Buckinghamshire Mephedrone Handbook & Other Novel Psychoactive Substances
## Contents

Acknowledgements .................................................................................................................. 3

1. Introduction ......................................................................................................................... 4

2. A brief history of mephedrone ............................................................................................ 5

3. Types of mephedrone .......................................................................................................... 8

4. How mephedrone works ..................................................................................................... 11

5. Combinations .................................................................................................................... 14

6. Health and psychiatric issues ............................................................................................. 16

7. Harm reduction ................................................................................................................ 19

8. Engagement and treatment ............................................................................................... 23

9. Treatment tools ................................................................................................................ 27

10. Types of NPS and treatment response ............................................................................ 44

11. References ...................................................................................................................... 54

12. Contact details ................................................................................................................ 56
Acknowledgements

This handbook was written by Tony D’Agostino and would not have been possible without the cooperation and assistance of a number of people:

I am grateful to Huseyin Djemil and Lee Scrafton from Buckinghamshire DAAT for their invaluable assistance and guidance and all the local managers, workers and users for their feedback and support.

Finally, I would also like to thank Jasmin Mulrooney for her contribution on the harm reduction section, Aidan Gray for many of the approaches, treatment tools and interventions that have been adapted for mephedrone, and Isabelle Pepin and Matt Hartigan for artwork and design.
1. Introduction

This pack is intended as a guide for drug workers and other professionals working with mephedrone users. It also includes a section that focuses on novel psychoactive substances (NPS), the chemical families these compounds belong to, and the appropriate treatment response that could be tailored for people who experience problems with these drugs.

Working with mephedrone and other NPS users does not mean drug workers need to learn new skills or devise interventions for each and every new psychoactive drug. What is needed is that treatment and support is offered in a way that is relevant, specific and attractive to this using group.

Not all the material provided in this pack will be relevant to all workers or services in Buckinghamshire. Much will depend on what your agency is offering and the differences in patterns of use within your catchment area or target group.
2. A brief history of mephedrone

“It is likely that the future drugs of abuse will be synthetics rather than plant products. They will be synthesized from readily available chemicals, may be derivatives of pharmaceuticals, will be very potent, and often very selective in their action. In addition, they will be marketed very cleverly.”


According to the European Monitoring Centre for Drugs and Drug Addiction, Saem de Burnaga Sanchez first recorded the synthesis of mephedrone in a French medical journal in 1929. The substance remained an obscurity until 2003, when it was re-discovered online by a bored underground chemist called ‘Kinetic’.

In Israel, a drug similar to mephedrone containing cathinone was sold legally from around 2004. The drug was called ‘hagigat’ and the Israeli government eventually banned it. The cathinone was modified (independently or possibly using Kinetic’s rediscovered formula) and the new legal product, mephedrone, was synthesised.

A few budding entrepreneurs (still keeping on the right side of the law) quickly scaled mephedrone production and the drug was originally distributed by Israeli websites in capsule form and branded as Sub-Coca or Neo-Doves. Israel had witnessed the first mass market in mephedrone. The drug was first made illegal here in 2008.

Mephedrone’s true chemical formula remained hidden until it was revealed on an underground online forum. The secret was out and other countries quickly became involved in distribution, with the Chinese imitating the manufacturing process and eventually taking over production. More competition drove the price down and increased the drugs availability.

The media also advertised the drug inadvertently, causing huge demand by warning against it and informing the public that there was a cheap, very strong, easily available and legal drug on the internet.

Mephedrone was also cleverly marketed online through social media, underground forums and Google Adwords, with advertisements (on where to buy the drug) appearing on the back of serious online news feeds.
Between the summer of 2009 and March 2010, the use of mephedrone grew rapidly in the UK. It was sold as a powder in new branded packets labelled as ‘plant food’ and ‘not for human consumption’, circumventing the Medicines Act, consumer standards and the Misuse of Drugs Act.

Mephedrone suddenly became readily available at music festivals, head shops and via the internet. A Mixmag survey around this time, found it was the fourth most popular drug in the UK, behind cannabis, cocaine, and ecstasy.

The dramatic growth in mephedrone also coincided with the decreasing purity of MDMA (ecstasy) and cocaine in the UK, a perspective reinforced in a report by the former National Treatment Agency for Substance Misuse, which estimated that in 2009 the average cocaine purity fell by 60% and by June 2010 almost all ecstasy tablets seized in the UK contained no MDMA.

Mephedrone was eventually controlled in the UK and classified as a Class B drug in April 2010. The drug immediately went underground and into the hands of street dealers (the only novel psychoactive substance to do so on a large scale in the UK), it doubled in price and purity initially dropped from 98% to 37%.

In 2013, the United Nations reported that the UK was Europe’s largest market for mephedrone and usage had increased 300% since the drug was criminalised. According to Home Office statistics from 2013/14, around 1.4 million people aged 16-59 said they had tried mephedrone at least once, around a quarter of a million more than in 2012/13.

However, the latest surveys conducted by Mixmag and the Global Drug Survey revealed that the drug has rapidly lost its appeal in UK clubs, coming virtually at the bottom of the ‘Top Twenty’ drug list in 2014. The drug also scored a high negative ranking and was the most unpopular in terms of bad effects. It seems mephedrone has declined as a recreational drug in the UK but it appears that its use is becoming problematic and entrenched in certain drug using communities and groups.
Evidence suggested that problematic mephedrone use was starting to come to light in 2012. Druglink Street Drug Trends identified a number of young peoples services in the UK seeing teenagers coming forward with behavioural problems associated with using the drug. A worrying aspect of the report was that compulsive injecting was happening with a cohort of users who had never previously injected drugs.

In January 2014, DrugScope roundtable reported problematic use of mephedrone among young people not in touch with services, youth offenders, those from the LGBT community involved in ‘chem-sex’ parties as well as reports of mephedrone injecting among established crack and heroin users. In December of the same year, Buckinghamshire’s Service User Consultation into non-opiate drugs found mephedrone was associated with adult problematic drug and alcohol use, had some of the highest risk behaviours in terms of injecting and was prevalent among the homeless and young people.

According to the findings from the 2014/15 Crime Survey for England and Wales, the prevalence of all NPS use among adults aged 16 to 59 was generally low when compared with the prevalence of well established drugs such as cannabis, cocaine and MDMA. CSEW may have underestimated the use of NPS (particularly mephedrone and synthetic cannabinoids) as the survey does not go out to prisons, the homeless, fresher students and young people under 16 - subgroups that are more likely to use NPS.

CSEW also found that the prevalence of cocaine and ecstasy was on the increase and independent reports have verified that the purity of both drugs have risen over the past few years. If the growth market in NPS in the UK was due to the purity of cocaine and ecstasy decreasing in 2009, then seeing the increased potency of these established drugs could be its demise.

However, the biggest market in novel psychoactive substances are synthetic cannabinoids, with most surveys finding that more than 60% of all NPS are spice-like products. While the spotlight was on mephedrone, sales of these drugs hugely increased. In the UK synthetic cannabinoids have been identified in prisons, psychiatric hospitals, care homes, hostels, supported accommodation and among the homeless. Synthetic cannabinoids predated the sale of mephedrone in the UK and in some countries they have been a bigger problem.

As of 2015, despite the hysteria surrounding a new alternative to mephedrone and regardless of how many new stimulants have surfaced in the UK, none of them have come close to the impact mephedrone has made. Mephedrone continues to be sold on UK streets and the proposed blanket ban on NPS will have no discernable effect on this already illegal drug.
3. Types of mephedrone

3.1 Cathinones

Mephedrone is from a family of related chemicals called cathinones, which include cathinone itself (the psychoactive property found in the shrub khat) and many other synthetically produced chemicals. The psychoactive cathinones are all categorised as stimulant drugs.

**Mephedrone (Mcat)**

Mephedrone (4 methylmethcathinone) was the most commonly available cathinone sold on the UK recreational market in the period running up to 2010.

Mephedrone is more potent than cathinone, and unlike the other chemicals it is related to, the compound still has a UK presence as an illegal drug. Mephedrone was not the first internet drug but it was certainly the most popular stimulant sold online, having global reach within a few years.

Mephedrone can have a distinctive ‘fishy’ smell. This could be due to an added solvent or the product may not have been dried properly (there have been reports that mephedrone did not possess the odour before it was banned), as yet these reports are anecdotal and have not been confirmed.

**Form:** Mephedrone hydrochloride is a white or off-white yellowish powder. It can also be in crystal form or appear as a pill / capsule.

**Routes of use:** Mephedrone is water-soluble and is usually snorted, but it can be swallowed in bombs (wrapped in a cigarette paper) or dissolved in water and injected.

3.2 Effects

Many people who have used mephedrone report that their experiences are similar to taking amphetamines, ecstasy or cocaine, producing a sense of euphoria and wellbeing, with users feeling more confident, alert and talkative. The high may initially last up to an hour but with subsequent dosing may only last 10 to 15 minutes, making it a relatively short-acting drug.
3.3 Street names

There are many street names for mephedrone, the most common include: Mcat, Bubble(s), Miaow, Meow Meow, Meph, Drone and White Magic. Other local names also exist and in some areas in the UK other drugs have been sold as mephedrone and users have no idea what substance they are taking. The term ‘bath salts’ is mainly used in the US to refer to a number of synthetic cathinones and not just mephedrone specifically.

3.4 Price

Mephedrone was mainly sold in bags containing a gram of the drug, which retailed between £10-£15 online or in head shops when it was legal. Cost for a gram is now £15-£20, though cheaper if bought in larger quantities. Tolerance builds quickly with mephedrone, with some users reportedly taking 12 to 20 grams in a 24-hour period.

3.5 Law

Mephedrone is currently a Class B drug in the UK. It is a Class A drug if prepared for injection.

3.6 Other cathinones

Naphyrone (NRG-1)

Despite the broad chemical generic ban on psychoactive cathinones in April 2010, suppliers were able to find loopholes, and within a few days a derivative, Naphthylpyrovalerone (brand name NRG-1) was offered for sale by online vendors and advertised as the first legal alternative to mephedrone.

Naphyrone is not strictly a cathinone as it is chemically related to pyrovalerone and tests revealed that the drug contained other banned cathinones and users were unknowingly breaking the law when taking it. However, NRG-1 did not reach the popularity of mephedrone in the UK and was made a Class B drug.

MPDV (Ivory Wave)

During 2010 a new product Ivory Wave began to be advertised on websites as a legal alternative to mephedrone. Analysis of test purchases initially revealed the active ingredient to be methylenedioxypyrovalerone (MPDV) – one of the banned cathinone derivatives.
Subsequent purchases of Ivory Wave, however, revealed a different psychoactive chemical called desoxypipradrol, which at the time was legal. The brand name Ivory Wave was used to sell various new stimulant-type drugs, again none of which became as popular as mephedrone.

Methedrone and methylone were also recognised on the UK drug market. Methedrone had similar properties to mephedrone and methylone’s effects were reported to be closer to MDMA. Other less popular compounds from the cathinone family that were in circulation included buphedrone, bromomethcathinone (4-BMC), flephedrone (4-FMC) and ethylone (MDEC).
4. How mephedrone works

In common with other amphetamine-like drugs, mephedrone stimulates the CNS (central nervous system), increases adrenaline throughout the body and releases dopamine and serotonin in the brain. Dopamine and serotonin are neurotransmitters that help control the feelings of pleasure.

Mephedrone is a synthetic stimulant that exhibits higher dopamine activity in the brain when compared to other amphetamines. According to neurological research on dopamine this may suggest greater risk of dependence when taking mephedrone, as yet there is not enough clinical evidence to establish this.

4.1 Structure and pharmacology

Research into mephedrone’s mechanism of action is a new and developing area of study, and though this work is in its infancy, a picture of how mephedrone works on the brain is emerging.

![Mephedrone and Methamphetamine structures](image)

On a molecular level, mephedrone is structurally similar to methamphetamine than it is to amphetamine (most studies use amphetamine as a comparison) and one would assume that the effects and problems caused by one drug would be the same for the other. To the far right of the molecule (circled above), mephedrone possesses a methyl group of atoms similar to methamphetamine, which allows it to cross the blood-brain barrier more effectively and will also deliver an ‘empathetic’ rush.

However, the two drugs are very different in duration, methamphetamine is a longer acting stimulant initially lasting 12 hours or more, compared to an initial high of 1-2 hours for mephedrone. Tolerance for both drugs increase dramatically with prolonged use, though re-dosing for mephedrone is much more frequent (every 10-15 minutes).

Emerging research suggests that while there are structural and behavioural similarities between mephedrone and other amphetamine-like drugs such as methamphetamine, mephedrone possesses its own unique pharmacology. For
example, like MDMA (but unlike methamphetamine), mephedrone does not seem to
damage dopamine nerve endings in the brain; rather it depletes serotonin levels.
Like cocaine hydrochloride, mephedrone is a short-acting vasoconstrictor but it
does not possess the anaesthetic qualities of cocaine or the subtlety of its high.
Alternatively, mephedrone enhances the neurotoxicity of methamphetamine,
amphetamine and MDMA, which makes combining these drugs particularly
dangerous.

4.2 Adrenaline, Dopamine and Serotonin

The diagram below looks at initial and prolonged release of adrenaline, dopamine
and serotonin and how this affects mephedrone users both physically and mentally.

<table>
<thead>
<tr>
<th>Adrenaline</th>
<th>Dopamine and Serotonin</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initial release:</strong> (craving mephedrone / before using)</td>
<td><strong>Initial release:</strong> (mephedrone high)</td>
</tr>
<tr>
<td>• Increased heart rate</td>
<td>• Reward / Euphoria</td>
</tr>
<tr>
<td>• Faster breathing</td>
<td>• Strong first high</td>
</tr>
<tr>
<td>• Sweating</td>
<td>• Feelings of confidence</td>
</tr>
<tr>
<td>• Shaking</td>
<td>• Reinforcing behaviour</td>
</tr>
<tr>
<td>• Butterflies / sickness in stomach</td>
<td>• Compulsion to use again (‘fiending’)</td>
</tr>
<tr>
<td><strong>Prolonged release:</strong> (continued use can cause the following / during or after a binge)</td>
<td><strong>Prolonged release:</strong> (depletion of serotonin / comedown)</td>
</tr>
<tr>
<td>• Can’t sleep</td>
<td>• Repeated compulsion to use</td>
</tr>
<tr>
<td>• Loss of appetite</td>
<td>• Buzz getting shorter and lower</td>
</tr>
<tr>
<td>• Eyes jittering</td>
<td>• Loss of interest in things not related to mephedrone</td>
</tr>
<tr>
<td>• Increased anxiety</td>
<td>• Mood swings</td>
</tr>
<tr>
<td>• Harder to think clearly / memory problems</td>
<td>• Aggressive outbursts</td>
</tr>
<tr>
<td>• Hallucinations</td>
<td>• Depression / suicidal thoughts</td>
</tr>
<tr>
<td>• Paranoia</td>
<td>• Lethargy</td>
</tr>
</tbody>
</table>

Adapted from Aidan Gray Hum London 2011
After the initial ‘rush’ from using the drug there is also a ‘down’ and the comedowns experienced by mephedrone users are described as being worst than other stimulants, especially if the drug is being injected.

The reasons for continuing to use mephedrone may include:

- **Pleasure**: wanting to repeat a pleasurable experience and developing a habit (linked to dopamine)
- **Craving**: (linked to adrenaline), there is an adrenal ‘kick’ throughout the body when a user sees a trigger, which in turn leads to craving the drug
- **Depression**: (linked to serotonin) an imbalance in serotonin levels may also influence mood in a way that leads to depression. This can combine with a loss of job or relationship breakup, etc and in a few cases may lead to suicidal ideation. It may also contribute to users experiencing severe mood changes and aggressive outbursts
- **Stress**: (linked to adrenaline), the stress hormone cortisol is also probably released by mephedrone use. The more stressed a mephedrone users is the more likely they are to engage in addictive behaviours
5. Combinations

Mephedrone is often used in conjunction with other drugs. Findings from the 2014/15 Crime Survey for England and Wales found mephedrone was the drug most likely to be used simultaneously with other drugs (68% of all cases of mephedrone usage), ecstasy (57%), amphetamines (50%), and tranquilisers (35%).

The use of other substances alongside mephedrone can increase harm and users need to be aware of the risks and dangers involved when combining. The reports of mephedrone-associated deaths in the UK indicate poly-drug use and there is evidence that mephedrone enhances the neurotoxicity of methamphetamine, amphetamine and MDMA, substances that are commonly used alongside mephedrone.

Below are some of the main combinations that have been identified

Mephedrone and alcohol

Many users combine mephedrone with alcohol. Alcohol in particular may increase the effects of mephedrone or help take the ‘edge off’ a comedown. A two-patient case study found that large quantities of alcohol ingested with mephedrone might lead to serious cardiac arrhythmias. Both drugs put pressure on the cardiovascular system and because mephedrone is a vasoconstrictor this may further increase the likelihood of heart problems and the risk of hyperthermia. Clients may also have developed a bigger alcohol problem than they were aware of when coming off mephedrone and may need to address this or consider a detox if they are drinking to excess.

Mephedrone and heroin

What needs to be established is the relationship between the two drugs.

- Is heroin the main drug of choice and they are using mephedrone for an up?
- Or is mephedrone the primary drug of choice and they are using heroin for the comedown, or, like alcohol, to take the ‘edge off’?
- Alternatively, they may be using heroin and mephedrone together, simultaneously, as a ‘speedball’, often called a ‘dart’ (mixed in the same syringe and injected)

Clients need to be informed of the dangers of use. They may regard heroin to be the primary drug of choice yet are spending much more money on mephedrone. Get the client to look at their patterns of use, risk-taking behaviour, cost of both habits etc. If they see the mephedrone use as just a secondary habit that is not really important they will probably find trying to stop very difficult.
Mephedrone and cannabis

Mephedrone and cannabis are commonly used in combination. Some clients may still smoke cannabis if they give up mephedrone, however, sometimes they find the act of buying cannabis may trigger them to purchase mephedrone instead. Also smoking cannabis may bring on strong cravings because of the association it may have had with mephedrone use.

Clients may also use synthetic cannabinoids in conjunction with mephedrone (especially if natural cannabis cannot be acquired) and service users need to be aware of the dangers and potency of some of these chemicals, which can make users more prone to nausea, psychotic episodes, hallucinations, paranoia, anxiety and agitation. Users may find that natural cannabis may not work for a few days after smoking synthetic cannabinoids.

Mephedrone and benzodiazepines

The main issue with benzodiazepine use is regarding the levels that are being used, how frequently and for how long. A client may not be aware that they need to come down gradually from the drug. Medical advice will need to be sought to develop an appropriate reduction plan.

Detoxification from benzodiazepine can also produce feelings of anxiety and depression, which can trigger the client into thinking that they need mephedrone or are experiencing a craving. Diazepam or alprazolam have also been clinically used to manage mephedrone users acute anxiety and overstimulation.

Mephedrone and other stimulants

Combining mephedrone with other stimulants such as cocaine, amphetamine, MDMA, crystal meth, modafinil, MPA, benzylpiperazine, butylone, methylone or pentylone to enhance stimulant and entactogenic effects, may increase potential of hyperthermia or serotonin syndrome.

Other combinations include:

Mephedrone in combination with

- Opiates, such as morphine or tramadol
- GHB/GBL to enhance sexual stimulation
- Ketamine or zopiclone to enhance visual hallucinations (this may increase the potential for psychosis)
- Viagra (may increase likelihood of cardiovascular problems)

The way mephedrone is combined with other drugs will ultimately depend on regional differences, cultural influences, availability of other drugs and the particular subgroup that uses them.
6. Health and psychiatric issues

There are major health risks associated with mephedrone use that many users are unaware of and serious health problems can be ignored. Information needs to be given on these physical and mental health risks and users need direct access to primary health care to help identify potential problems before they become serious.

Like other stimulant drugs, mephedrone can have an impact on the cardiovascular system. Some users report heart palpitations, or an irregular heartbeat, which may last for some time after consuming the drug. Also when mephedrone is metabolised in the body it may possibly break down into more toxic compounds such as 4-methylephedrine, which is known to be more toxic on the heart.

Users can experience blurred vision, jittery eyes, hot flushes and muscle tension, particularly in the jaw and face, and some people report that their fingers and other extremities have taken on a ‘blueish’ colour after use.

Mephedrone is harsh on the nose and people who snort the drug can experience extremely sore nasal passages, throats and mouths, with burns or cuts that can sometimes lead to nose bleeds. Some people choose to swallow the drug instead to avoid these particular problems.

Users can feel incredibly disinhibited on mephedrone and are more likely to take risks or have unprotected sex, which can lead to the transmission of blood-borne viruses and sexually transmitted infections. Mephedrone is also associated with compulsive and frequent injecting putting users at particular risk of the acquisition and transmission of blood-borne viruses. Injectors frequently exhibit bruising, vein clotting, serious infections, limb abscess and lumps under the skin.

Some users report that they are re-using the same needle or sharing because of the frequency of injecting. This places injectors at greater risk of septicaemia, endocarditis, deep-vein thrombosis and other complications. Mephedrone also causes constriction of blood vessels (vasoconstriction), which can make it harder to find veins, and slow down healing at injecting sites. Vasoconstriction can also put burden on the heart and in extreme cases could lead to congestive heart failure.
Other symptoms may include

6.1 Physical

- Elevated heart rate (tachycardia) and palpitations
- Loss of appetite and weight loss (sometimes severe)
- Nystagmus (eye jitters)
- Teeth grinding (bruxism) and jaw clenching
- Coldness or numbness in fingers or toes
- Discolouration of extremities and joints (blue fingers / toes)
- Sweating, overheating, hot flushes
- Sore and burnt nasal passages, nasal irritation and nose bleeds
- Sore throats and mouths (chemical burns)
- Dry mouth / dehydration
- Chest pain
- Arrhythmias
- Headaches
- Tremors and convulsions
- Unpleasant body odour
- Nausea, vomiting and stomach pain
- Soft tissue and vein damage (when injected). Intravenous users of mephedrone have reported endocarditis and paracitosis (leading to scratching and gouging of the skin of the face, necks and arms)

6.2 Psychiatric

- Hallucinations and delusions
- Paranoia and severe insomnia, especially after prolonged use
- Inability to concentrate and/or to focus visually
- Memory problems
- Aggressive episodes
- Acute depression (sometimes associated with suicide)
- Fatigue and low mood
- Anxiety and agitation

Compulsive use of mephedrone can lead to a number of unpleasant side effects including insomnia, involuntary muscle clenching, psychotic episodes and hallucinations. Mephedrone users express depression, anxiety and low moods when coming down from the drug.

There are some clinical case studies of serious neurological effects from using mephedrone and reports of fitting and convulsions. Serotonin syndrome may also occur, especially when the user has been exposed to two or more drugs (prescribed or illegal) that increase the release of serotonin in the brain (NEPTUNE Project 2015). Antipsychotics should be used cautiously with mephedrone intoxication, as they can increase seizure activity.
6.3 Craving and dependency

Craving is considered to be one of the main problems with mephedrone use. Strong craving for the substance is reported, sometimes rated higher than that experienced with other stimulant drugs. Studies have suggested that some of the most frequent effects after a session of mephedrone use are tiredness (but unable to sleep), blocked nasal passages, depression, anxiety, unusual sweat odours and an urge or craving to use more.

A report from the Advisory Council on the Misuse of Drugs (ACMD) on cathinones suggested, because of its similarity to amphetamine, users may become psychologically dependent on mephedrone (this has also been reported by drug services). Tolerance to mephedrone develops quickly and users tend to consume larger amounts than anticipated, with chronic use leading to cycles of bingeing and periods of recovery associated with depression.
7. Harm reduction

We are probably yet to see the full impact on health and associated harm from taking mephedrone. It is therefore important that users, if they choose to use mephedrone, get the correct information so that they can help reduce the risks and harm associated to themselves, community and others.

7.1 General advice

- Use with people you trust, in a comfortable environment, as this will reduce the feelings of paranoia and anxiety
- Do your homework – know what to expect
- Plan your night – this includes eating before you go out, how much money you’re going to spend, how you are getting home etc
- Set and setting is crucial – do not take any psychoactive substances if you’re not in the zone. This includes feeling stressed or unwell - ask yourself, are you in a fit state?
- Try and eat before using, as it may be some time before you eat again, (setting yourself alarms on your phone are a good way of remembering to eat and rehydrate) nutritious health food and drinks can be used and will increase vitamin intake and offset the depletion caused by mephedrone use
- Drink plenty of fluids to help avoid dehydration, isotonic drinks are particularly helpful
- If you are falling asleep, sleep on your side, prop yourself up with a pillow
- Don’t use heroin, methadone, tranquillisers, alcohol or any other drug for the ‘come down’ as this can develop secondary dependencies
- Always practice safe sex. Stronger condoms should be used
- Try to buy less, the effect goes down after the first few ‘hits’ so why waste the money
- Do not use regularly to avoid developing tolerance and dependency
- Don’t use with other stimulants drugs as this may cause overheating
- Using mephedrone anally is not advised, overdose can probably occur and there may also be damage to the membrane
- Write on your hands or arms what you’ve used and the estimated dosage. This will help first responders if you are found to be in trouble. There is also a Health ID app for iphones that can be accessed without the use of a passcode, which can pass on crucial information about you, should anything happen

7.2 Snorting

- Don’t share straws/notes as this can lead to an increased risk of contracting Hep C. Using multicoloured straws can reduce the risk of sharing when in a group. Assign you and your mates a colour and stick to it all night
- You need to grind mephedrone down into a fine powder before snorting, the flat edge of a credit card, or something similar, is much more effective than a razor blade
• Position the straw as high up the nostril as possible (you don’t want the drug attaching to the hairs of your nose)
• If snorting, clean out nostrils with water after each session (to avoid chemical burns)
• Don’t ‘rail’ (snorting long lines), you’re wasting most of it and are increasing the damage to the nasal mucus membranes
• Alternate nostrils (if repeatedly going to the same nostril)
• If both nostrils are bleeding, you need a break, damage is being done

7.3 Injecting mephedone

There have been reports of people injecting mephedrone across the UK, Romania, Slovenia, Ireland and the Channel Islands. In many cases mephedrone has been the main drug of choice and the only drug used intravenously. People describe an intense euphoria and a compulsion to frequently re-use when injecting it.

A small but significant percentage of mephedrone users in Buckinghamshire reported injecting 20 to 50 times a day over a period of 3 days or more and were re-using and sharing needles. The high levels of risk behaviours reported by this population were seriously concerning to those service providers in contact with these individuals.

Dangers of injecting

The dangers of injecting mephedrone are many with increased risk of abscesses, thrombosis and vein damage. Injectors also report intense burning sensations at injection sites and vein clotting. The amplified risk taking behaviour and strong compulsive nature of the drug can also increase the potential of using ‘dirty works’ or having ‘missed hits’, which in turn can lead to increased vein damage and the contraction of blood-borne viruses.

Mephedrone should be water soluble, and no heat or acid is needed, however, users have reported that the drug has been congealing and solidifying in the vein and in these cases they have used Vitamin C to break down the drug before injecting. Some injectors have also reported using Vitamin C or citric acid to break down mephedrone when in crystal form because it had not dissolved in water. More evidence needs to be gathered in this area to ascertain what is the safest method.

Users who inject mephedrone need to be aware they should

• Always use new needles, clean spoons and filters if injecting
• Rotate injection sites
• Rest between injecting sessions and try and keep healthy between binges
• Follow good hygiene practice and wash injection sites (before and after)
• Always filter your drugs
• Using easily identifiable equipment such as the Nevershare needle or filter syringe can reduce the likelihood of accidental sharing. Assign you and your mates a colour and code and only use your own!
• Using a “low dead space” needle means that less blood is stored within the syringe after the plunger is depressed and therefore will lower the risk of contracting a blood-borne virus. Sharing any equipment is dangerous but reusing low dead space equipment is less so.

• Use a fresh needle if you fail to find a vein first time; needles become blunt after one use – be careful to avoid scraping the needle on the bottom of the spoon.

• Dispose of needles responsibly. These can be returned to a needle exchange.

• Seek medical assistance if site becomes painful, tender or hot, or there is swelling for more than a few days.

• Get regular health check-ups and tests for blood-borne viruses (e.g. hepatitis B, hepatitis C, HIV).

• Never share equipment (inc. needles, filters, containers, spoons and water).

• Use the smallest needle you can without it becoming blocked.

Further screening and medical support is necessary for the prevention, detection and treatment of infections and spread of BBVs among users injecting mephedrone. Needle exchange policies need to be reviewed and monitored in response to high injection rates and safe needle disposal needs to be re-visited to accommodate the high needle usage. It is crucial for Needle and Syringe Programs (NSP’s) to respond to mephedrone use with pragmatism and empathy. Restricting supply of equipment will only stand to increase the risk of this already vulnerable population group. The chaotic lifestyle of IV mephedrone use may not make it easy for a client to bring back their returns every time and thus the traditional “one for one” policy must be amended.

It has always been recommended that 100% coverage is ensured (percentage of injections for drugs for which a new needle and syringe has been provided) however in populations where BBV contraction is more prevalent (i.e. prolific injectors) 300% coverage is encouraged. A varied range of stock is recommended to better suit the needs of those accessing the needle exchange including introduction of a pick and mix service which can immediately open up conversation, offer a personalised service and reduce the risk of drug related litter in the community (as the client only takes however much they need) thus securing the future of your local needle exchange.

The bottom line for safer injecting is not to inject, but this is always down to client choice. However, because of the sheer frequency of injecting mephedrone (20-50 times a day) this should be an option users should seriously contemplate, as they are doing significant harm to themselves.

**Injecting mephedrone with heroin**

Mephedrone has been mixed with heroin and used simultaneously in the same syringe in a similar way to a ‘speedball’, often called a ‘dart’. The combination of mephedrone and heroin can be very attractive as the ‘comedown’ experienced when mephedrone is used on its own can be possibly averted by the effects of heroin.
Users combining mephedrone with heroin have reported injecting 8-12 times a day. However, the effects of mephedrone can interfere with the user’s ability to judge how much heroin they have really had and increase the potential for accidental overdose. Amounts of each drug should be lowered when used in combination and users should be steered down to smaller barrels.

Warning: Always check with your organisation before giving harm reduction information out to clients.
8. Engagement and treatment

In England, there was an 82% increase in mephedrone presentations for treatment between 2011/12 and 2013/14, from 900 to 1,641 (Public Health England 2014). Primary mephedrone users do not see themselves as having addiction problems and do not see themselves as the people who would use drug services for advice and support (NEPTUNE Project 2015).

This is possibly why NPS users have been accessing specialist ‘club clinics’, sexual health surgeries and night-time provision outside the drug and alcohol field. Users are also seeking advice from friends, online forums and their GPs before going into a drug service (Centre for Drug Misuse Research Glasgow 2014).

However, there is emerging evidence that mephedrone has a psychological dependence potential. Frequent users are also putting themselves at high risk and are accessing emergency services because of the adverse effects of the drug. The problem for drug services has been in trying to attract and engage mephedrone users before they reach crisis point.

8.1 Engagement

Services need to be clear about the clients they are seeking to attract, are they recreational users who are likely to be in employment, or more chaotic users who have no job or fixed abode? Information should come from local needs assessments and service user consultations to build a picture of the local demographic. It is important that all services establish working relationships with other relevant agencies and advertise each other’s services.

The following guidelines offer some advice on how to increase the likelihood of engaging mephedrone users.

- Due to some mephedrone users binging for up to 3-5 days without sleep or food, agencies should be prepared for clients to fail to attend appointments or to turn up late. A phone call or text (if permission has been given) the day before the assessment can increase attendance rates and also give the worker opportunity to assess the current situation

- Do not produce large amounts of paperwork on a client’s first visit. Although it is important to gather information and keep good records, it is of more value to increase the likelihood of the client returning to the service. Clients who are using mephedrone may be less informed about drug services than opiate users and can often be extremely anxious about their first visit. Keep initial screening forms to the bare minimum and devise a system to collate more detailed information during successive visits whilst a relationship of trust has been built up
• Ideally some form of outreach service should be offered to clients who are homeless, live itinerate lifestyles or are in crisis. A further bonus of delivering outreach services is that there is a structured mechanism that will allow for using patterns, changing trends and shifting health concerns to be quickly identified. Well delivered outreach services can enhance the treatment experience for individuals and will allow the drug treatment sector to develop meaningful relationships with other hidden communities.

• If users are injecting both mephedrone and heroin, then it is important to have good working relationships with harm reduction and needle exchange services, detoxification services and prescribing services.

• In trying to attract users to services it is important that agencies talk to and consult users, families and carers themselves. They can help build a service that is attractive and effective. They can also help spread the word about the service. User consultation should be a regular part of service evaluation so that agencies can respond quickly to changes in client group and drug trends.

• Agencies need to advertise their services in order to let users know they exist. This can be done on a variety of levels and needs to take into account that the client group can be mistrusting, new to services and have little faith about the service to begin with.

The initial contact with the client offers the opportunity to maximise engagement by:

• Asking a client about their drug use can provide the opportunity to discuss harm reduction interventions.

• Asking about specific physical and mental health issues can help to identify problems that need immediate attention.

• Dealing with practical issues, such as housing, benefits and money can result in a tangible change, which in turn can increase trust and help build an effective working relationship with the client.

Some open access services have found that the best way to attract users into a service is by 'word of mouth'. If the service is good and it delivers, then this will be reflected in the agency’s reputation. Make sure that the service delivers what it says it is going to deliver. Develop regular user consultation and listen to what is being said.

8.2 Stepped care model

There is a large body of evidence on the effectiveness of psychosocial interventions (PSIs) for the management of drug problems and for this to be provided by following a stepped care model.
It has been recommended that a two-step treatment process be in place to deal with the severity of issues and level of motivation of presenting mephedrone and other NPS users (NEPTUNE Project 2015). It is common to refer to ‘lower-intensity PSIs’ and ‘higher-intensity PSIs’.

**Lower-intensity**

Lower-intensity PSIs can be divided into two main interventions:

- Provision of brief advice / information
- Delivery of brief interventions

Health professionals outside of drug and alcohol treatment may carry out lower-intensity PSIs.

**Higher-intensity**

Structured drug treatment is offered to clients with ‘higher severity’ problems relating to mephedrone or NPS use. Structured drug treatment may be delivered as one-to-one or to groups. Treatment may also need to include complimentary therapies, life skills and wellbeing support and not specifically about drug use.

**The main principles of a stepped care approach are as follows:**

- The least intrusive intervention needed to achieve a required outcome is delivered first
- If an intervention does not achieve the desired outcome, service users should be offered the option of being ‘stepped up’ to a more intensive intervention
- Where a higher level of intensity of treatment is no longer required, ‘stepping down’ to a less intensive option should be offered
- Clients should have access to all levels of treatment within a treatment system

*Source: NEPTUNE Project 2015*

Clients should have access to the interventions likely to be required to achieve their outcomes, and not unnecessarily proceed through lower levels in a stepwise order.

**8.3 Mapping**

There is evidence that treatment outcomes can be further enhanced with the use of ITEP mapping tools. Mapping tools are not psychosocial interventions or a clinical tool but more a method that can improve the delivery of treatment.

Current approaches are based on strengths and needs, and a ‘recovery capital’ model. A recovery capital model looks at the strengths and needs a client has over a range of emotional and environmental domains.
There are four types of recovery capital:

- Human capital – skills, employment, mental and physical health
- Physical capital – housing, money
- Cultural capital – values, beliefs
- Social capital – relationships with others

The more recovery capital (resources) clients have across these domains the more the likelihood of achieving positive outcomes. Fewer resources might be an indication for more intensive interventions.
9. Treatment tools

9.1 Group / individual work

The following list gives a basic foundation on which you can build an individual or group work package for mephedrone:

- **How it works:** Make users aware of how mephedrone is working on their body and the impact this can have on their health and mental state. Make them aware that there is an initial release of adrenaline when they are triggered and how this leads to craving the drug.

- **Health:** Using mephedrone may have had some effect upon the client’s health. Begin to educate clients regarding the health risks associated with mephedrone use. The knowledge of health issues amongst users is usually very poor. Keeping healthy through exercise, eating well, health / fitness apps, meditation etc, will help clients feel better and also counteract high adrenalin levels, impaired immune system and general poor health.

- **Identifying strengths:** Get clients to look at what their strengths are and what resources they have. Clients will need to draw on these strengths and resources when achieving a goal or desired outcome.

- **Triggers:** It is important for a client to understand how triggers work, how this links in with the “fight and flight” response and what their main triggers are. Users can often react to the same set of triggers over and over again unless awareness is gained.

- **Cravings:** Triggers usually lead on to cravings, it is important for users to understand what they are and what to do when cravings start. Users often feel powerless when craving and knowledge can change their perception.

- **Euphoric recall:** Seeing former mephedrone use through rose tinted glasses or just remembering the good times of using can ultimately lead to clients lapsing. Making clients aware of euphoric recall gives them understanding of how personal actions can lead to cravings and will also prepare the client for when this happens.

- **Dealing with lapses:** It is important that lapses are worked with quickly and effectively so that a short using episode does not turn into a full relapse. Staff should be aware of the impact that feelings of guilt and a sense of failure can have on the client’s response and be able to work with this.

- **Relaxation:** The more relaxed clients become the less likely they are to crave mephedrone. Relaxation techniques also provide practical solutions for coping with cravings or potential trigger situations.
• **Social networks**: Support can come from various areas, such as college, religion, family, online support groups, mutual aid, non-using friends, hobbies and employment. The more clients are involved in meaningful social relationships the more likely they are to recover from mephedrone use

• **Practical issues**: Clients may have built up debt, housing problems, feel isolated or have become involved with the criminal justice system. Practical help and support may need to be offered in dealing with these issues

• **Goal setting**: This gives clients focus and direction in their recovery. It will help clients plan their goals in an effective way and make them specific and time based

• **Successful and unsuccessful attempts**: If a client achieves a goal, get them to look at how they did it and how they made it successful. If it was an unsuccessful attempt, get them to look at what went wrong, what they can learn from the process and what they need to do next time

• **Therapeutic treatment**: Some users may have long-term issues that they wish to address. These issues may have been present before they started to use or were developed during their use

**By the end of the sessions the client should have:**

• Developed an understanding of mephedrone and how it works on the body
• Developed a personal awareness of their own patterns of use
• Developed an understanding of the ways to counteract triggers, cravings etc
• Know what their strengths are and how to cope in difficult situations
• Developed an awareness of issues that need to be addressed
• Met certain goals, built recovery capital and progressed in their treatment

**9.2 Treatment tools**

The following treatment tools can be used to support mephedrone users in their recovery and covers the range of domains clients can draw on to help them achieve their goals.

The following tools will help:

1. Track patterns of use and identify strategies for managing triggers and cravings
2. Set goals based on the client’s strengths and skills
# Awareness checklist

Answer the questions as truthfully as possible so that you can become more aware of when you are going to use mephedrone or are building up to use. Tick all boxes that apply to you.

## 1. How do you physically feel before you use?

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Shaking</td>
<td></td>
<td>Heart beating</td>
</tr>
<tr>
<td>Energised</td>
<td></td>
<td>Fast breathing</td>
</tr>
<tr>
<td>Sweating</td>
<td></td>
<td>Stomach churning</td>
</tr>
<tr>
<td>Other:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## 2. How do you feel emotionally before using?

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxious</td>
<td></td>
<td>Depressed</td>
</tr>
<tr>
<td>Excited</td>
<td></td>
<td>Happy</td>
</tr>
<tr>
<td>Guilty</td>
<td></td>
<td>Angry</td>
</tr>
<tr>
<td>Other:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## 3. Is there a specific time of day, week, and month when you use?

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Afternoon</td>
<td></td>
<td>Evening</td>
</tr>
<tr>
<td>Friday’s</td>
<td></td>
<td>Weekends</td>
</tr>
<tr>
<td>Monthly</td>
<td></td>
<td>Anytime</td>
</tr>
<tr>
<td>Other:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## 4. What places do you use in?

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Home</td>
<td></td>
<td>Partners/friends house</td>
</tr>
<tr>
<td>Street</td>
<td></td>
<td>Chem-sex party</td>
</tr>
<tr>
<td>Club</td>
<td></td>
<td>Pubs/bars</td>
</tr>
<tr>
<td>Other:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## 5. What areas do you use in?

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Home area</td>
<td></td>
<td>Work area</td>
</tr>
<tr>
<td>Social area</td>
<td></td>
<td>Dealing area</td>
</tr>
<tr>
<td>Where user friends live</td>
<td></td>
<td>Area changes</td>
</tr>
<tr>
<td>Other:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 6. Who do you use with?

<table>
<thead>
<tr>
<th></th>
<th>Alone</th>
<th>Partner</th>
<th>Friends</th>
<th>Other users</th>
<th>Using partner</th>
<th>Dealer</th>
<th>Other</th>
</tr>
</thead>
</table>

### 7. How do you get the money to use?

<table>
<thead>
<tr>
<th></th>
<th>Benefits</th>
<th>Work</th>
<th>Dealing</th>
<th>Crime</th>
<th>Savings</th>
<th>Selling/borrowing</th>
<th>Other</th>
</tr>
</thead>
</table>

### 8. How much money gets you thinking about using?

<table>
<thead>
<tr>
<th></th>
<th>£5 - £10</th>
<th>£15 - £20</th>
<th>£40 - £50</th>
<th>£90 - £100</th>
<th>£150 - £200</th>
<th>£200 - £300</th>
<th>Other</th>
</tr>
</thead>
</table>

### 9. What equipment do you use?

<table>
<thead>
<tr>
<th></th>
<th>Cigarette papers</th>
<th>Mirror</th>
<th>Straws or notes</th>
<th>Credit card</th>
<th>Small plastic bags</th>
<th>Syringes etc</th>
<th>Other</th>
</tr>
</thead>
</table>

### 10. What pattern of use do you have?

<table>
<thead>
<tr>
<th></th>
<th>Daily use</th>
<th>Binge using</th>
<th>Whenever I can</th>
<th>When I get the money</th>
<th>When socialising</th>
<th>Depends on mood</th>
<th>Other</th>
</tr>
</thead>
</table>

© TD Consultancy 2015
## Awareness action plan

**Name:**

<table>
<thead>
<tr>
<th>1. How do you physically feel before using?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Be aware of how you feel physically before you use mephedrone and use this as an indicator. Most of the physical feelings before you use are down to the release of adrenaline and can be controlled. Anything that helps you relax and bring your breathing rate down will help. Try breathing exercises, meditation, have a bath, massage, acupuncture etc. Find out what works for you.</td>
</tr>
<tr>
<td><strong>Personal plan:</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. How do you emotionally feel before using?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Again use these as indicators, but also be aware of situations that may develop these feelings. For example, if you know a situation or person usually makes you feel angry or depressed. Look at ways of coping with this or avoid the situation.</td>
</tr>
<tr>
<td><strong>Personal plan:</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Is there a specific time of the day, week, and month when you use?</th>
</tr>
</thead>
<tbody>
<tr>
<td>This will depend upon your pattern of use, but once you are aware of your danger times you can develop strategies that make these times less of a problem. For example, if your using time usually begins every Friday then look for alternatives, try to be in a safe place with people that will support you and are not connected with your use.</td>
</tr>
<tr>
<td><strong>Personal plan:</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. What places do you use in?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most places that you have used mephedrone in can be avoided. Places have strong associations and will most probably be frequented by the people that you have used with. If you use at home try to change the environment, move furniture around, decorate or clean and get rid of particularly strong associations that remind you of using.</td>
</tr>
<tr>
<td><strong>Personal plan:</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. What areas do you use in?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Some of the areas that are associated with using can be difficult to avoid so you need to develop strong strategies. Streets can be avoided and you can change your route, it may be less convenient but it will help to keep you safe.</td>
</tr>
<tr>
<td><strong>Personal plan:</strong></td>
</tr>
</tbody>
</table>
Personal plan:

6. **Who do you use with?**
   
   Avoid people that you used mephedrone with. Most of these will be drug-using acquaintances with the relationship based around using. If they are friends then they will understand why you cannot have contact with them. If you use alone then try to be with people at your danger times.

Personal plan:

7. **How do you get the money to use?**
   
   Receiving money or knowing when you are going to get it, can be one of the biggest triggers to use. These times can be extremely difficult and you need to work out ways of coping with this.

Personal plan:

8. **How much money gets you thinking about using?**
   
   You need to be aware of the amounts of money that spark you off. Whatever that amount try not to carry the money around with you as it could trigger you to use. Also be aware that when you stop using your pattern may change and the amount becomes less.

Personal plan:

9. **What equipment do you use?**
   
   If you are serious about giving up you need to get rid of everything that you associate with using. Throw these things away and check your house for anything that may be lying around.

Personal plan:

10. **What pattern of use do you have?**
    
    Awareness of your individual pattern of use is really important. Be aware of how money, moods, social contacts fit in as well as the frequency of your use. If you are a binge user, be especially aware that the periods of drug free time between each use can lull you into a false sense of security.

Personal plan:

*Source: Adapted from COCA/NTA, Cocaine Resource Pack, Aidan Gray, 2005.*
Triggers chart

In order for you to increase your chances of getting off mephedrone you need to understand what your main triggers are.

List your main triggers in the first column. Once this is done look at each individual trigger and think of ways that these can be avoided or coped with. Talking to other people about these triggers can sometimes help to develop new ideas.

<table>
<thead>
<tr>
<th>Trigger</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td></td>
</tr>
</tbody>
</table>
Coping with cravings

Cravings will be one of the biggest areas that you will have to deal with when coming off mephedrone and a number of emotional or social factors may trigger you to crave. Think of how you can avoid these.
Dangerous situations

Developing awareness of dangerous situations that may lead to using can be difficult when you have only just stopped using mephedrone. This is because situations that are now dangerous where once thought of as areas of opportunity. It is important that you start to anticipate these situations as much as possible and develop plans to cope with them if they do arise. Use the table below to help develop plans for dangerous situations:

<table>
<thead>
<tr>
<th>Suggested plans</th>
<th>Personal plans</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Anticipate dangerous situations</td>
<td>Situations that lead me to crave:</td>
</tr>
<tr>
<td></td>
<td>1.</td>
</tr>
<tr>
<td></td>
<td>2.</td>
</tr>
<tr>
<td>2. Leave or change the situation</td>
<td>Safe places I can go:</td>
</tr>
<tr>
<td></td>
<td>1.</td>
</tr>
<tr>
<td></td>
<td>2.</td>
</tr>
<tr>
<td>3. Distract yourself with things you like to do</td>
<td>Good distracters:</td>
</tr>
<tr>
<td></td>
<td>1.</td>
</tr>
<tr>
<td></td>
<td>2.</td>
</tr>
<tr>
<td>4. Have a list of emergency numbers</td>
<td>People I can call in an emergency:</td>
</tr>
<tr>
<td></td>
<td>1.</td>
</tr>
<tr>
<td></td>
<td>2.</td>
</tr>
<tr>
<td>5. Remind yourself of you success to date</td>
<td>My main successes to date are:</td>
</tr>
<tr>
<td></td>
<td>1.</td>
</tr>
<tr>
<td></td>
<td>2.</td>
</tr>
<tr>
<td>6. Change the thoughts of using to more positive thoughts</td>
<td>Positive thoughts:</td>
</tr>
<tr>
<td></td>
<td>1.</td>
</tr>
<tr>
<td></td>
<td>2.</td>
</tr>
<tr>
<td>7. I will put off the decision to use for 15 minutes</td>
<td>Techniques I can use to relax me during those 15 minutes:</td>
</tr>
<tr>
<td></td>
<td>1.</td>
</tr>
<tr>
<td></td>
<td>2.</td>
</tr>
</tbody>
</table>

Source: Adapted from All Purpose Coping Plan, Kathleen M. Carroll Ph.D, 1998
**Euphoric recall**

Euphoric recall is looking at something in your past through rose tinted glasses or just remembering the good bits of an event and forgetting the negative parts. Euphoric recall with mephedrone can act in the same way in that only good memories are shown which help to build up your expectations and anticipation of drug use and can lead to craving.

You need to build up an awareness of how euphoric recall works with you and also how other people can spark this off. Once you are aware of how discussions about the ‘good times’ affects you try and avoid them. Also be aware of smells that could trigger memories of use.

**The good and bad of using**

Look at the reality of using. List both the good and bad elements of mephedrone use and weigh the issues up. Be truthful and honest to yourself.

<table>
<thead>
<tr>
<th>Good</th>
<th>Bad</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Lapses

It is important that you start working with your lapse quickly. Begin by tracing the events that led to you using. You may need to go over things a few times, going one step further back to trace the initial set up. Look at whom you were with? How did you feel emotionally and physically before you lapsed? Remember a lapse is not failure; you should have learnt something from it.

**What you need to understand is:**

- What happened?
- How it happened?
- How can you stop it happening again?

Using event

What happened before that?

And before that?

And before that?

And before that?

And before that?

Now that you have a better understanding of what happened and how it happened, how can you stop it happening again?

1.
2.
3.
What are your strengths?

Try and think about personal strengths and resources that are available to help you. How will your strengths help you with the changes you want to make? Which of your personal strengths will serve you the most?
Social networks

What social networks do you have? Support can come from various areas, such as college, religion, family, online support groups, mutual aid, non-using friends, hobbies and employment.
Goal getter

Think about a goal you need to achieve. Try not to set a difficult one at first, move on to more difficult ones as your confidence builds. Be realistic about what you’re aiming for, set yourself specific actions and when you need to do this.
Goal getter sample

Below is an example of a client goal and how they set out to achieve that goal. The ‘Goal Getter’ is a SMART map (Specific, Measurable, Attainable, Realistic and Timely). A specific goal has a much greater chance of being accomplished than a general goal. The Goal Getter can be used in conjunction with recovery care plans.
What was your success?

What was your success? What did you do to make it happen and what did you learn about yourself? How can you use what you have learnt from this experience in the future?
Running into a brick wall

Ok, you’ve had an unsuccessful attempt, remember you have not failed; it may take several attempts before you accomplish your goal. What made the attempt unsuccessful and what can you do differently next time?

Client Name:
Keyworker:
Date: / / 

What was the unsuccessful attempt?

What made it unsuccessful?

Your actions?  Your thoughts?  Describe how this has happened to you before

What can you do differently next time?

© TD Consultancy 2015
10. Types of NPS and treatment response

The term ‘novel psychoactive substances’ (NPS) refers to newly available drugs that mimic the effects of traditional illegal drugs. Commonly known as ‘legal highs’ most of these substances have been branded up into colourful packaging and it is difficult to know exactly which chemical is in each brand. For example, various chemicals have been sold under the brand names ‘Benzo Fury’ or ‘Ivory Wave’. Sometimes the brand names themselves can be confusing, for instance ‘China White’ contains MPA, an analogue of methamphetamine, not an opiate as some might assume and ‘Benzo Fury’ is not a benzodiazepine (a downer), it takes it name from a group of chemicals called benzofurans, the majority of them being stimulants.

10.1 Types of NPS

There are a wide range of psychoactive drugs spanning several different chemical families, some are ‘organic’ such as mushrooms, ethno-botanicals (hallucinogenic flowers, seeds, cactus etc), natural gases (such as nitrous oxide) or they are synthetic man-made drugs like mephedrone.

Plants and fungi (Magic Mushrooms)

A number of natural plants and fungi contain psychoactive chemicals, and fresh or preserved plant and fungal materials have long been offered for sale online and via head shops.

This activity was largely terminated in the UK by the Drugs Act 2005, which controlled fungus that contained psilocin.

Phencyclidine (PCP) and ketamine-like agents

PCP and ketamine were both developed as anaesthetics for human use. PCP was discontinued because of side effects, including hallucinations and psychotic reactions. Both drugs are controlled, as are some of the analogues, including methoxetamine (an analogue of ketamine) and the 3 and 4-methoxy derivatives of PCP.
5-MeO-DALT

5-MeO-DALT is a hallucinogenic drug. ‘Blast’ is an example of a branded packet.

It comes as a white or tan/brown fluffy powder. Effects normally last 2-4 hours. It is often smoked, swallowed (bombed) or mixed with juice as it is reported to have an unpleasant taste.

People taking the drug can experience a rush, visual hallucinations as well as nausea, aching muscles and anxiety.

AMT

Alpha-Methyltryptamine also known as AMT was originally developed as an antidepressant in the 1960s but resurfaced as a recreational drug in the 1990s.

AMT is a long lasting (14-24 hours) hallucinogenic and stimulant drug similar to LSD and MDMA. It can make you feel energetic and it also increases your heart rate and breathing.

NBOMes

The most popular of the NBOMes are 25I-NBOMe (25I), 25C-NBOMe (25C) and 25B-NBOMe (25B). They are all N-Benzyl-Oxy-Methyl ("NBOMe") derivatives of known phenethylamines such as 2C-I and 2C-B. The chemicals first appeared on recreational markets in 2010.

25I-NBOMe has similar effects to LSD, though users report more negative effects while under the influence and more risk of harm as compared to LSD.

It is active at extremely low sub-milligram doses and is the most frequently used of the NBOMe series. It has been linked to several hospitalisations and deaths.
Synthetic cannabinoids (Spice)

In the 1970s, after discovering the psychoactive chemical in natural cannabis tetrahydrocannabinol (THC), the pharmaceutical industry created numerous synthetic cannabis-like drugs. Many of the substance names started with the initials of the chemists who created them (JWH or AM) followed by a string of numbers. Several psychoactive artificial cannabinoid families exist (e.g. AM-xxx, HU-xxx, JWH-xxx, CP xxx). Years later this literature was rediscovered and a range of different synthetic cannabinoids were synthesised.

Spice (JWH-018) is a synthetic cannabinoid that was first synthesised in 1995 for experimental purposes, and then marketed by online vendors and head shops. It was the first synthetic cannabinoid to become popular in the UK. The product was attractively packaged in green, silver or gold foil sachets and priced at £10-20.

A German pharmaceutical company revealed the herbal mixture in the ‘Spice’ product had been laced with small quantities of synthetic chemicals that acted on the cannabinoid receptor in the brain.

Spice is now a blanket term that refers to a collection of herbs or plant material that have been sprayed with synthetic cannabinoids.

When Spice became illegal in the UK the compound was quickly followed by Black Mamba. Black Mamba is the brand name for the synthetic cannabinoid AM-2201.

According to user reports, the substance was much stronger than ‘skunk’, delivered more of a ‘rush’ and was likely to cause distortions in reality and adverse reactions.

Users were advised of the potency of the product and to use far less as they would do if using skunk. They were also made aware about the potential increased potency of the drug at the bottom of the bag where crystals had gathered.
In 2012, a UK based company sold a potent brand of synthetic cannabinoid smoking mixture called Annihilation. Annihilation was associated with a number of hospitalisations.

Annihilation contained the synthetic cannabinoids MAM-2201 and UR-144. Both of these compounds were banned by the amendment to the Misuse of Drugs Act introduced on February 26, 2013.

Oral, e-liquid and injectable synthetic cannabinoids formulations are also available. Batches of the same brand may possess highly variable concentrations or can be completely mislabelled. Adverse reactions from synthetic cannabinoids are numerous and have included agitation, anxiety and visual/auditory hallucinations, vomiting and seizures.

**MDAI**

MDAI first became available online in 2009 as a legal alternative to MDMA. ‘Sparkle’ and ‘Sparkle Gold’ are examples of branded packaging. MDAI is similar to MDMA but not as strong and with less stimulant effects on the body.

People taking it report a mild high, relaxation and increased appreciation of music. Side effects have included stomach cramps, short-term memory loss and problems sleeping.

**Benzofurans (Benzo Fury)**

Benzofurans have MDMA-like and stimulant effects on the body. 6-APB and 5-APB have been commonly used. 6-APB is an analogue of the Class A drug MDA and has similar effects to ecstasy.

Benzofurans include a group also known as the ‘fly’ drugs (for example, bromo-dragon fly, 2C-B-fly). These drugs are far more hallucinogenic with bromo-dragon fly being active at very low doses and implicated in a number of deaths.
Pipradrols and pipradrol

Pipradrols and pipradrol derivatives are a group of amphetamine-type substances structurally related to methamphetamine.

In recent years, 2-DPMP (desoxypipradrol, also known as 2-diphenylmethyipiperadine) and D2PM (diphenylprolinol) had appeared.

2-DPMP was first sold as ‘Ivory Wave’, but D2PM had since replaced 2-DPMP in Ivory Wave products. 2-DPMP and related compounds are Class B under the Misuse of Drugs Act.

Ethylphenidate

Ethylphenidate was one of the most commonly used stimulants on the NPS market in 2011. Ethylphenidate is closely related to methylphenidate (Ritalin).

It comes as a white powder that is usually snorted or swallowed (bombed). Effects include increased energy, alertness and rapid heart rate.

Snorting can cause a more intense rush although effects tend to last longer when the drug is used orally. Snorting can also cause damage to nasal mucus membranes.

MPA Methiopropamine (China White)

Methiopropamine, also known as MPA, is found in many branded products such as ‘China White’ and is an analogue of methamphetamine. It appeared on the NPS market in 2010.

Methiopropamine is a stimulant drug. People taking it can experience a mild high, sexual arousal and loss of appetite. Adverse effects have included chest pains, breathing problems and an urge to re-dose. It comes in a fine white powder that is usually snorted or swallowed (bombed).
1-Benzylpiperazine (BZP)

1-Benzylpiperazine (BZP) is a synthetic drug prepared from piperazine, a medicine that has been used to control intestinal roundworms.

Piperazine itself has no psychoactive properties, but BZP acts as an amphetamine-like drug and was sold online in the UK before mephedrone appeared. Effects include increased energy and alertness.

Etizolam

Etizolam is a strong benzodiazepine that has sedative effects and can cause long periods of sleep and drowsiness. It also slows down your heart rate and breathing. People taking it can feel calm and relaxed with reduced feelings of anxiety. Side effects include short-term memory loss, reduced cognitive ability and double vision.

Further research

As a rough guide to working with NPS, there are things that workers can do once you know either the street or chemical name of the substance:

1. Check the National Poisons Information Service (NPIS) for support in managing patients with acute recreational drug toxicity and to identify individual drug toxicity. http://www.npis.org/
2. Check Drugscope (DrugSearch Encyclopedia) http://drugscope.org.uk/drugsearch/
3. Search Wikipedia or TicTac to help identify chemistry and possible neurological actions
4. Search online discussion forums on legal highs or research chemicals. This will give you some information on experiences, potential side effects and any health problems being experienced
5. Go to Google Trends to identify how popular a new drug is online, type in your keyword (name of the chemical) and Google will give you search data on that drug
6. Go to YouTube for observable behaviours. Sometime users will post videos while intoxicated on the new drugs they are taking
7. Check Erowid https://www.erowid.org for general information on drugs and on users subjective experiences
9. Check Bluelight (US) http://www.bluelight.org/vb/content/ and Urban 75 (UK) http://www.urban75.com website boards for user generated content on NPS
10.2 Tailoring interventions

To have a deeper understanding of novel psychoactive substances and to tailor effective interventions, it is important to look beyond the brand names that are assigned to new drugs and identify the chemical and chemical families (such as phenethylamines and tryptamines) that they belong to.

The diagram above does not cover every psychoactive drug, substituted ring, functional group or chemical class. For example, the arylocyclohexylamines are missing (PCP, ketamine and methoxetamine), and the new benzodiazepines are not listed. There are also many more synthetic cannabinoids omitted, and within this group alone there are several additional chemical classes. Noting this, the chart still captures many of the NPS that were, or are, commonly used. More importantly, it demonstrates how novel psychoactive substances are closely related to traditional drugs such as amphetamine, MDMA or LSD.

Most stimulant and hallucinogenic drugs span the two chemical families known as phenethylamines and tryptamines. Mephedrone and the other cathinones are from the B-ketone functional group (circled in red), a substituted ring from the phenethylamine structure and they are closely related to amphetamine and MDMA.
The phenethylamine class of drugs are generally viewed as having stimulant properties and tryptamines are categorised as hallucinogens. However, hallucinogens span both chemical families, for example, DOM (a powerful synthetic hallucinogen), and mescaline (a natural one), are phenethylamines and not tryptamines.

There is further considerable overlap between the pharmacology of drugs between these two families. Amphetamine-like compounds affect certain serotonin receptors in the brain in the same way that LSD does (such as bromo-dragonfly, 25i-NBOMe or 2C-B-FLY) and hallucinogens in turn may increase adrenaline and have stimulant effects on a user (such as AMT).

The sheer number of psychoactive drugs and their effects can be initially daunting but despite this we can still divide NPS into the five following categories.

**Synthetic cannabinoids** - traded under such names as Spice, Clockwork Orange, Black Mamba, Cherry Bomb, Annihilation and Exodus Damnation. These chemicals are only similar to natural cannabis in the way they act on the brain.

**Stimulant-type drugs** - such as BZP, mephedrone, MPDV, NRG-1, Benzo Fury, MDAI, ethylphenidate and MPA. The effects of these drugs replicate those of amphetamine and MDMA.

**Hallucinogens** - hallucinogenic drugs can be roughly divided into tryptamines, phenethylamines and lysergamides (LSD-like structures) such as 25i-NBOMe, PRO-LAD and bromo-dragonfly. Dissociative drugs such as salvia, methoxetamine, ketamine and nitrous oxide work on different receptors in the brain and belong to different chemical classes.

**Opiates** - such as kratom, MPPP, synthetic morphine AH-79217, o-desmethyl tramadol, W 15 7 and W 19 are opioid agonists and with a few exceptions work on the brain in the same way as other opiates / opioids.

**Depressants** - these drugs are similar to benzodiazepines such as diazepam. Etizolam, flubromazolam, diclazepam, pyrazolam, nifoxipam, flubromzepam and clonazolam are all examples of new synthetic benzodiazepines.

When more information is gathered about the nature of the NPS in question then tailored interventions and harm reduction strategies can be developed. Many of the treatment tools can be used ‘across the board’, however, harm minimisation strategies may have to be tailored in certain cases. For example, some harm reduction advice for synthetic cannabinoids can be different than the ones given for natural cannabis (vaporising natural cannabis might be seen as a harm reduction strategy but this should not be advised for synthetic cannabinoids due to the potency of some of these chemicals).
10.3 Treatment response

The general response from drug services has been to provide brief interventions, advice and treatment that fit the main NPS groups. For instance, if someone is using predominantly stimulant psychoactive substances, the treatment approach will be similar to that for cocaine or amphetamine problems; if it is a synthetic cannabinoid, the approach will be similar to that for cannabis. Due to the extreme potency, toxic potential or unknown complexity of some NPS this approach should only be used as a starting point, as it is important to deal with the symptoms and presenting issues first.

**Synthetic cannabinoids**

Synthetic cannabinoids have had different reported effects on users. They can produce hallucinations, numbness, adrenaline rushes, induce fitting, respiratory failure and there have been reports of compulsive use and severe withdrawal symptoms. It is unknown whether some of these compounds are physically addictive, many of them have been deemed to have a psychological dependency potential.

Many synthetic cannabinoids are short acting and tolerance can build rapidly. They may also stop natural cannabis having an effect for a few days after use, possibly demonstrating the strong affinity these substance can have on the brain. They do not possess CBD (cannabidiol, a possible anti-psychotic chemical that is found in natural cannabis) and there have been reports from mental heath teams that some users are behaving more psychotically on these drugs.

With regards to treatment, an integrated practitioner response (between medical / pharmacological and psychosocial interventions) may be effective in dealing with the acute and chronic conditions that can be caused by synthetic cannabinoids.

There have also been reports that some users are feeling ‘wired’ and the drugs are having ‘stimulant-type’ effects on their body. This could be attributed to another chemical that they are unknowingly consuming or it might be the effects of a particular class of synthetic cannabinoid. There may be possible links to adrenaline and the fight or flight response that can be drawn out with users. Triggers, cravings and coping strategies could be explored and worked through in the same way as other stimulants, further research is needed in this area.

**Stimulant-type drugs**

Interventions and programmes for cocaine can be adapted and used for stimulant NPS (particularly the B-ketones, the functional group mephedrone and other cathinones belong to) and as such mephedrone has been covered in this manual.

The piperazines stimulate the central nervous system and have less empathic effects than MDMA. This family of drugs are closer to classic stimulants such as amphetamine and problems could be treated in the same way.
Adapted stimulant responses could also be explored for hallucinogens that stimulate the central nervous system (psychedelic stimulants such as AMT or 2C-B-FLY). In some respects hallucinations are themselves caused by a stimulation of the senses and many of the issues related to panic attacks and ‘flashbacks’ have links to adrenaline.

**Hallucinogens**

The use of LSD has not been associated with dependence or any recognised withdrawal syndrome. LSD does not appear to show classic patterns of tolerance but rather tachyphylaxis, this means it loses its desired effect if taken two days in a row.

DMT, ketamine and possibly methoxetamine appear to be an exception to this rule. Though these drugs are potent hallucinogens they have a brief duration of action and a brief duration of tachyphylaxis. This enables users to have the desired effects multiple times a day.

Ketamine has a psychological dependency potential and many other short-acting hallucinogens may also possess this quality. Ketamine has been more widely used than DMT or methoxetamine in the UK, it has caused serious damage to bladders and a number of deaths through accident. With long-term use of ketamine, hallucinations (the ‘k hole’) become harder to experience and the drug starts to affect the body as if it were a stimulant. Long-term use can lead to anxiety, agitation, panic attacks and users feeling ‘wired’. Many of the stimulant treatment tools in this handbook could possibly be adapted for ketamine in these cases, again further research is needed in this area.

**Opiates and benzodiazepines**

Currently the prevalence of new synthetic opiates are limited in the UK, however, the use of new benzodiazepines have reportedly increased over the past few years. Opiates and benzodiazepines already have an established treatment response and many of these drugs would fall into current clinical management.
11. References


6. NEPTUNE Project, Guidance on the Clinical Management of Acute and Chronic Harms of Club Drugs and Novel Psychoactive Substances, 2015,

7. UK Focal Point Report 2014

8. Not For Human Consumption, An updated and amended status report on new psychoactive substances (NPS) and ‘club drugs’ in the UK, Drugscope 2015


The information in this pack was taken from a variety of sources and written from a drug workers perspective. It is not meant to be a definitive document and the author would advise that information be constantly checked as it can become out of date very quickly.
12. Contact details

Please contact Tony D’Agostino on the following:

Website: www.tdconsultancy.org.uk
Email: tonydaguk@gmail.com

@tonydaguk
https://www.linkedin.com/company/td-consultancy
https://www.facebook.com/tdconsultancy
https://plus.google.com/+drugtraining-UK/