the underlying causes of drug use or psychopathology. Treatment is generally provided on an outpatient basis but can also be residential. <sup>13,14,15</sup>
Twelve-step programme	The “12-step programme” is a self-help programme such as Narcotics Anonymous (NA) and Alcoholics Anonymous (AA), based on a fellowship of ex-drug and/or alcohol users and plays a key role in relapse prevention by offering mutual support.

7 Methamphetamine. *Prevention Research Quarterly: Current evidence evaluated*, 2008, 24:2.

8 Adapted from: National Drug Research Institute. *National Amphetamine-type Stimulant Strategy Background paper: monograph series No.69. 5.1 Amphetamine-type stimulants treatment presentation*. Australian Government, Department of Health and Ageing, 2007 (<http://www.nationaldrugstrategy.gov.au/internet/drugstrategy/publishing.nsf/Content/mono69-l-mono69-l-ch5-mono69-l-ch5.1>, accessed 02 January 2011).

9 Bandura A. *Social learning theory*. New York, General Learning Press, 1977.

10 Prochaska JO, DiClemente CC. Trans-theoretical therapy: toward a more integrative model of change. *Psychotherapy: Theory, Research and Practice*, 1982, 19:276–288.

11 Baker A, Lee NK, Jenner L. *Models of intervention and care for psychostimulant users. Monograph series no. 51. Second edition*. Canberra, Australian Government Department of Health and Ageing, 2004;68

Engagement in the treatment process is important for ATS users seeking help. Overall, cognitive and behavioural approaches, such as motivational interviewing, contingency management and relapse prevention approaches, have proven to be of value in working with ATS users. Treatment may be offered in groups or in one-to-one sessions. It may be offered in a variety of settings and by diverse health-care providers including medical and non-medical health workers, NGOs, professional counsellors, peer workers and others. These interventions also include harm and risk reduction approaches.

Brief descriptions of some of the major interventions that have been provided to ATS users and for which there is encouraging evidence are given in the table on the left. The majority of treatment approaches are abstinence-based and many are too complex for use in primary care. It is evident that many of these approaches do, in fact, overlap.

*An example of very brief interventions* was developed and tested in Australia. A two- or four-session combination of motivational interviewing and cognitive-behavioural therapy was found to significantly increase abstinence among dependent methamphetamine users after six months. At the six-month follow up, close to half of the treatment groups were abstinent compared with only 30% who received a self-help booklet based on similar information.<sup>16</sup>

## B. Treatment in specialized drug treatment facilities – assessment and drug dependence treatment (Step three)

Drug users suffering from multiple problems and using multiple substances, and whose social functioning is impaired should be referred for specialist care. This is usually provided in specialized drug dependence facilities that are of a voluntary nature, i.e. services are delivered with informed prior consent of the drug users or their legal guardian.

### B.1 Diagnosis: ATS dependence

The diagnosis of amphetamine use and dependence is based on criteria listed in the *International Classification of Diseases (ICD)-10*.<sup>17</sup> Amphetamine dependence is diagnosed if three or more of the following have been experienced or exhibited at some time during the previous 12 months:

A strong desire or sense of compulsion to take stimulants;
Difficulties in controlling stimulant-taking behaviour in terms of its onset, termination or levels of use;
A physiological withdrawal state when stimulant use has ceased or been reduced;
Evidence of tolerance, such that increased doses of stimulants are required in order to achieve the effects originally produced by lower doses;
Progressive neglect of alternative pleasures or interests because of stimulant use;
Persisting with stimulant use despite clear evidence of overtly harmful consequences.

Around 11% of ATS users may become dependent and experience serious problems.<sup>18</sup> Dependence is generally associated with people who inject or smoke crystalline methamphetamine rather than among those who prefer oral or intranasal routes of ATS administration.

*Consequences of ATS dependence:* ATS dependence usually means that more intensive treatment interventions are indicated. Potential consequences may include paranoid ideation resembling schizophrenia, delusions and hallucinations, confusion, psychotic reactions, severe anxiety and panic attacks, violence, memory loss, aggressive or violent behaviour, mood disturbances, sleep disorders and severe weight loss.<sup>19</sup>

### B.2 Harmful ATS use

Somewhat less severe is “harmful use”. ICD-10<sup>17</sup> characterizes it as “a pattern of psychoactive substance use that is causing damage to health”. The damage may be physical (e.g. hepatitis following the injection of drugs) or mental (e.g. depressive episodes secondary to heavy alcohol intake). Harmful use commonly, but not

12 National Drug Research Institute. National Amphetamine-type Stimulant Strategy Background paper: monograph series No.69. 4.4 Challenges of applying prevention and harm reduction strategies to amphetamine-type stimulants. Australian Government, Department of Health and Ageing, 2007. (<http://www.health.gov.au/internet/drugstrategy/publishing.nsf/Content/mono69-l~mono69-l-ch4>, accessed 02 January 2011).

13 [www.Hazelden.org](http://www.Hazelden.org)

14 [www.SAMHSA.gov](http://www.SAMHSA.gov)

15 <http://www.matrixinstitute.org/>

16 Baker A et al. Brief cognitive behavioural interventions for regular amphetamine users: a step in the right direction. *Addiction*, 2005, 1100:367–378.

invariably, has adverse social consequences; social consequences in themselves, however, are not sufficient to justify a diagnosis of harmful use.

The diagnosis of harmful use can be made when ATS use does not meet the criteria for dependence.

There is clear evidence that the substance use was responsible for (or substantially contributed to) physical or psychological harm, including impaired judgement or dysfunctional behaviour, which may lead to disability or have adverse consequences for interpersonal relationships.

- The nature of the harm should be clearly identifiable (and specified).
- **The pattern of use has persisted for at least one month or has occurred repeatedly within a 12-month period.**
- The disorder does not meet the criteria for any other mental or behavioural disorder related to the same drug in the same time period (except for acute intoxication).

### **B.3 Treatment of ATS withdrawal**<sup>20</sup>

ATS withdrawal is generally not medically hazardous and fatalities directly attributable to ATS withdrawal are rare. The severity of withdrawal is dependent upon the dose and frequency of use, type of stimulant used, mode of administration, other drug use, current health problems and the duration of use. Supervision by health-care staff is indicated only in severe cases.

During and after withdrawal, users must be regularly monitored for their physical and mental state as withdrawal can lead to severe depression. Different symptoms become evident at different stages of the withdrawal. Thus, antidepressant medication is sometimes indicated for a period of three to four weeks after cessation of ATS use, after which time the symptoms generally disappear. Adverse consequences and symptoms usually resolve following a period of abstinence.

### **B.4 Treatment of ATS-induced psychosis**

It has been estimated that the prevalence of psychosis is 11 times higher among regular ATS users than among the general population, and that 23% of regular ATS users will experience symptoms of psychosis within a given year.<sup>21</sup> The treatment of ATS-induced psychosis is short-term antipsychotic medication; symptoms usually abate rapidly within days of stopping ATS intake.

### **B.5 Intensive psychotherapy**

As indicated above, for those with severe drug-related problems and those who may also experience mental health problems, more intensive interventions are indicated. For example, longer-term therapy plus treatment of co-occurring psychiatric and social problems and more extended support may be needed.

17 *International Classification of Mental and Behavioural Disorders (ICD)-10*. Geneva, World Health Organization, 1992. (<http://www.who.int/classifications/icd/en/GRNBOOK.pdf>, accessed 02 January 2011).

18 McKetin R et al. *Estimating the number of regular and dependent methamphetamine users in Australia* Sydney, National Drug and Alcohol Research Centre, 2005 (Technical Report No. 230).

19 UNODC The Global Smart Programme/Asia & Pacific Amphetamine-Type Stimulant Information Centre (APAIC). *Long-term effects of methamphetamine abuse*. 2009 ([www.apaic.org/index.php?option=com\\_content&view=article&id=120&Itemid=86](http://www.apaic.org/index.php?option=com_content&view=article&id=120&Itemid=86), accessed 04 February 2011).

20 World Health Organization. *Clinical guidelines for withdrawal management and treatment of drug dependence in closed settings*. Manila, WHO Western Pacific Region, 2009.

21 Australian National Council on Drugs (ANCD). *Methamphetamines: position paper*. Canberra, ANCD, 2007. ([http://www.ncd.org.au/images/PDF/Positionpapers/pp\\_methamphetamines.pdf](http://www.ncd.org.au/images/PDF/Positionpapers/pp_methamphetamines.pdf), accessed 02 January 2011).

22 Vocci FJ, Appel NM. Approaches to the development of medications for the treatment of methamphetamine dependence. *Addiction*, 2007, 102 (Suppl. 1):96–106.

### ***B.6 Oral substitution approaches for ATS users*** <sup>22</sup>

There are as yet no approved pharmacological/substitution treatments for ATS users. Potential oral substitution/pharmacotherapeutic interventions are still in the experimental stage but could be useful when they become available for chronic and dependent ATS users who are unable to cease use or even ameliorate their high-risk behaviours.

## **Summing up: the way forward**

It is clear that no one treatment modality fits all. Hence, it is suggested that a number of interventions be used, in which several of the above techniques and approaches are integrated and used as appropriate by counsellors. Such multimodal approaches adapt behavioural, supportive and other techniques to the particular problems of ATS users and, as such, are uniquely applicable to their complex needs. A key recommendation is to provide ATS users with appropriate information about the different treatment options. The search for pharmacological approaches is ongoing and when suitable treatment becomes available, it will provide an important treatment option for ATS users who are as yet unwilling or unable to cease ATS use.

The four Technical Briefs on Amphetamine-type Stimulants were designed by the WHO Regional Office for the Western Pacific in response to the demand from Member States and civil society organizations working with people who use drugs in the Region. They are intended to provide guidance and technical assistance.

WHO is grateful to Ms Edna Oppenheimer, a senior consultant, who compiled the available literature for the content and drafted the original; and for the coordination and inputs received from Dr Fabio Mesquita and Ms Nina Rehn-Mendoza from the Regional Office of the Western Pacific.

WHO also appreciates the intense collaboration of Mr Graham Shaw from WHO Cambodia, and Ms Annette Verster and Dr Nicholas Clark from WHO Headquarters towards a better final product.

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