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Main principles of the italian position against drug use

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Preface

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Presidency of the Council of Ministers

According to the latest European data as well as to the epidemiological investigations carried out in our country, there has been a decrease in the substance use and the drug market is getting weaker and weaker.
"The battle can be won", we said a few years ago in our Annual Report to the Parliament. We were hopeful and confident that, insisting on prevention, treatment and recovery, and promoting specific enforcement actions, we would have been able to reverse a rising trend which lasted for many years. Now it is necessary to strengthen this strategy, and to further define its basic principles so that it will be even more clearer for all the people working at all levels in the field of addiction.
This publication explains in a short but clear way the principles of the Italian position in the fight against drugs.

Having well-defined and shared principles allows us to formulate and strengthen our strategy that, considering also the latest scientific evidences in the field of Neuroscience and of Education and Behavioural Sciences, will support the entire response system in order to work harmoniously both at national level and at European level. Today, therefore, it is necessary to underline, widen and update these principles, taking into consideration new problems and positive results that must be necessarily strengthened and considered as a starting point and not as an endpoint. This is important in order to be more effective in the fight against drugs, with a balanced approach focused on people and their health, their sociability and their spirituality. This approach necessarily excludes the legalization of drugs as a solution to the problem of drug use because, after a careful analysis and a comparison between various experts and important governmental administrations, this idea is considered as a mere and impracticable solution by a majority of States.

The future will be the one we will be able to build and it will definitely be better if we will promote all together early prevention of drug and alcohol abuse, supporting families, schools and youth organizations as well as promoting early intervention and recovery. The challenge to be accepted and pursued both now and in future is addressing the response systems towards recovery. This is the only way to restore dignity and a real life to our mission and especially to all those people unfortunately involved in the painful and destructive path of addiction.
Therefore, I hope that this contribution can be used to improve our actions, making them more appropriate and effective both for people and for the community.

Introduction

Main principles

This document focuses on the main principles underlying the present strategy against drugs concerning both drug demand and drug supply. It provides at the same time definitions and recommendations consistent with a person-centered approach and respectful of human rights (both for drug users and for non drug users in touch with them). These principles also include the possibility to live one's life completely free from addiction and from the negative effects caused by drugs on one's health and on public health .

Furthermore, this paper deals with the reasons why legalizing drugs is not the right solution to fight the spread and use of substances among the population, profits of criminal organizations and all illegal consequences related to use, production and trafficking of drugs.

A balanced, rational, ethic, sustainable and permanent approach

According to the United Nations, we believe that it is necessary to better define and to integrate models of actions in order to strengthen, improve and widen strategies and interventions in the framework of a rational balanced and science based approach that should even be ethic, sustainable and permanent at the same time. This approach must also enhance and support prevention, treatment, rehabilitation and recovery of drug users and it has to fight against illegal production and drug trafficking.

We do not consider legalizing drugs (including cannabis) as the main solution to solve the problem of drug use in the community. As a matter of fact, the scientific literature shows that an increased availability of drugs (due to weaker punishments and/or to lower prices) makes the use of drugs higher and higher among the population.

Using drugs is always dangerous and illegal.

We share many of the principles supported by various organizations in these years, including the *Report of the Global Commission on Drug Policy*, aimed at improving the effectiveness of interventions against drugs. Nevertheless we think that these results should not be necessarily achieved legalizing drugs. These principles can be more effectively attained while maintaining the illegality of drugs, through interventions and systems oriented to selective prevention and early and free treatments, and promoting the recovery of drug addicts and the prevention of related diseases.

Giovanni Serpelloni
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Presidency of the Council of Ministers

Main principles of the Italian position against drug use

1. Prevention as a successful strategy.

Permanent prevention

Prevention initiatives, especially those targeting the younger generations and their parents, should always be kept in action in order to reduce drug use, alcohol abuse and the development of other forms of addictions. [1] [2]

Selective prevention

Selective prevention targeting particularly vulnerable subjects, while at the same time actively providing support for parents and teachers, has proven to be a particularly effective strategy which can easily be maintained[3]. Prevention must begin early, when children reach school age, conveyed as part of the knowledge imparted to them about healthy lifestyles and the rules for living them in order to avoid all drugs use, alcohol use, tobacco and non- prescribed medicine use.

Early detection for early intervention

At the same time, early detection initiatives focusing on adolescents and aimed at promoting an early intervention comprise a successful and feasible strategy for reducing the number of vulnerable subjects who take up occasional or habitual drug use, paths which may evolve into addictions. [4] [5] [6] [7]

Essential actions

Prevention actions must be considered absolutely necessary, also in light of the fact that drugs, especially when taken at a young age, can seriously interfere with the physiological processes of cerebral maturation (which reach completion around 21 years of age), and in particular with the processes of myelination, synaptogenesis and “pruning” (the cerebral process whereby synapses are activated and selected during growth), thus compromising the development of important neurocognitive functions such as memorisation, motivation, attention and, consequently, learning capacity, decision making and risk assessment.[8] [9] [10] [11] [12] [13] [14]

Protection of the cerebral maturation

[1] Serpelloni G., Bonci A., Rimondo C., Cocaina e minori. Linee di indirizzo per le attività di prevenzione e l'identificazione precoce dell'uso di sostanze, Dipartimento per le Politiche Antidroga – PCM, Giugno 2009. Scaricabile da www.dronet.org.
[2] National Institute on Drug Abuse (NIDA), Preventing Drug use among children and adolescents. A research based guide for parents, educators and community leaders, U.S. Department of health and human services, Bethesda, 2003. Versione Italiana scaricabile da www.dronet.org.
[3] Serpelloni G., Gerra G., Vulnerabilità all'addiction. Prevenzione Primaria: nuovi strumenti agli operatori sia nell'ambito delle conoscenze che delle metodologie, 2002, Regione Veneto. Scaricabile da www.dronet.org.
[4] Cfr. nota 1.
[5] CDC, Learn the Signs, Act Early Campaign, Indian J. Med. Sci., vol. 59(2), 82-3, Febbraio 2005.
[6] EMCDDA (2008), Prevention of substance abuse, EMCDDA Insights, Lisbona, 2008. Scaricabile da: http://www.emcdda.europa.eu/publications.
[7] EMCDDA, Preventing later substance use disorders in at-risk children and adolescents. A review of the theory and evidence base of indicated prevention, Thematic papers, Lisbona, 2009.
[8] Asato M.R., Terwilliger R., Woo J, Luna B. White Matter Development in Adolescence: A DTI Study. Cereb Cortex.2010 Jan 5.

Evidence based

It is therefore necessary to promote educational programmes founded on evidence-based information and on initiatives which focus on the development and reinforcement of social and life skills.

Environmental prevention

In addition to this, clear and consistent environmental prevention campaigns against drug use, alcohol abuse and tobacco use have proven to be important to maintain a high level of social disapproval of substance use and a high perception of the risk and harm it entails, even when use is occasional (these have been shown to be important factors for reducing use levels).[15]

2. Vulnerability to addiction.

Vulnerability and an increased risk of evolutive paths

The fact that, within the population, there are groups of people who are particularly vulnerable to developing addictions if they come into contact with drugs must be recognised and taken into consideration. People can present different levels of risk based on individual neuropsychobiological characteristics and on the presence of differing social or environmental factors which shield them from or increase their risk.

The principle risk factors capable of increasing addiction vulnerability are:

- some specific genetic predispositions
- a "novelty-seeking" personality profile
- the presence of behavioural disorders and attention deficit
- childhood abuse, trauma and abandonment
- a total lack or deficit of sufficient parental attention during childhood
- a deficit of sufficient parental "monitoring or tutoring" during adolescence
- a lack or deficit of sufficient rules imparted during upbringing
- the early use of alcohol and tobacco
- low awareness of risk
- low level of social disapproval,[16]
- an high availability of drugs at local level.

Such vulnerable persons who use drugs, even occasionally, are at a much higher risk of taking a path which will evolve into addiction, but being vulnerable does not mean that one is "predestined". This higher state of risk can be reduced and avoided through family, school, social and environmental actions and campaigns capable of opposing the evolution of a negative prognosis and changing positively these persons' fates.

3. Drug addiction is a preventable, treatable and healable disease.

Drug addiction is a disease

Our Government's official position in terms of anti-drug policy, as expressed clearly in the National Action Plan on Drugs approved by the Council of Ministers in October of 2010, recognises, first and foremost, that "drug addiction is a preventable, treatable and curable disease which is often

[9] White T., Su S., Schmidt M., Kao C.Y., Sapiro G. The development of gyrification in childhood and adolescence. Brain Cogn. 2010 Feb; 72(1): 36-45. Epub 2009 Nov 25.
[10] Serpelloni G., Diana M., Gomma M., Rimondo C., Cannabis e danni alla salute. Aspetti tossicologici, neuropsichici, medici, sociali e linee di indirizzo per la prevenzione e il trattamento, Dipartimento per le Politiche Antidroga – PCM, Gennaio 2011. Scaricabile da www.dronet.org.
[11] Bussi M., Trimarchi M., Serpelloni G., Rimondo C., Uso di cocaina e lesioni distruttive facciali: linee di indirizzo per gli specialisti otorinolaringoiatri, Dipartimento per le Politiche antidroga – PCM, Maggio 2011. Scaricabile da www.dronet.org.
[12] Serpelloni G., Macchia T., Gerra G., COCAINA, Manuale di aggiornamento tecnico scientifico, progetto START, Ministero della Sanità, 2006. Scaricabile www.dronet.org.
[13] http://conseguenzemediche.dronet.org/.
[14] http://www.drugfreedu.org/.
[15] Keyes K.M., Schulenberg J.E., O'Malley P.M., Johnston L.D., Bachman J.G., Li G., Hasin D., The social norms of birth cohorts and adolescent marijuana use in the United States, 1976-2007. Addiction. 2011 May 6.
[16] Cfr. nota 1.

chronic and where relapse is common.[17] [18]

Brain disease with physical, psychological and social consequences

Drug addiction is a complex and severely disabling brain disease which is linked to behavioural disorders, risks of contracting infectious diseases and psychiatric risks, all of which have grave social consequences for the individual[19].

Consequence of an initially voluntary behavior of using drugs

Drug addiction is a disease which is a consequence of an initially voluntary behaviour of using drugs which puts a persons' health at serious risk.

One becomes affected by the disease due to the use of narcotic substances which an individual initially decides to use voluntarily and which create, over the course of time, a state of neuropsychobiological alteration and pathological suffering capable of reducing a person's ability to independently evaluate reality or decisions to be taken, thus impacting the subject's ability to act of his or her own free will, this due to the presence of compulsive behaviour characterised by a desire-seek-use pattern of drug use.

Inability to consistently abstain

Addiction is characterized by inability (caused by craving) to consistently abstain, impairment in behavioural control, diminished recognition of significant problems with one's behaviours and interpersonal relationships, and a dysfunctional emotional response.

Implication of neurobiological structures

From a neurobiological point of view, addiction affects interactions within reward structures of the brain, motivation, memory and related circuitry. Dysfunction in these circuits leads to characteristic biological, psychological, social and spiritual manifestations.

Relapse

Like other chronic diseases, addiction often involves cycles of relapse and remission. Without treatment or engagement in recovery activities, addiction is progressive and can result in disability or premature death.[20]

Disability or premature death

Therefore, in our country, all policies and strategies are geared towards, firstly, recognition of the fact that the use of narcotic drugs, even if it is occasional, is a dangerous behaviour which entails serious health risks and, secondly, that drug addiction is a condition which, in addition to being a social and safety issue, is also a serious problem for public health, and not only the health of drug addicts, but also of third parties who may be harmed by the formers' high-risk behaviours when drug addicts, for instance, drive cars or perform jobs which can put third parties at risk.

Social and public health problems

Systems oriented to prevention, treatment and recovery

Recognising these concepts means that all of the systems which provide assistance and treatment must be oriented to refer to persons who are occasional or periodic drug users (but they are not drug addicted) as persons who engage in high-risk behaviours which endanger health and they need to be treated with an early intervention in order to prevent addiction and to stop drug use. Those persons with drug addictions must be treated as people who are ill and in need of medical and psychological treatment, as well as easily-accessible and easy-to-maintain support systems for addictions and the diseases related to them. These systems must focus not only on treatment, but also on the rehabilitation and cure of the individual, and not only the "social control" of the disease.

4. The need for an integrated approach towards drugs, alcohol, tobacco, the misuse of prescription medications and compulsive behaviours (e.g. pathological gambling).

An integrated approach

The need to integrate policies and campaigns (as well as facilities) dealing with issues deriving from the use of alcohol, drugs, smoking, the misuse of prescription medications and pathological compulsive behaviours, such as "pathological gambling", is ever more widely recognised. A global and integrated approach towards all these forms of addiction requires new strategy and organisation oriented toward dealing both with such behaviours (in term of prevention, treatment

[17] Dipartimento per le Politiche Antidroga, Presidenza del Consiglio dei Ministri, Piano di Azione Nazionale (PAN) sulle Droghe, 2010-2013. Scaricabile da www.politicheantidroga.it e www.dronet.org .

[18] Serpelloni G., Frighetto R., Dalla Chiara R., Linee di indirizzo e modello teorico-pratico per la riabilitazione e il reinserimento sociale e lavorativo della persona tossicodipendente. Manuale RELI, Dipartimento per le Politiche Antidroga – PCM, 2011, *in press.*

[19] National Institute of Drug Abuse, monograph "Drugs, Brains, and Behavior - The Science of Addiction", Bethesda, 2007.

[20] American Society of Addiction Medicine, Public Policy Statement: definition of addiction, ASAM, August 2011.

and rehabilitation) as well as with all the various forms of addiction, which often progress as simultaneous evolutions.[21] That's why it is necessary to have specialised organisations in the field of addiction, such as Addiction Departments (which are different from psychiatry organizations)in order to deal with both disease.

5. Drug use is an avoidable and preventable behaviour, which poses high risks for health, and which should be the object of social disapproval and cause for sanction.

Use (even occasional) of drugs: high-risk behavior for physical, mental and social health of the individual, avoidable and preventable

The use of narcotic drugs, even when occasional, and especially among young people, must be considered to be, from a health perspective, "an avoidable and preventable high-risk behaviour for individuals' physical, mental and social health", as ever-more numerous scientific evidence, including from the field of the neurosciences, attests. It is a behaviour which should therefore not be adopted at any cost. For this reason, prevention campaigns must be created and constantly maintained, and these must focus, first and foremost, on creating a high level of awareness of the risks drugs entail and on proper conduct to maintain with regard to them. Drug use cannot be viewed by society as a positive or acceptable lifestyle, insofar as it is dangerous both to the drug user and to others.

It is important, furthermore, to foster in young people the development of a sense of responsibility for their own health and the health of others. It is, however, necessary to simultaneously maintain active social and legal deterrents to drug use as well as positive cultural movements against drugs. In this way, a high level of social disapproval for drug use is created and maintained [22] [23].

Deterrent and social disapproval of use

This important element is capable of producing a decrease in drug use, especially with regard to the use of nicotine, marijuana and cocaine which, in vulnerable adolescents, have been shown to be "gateway" drugs, capable of setting individuals on paths which evolve into addictions, as has been scientifically proven by thirty-year studies.[24]

6. The right to free treatment for drug addicts.

No to the discrimination. Drug addicts = people in need of care

Drug addicts, as such, are not and must not be discriminated against, marginalised, stigmatised or treated as criminals, but, rather, as sick people in need of treatment, to whom the Italian State and the Regions guarantee, free of charge, a wide range of treatment offerings both outside and inside of prison, in cases where these persons find themselves in prison for having committed crimes (drug use is not a crime punishable by imprisonment in our country). Drug addicts in prison are, in any case, guaranteed suitable healthcare treatment.

Integrated pharmacological treatment

No heroin use

Pharmacological treatment programmes using substitution drugs (not including heroin) are one of the treatments provided, and are always offered in combination with psychological and social support [25]. Controlled heroin administration is not included among treatments offered as a consequence of low mid- to long-term programme adherence observed for this treatment. This low adherence is the consequence of the need to take the drug intravenously a full 4 times per day, in combination with the fact that patients always had to do this in a controlled healthcare setting, where they then had to remain for 60 minutes of evaluation time following injection, with all the attendant effort required of patients in terms of time/hours devoted (from 5 to 7 hours per day, including commuting time). Moreover, in addition, heroin is not used because of the high risk of

[21] Dipartimento per le Politiche Antidroga, Presidenza del Consiglio dei Ministri, Dipartimenti delle Dipendenze: linee di indirizzo e orientamenti organizzativi, *in press*.
[22] Cfr. nota 1.
[23] Weeks M.R. et al., Changing drug users' risk environments: peer health advocates as multi-level community change agents, American Journal of Community psychology, 43 (3-4): 300-44, Giugno 2009.
[24] Cfr. nota 15.
[25] Serpelloni G., Pirastu R., Brignoli O., Medicina delle Tossicodipendenze. Manuale specifico per i Medici di Medicina Generale sul tema generale della tossicodipendenza, Ministero della Sanità 1996. Scaricabile da www.dronet.org.

overdose it presents in comparison with methadone, and as a result of the presence of alternative drugs (methadone and buprenorphine) which have been shown to be safer, more effective and easier to manage.[26] [27] [28] [29] [30] [31] [32]

Treatment in prison

Furthermore, Italian law expressly states that drug addicts imprisoned for having committed crimes have a demandable right and can and must be treated (upon voluntary adherence to such treatment and if certain clinical or legal requisites under law are present. Furthermore that they can leave prison to be treated within external social-healthcare facilities as an alternative to imprisonment.

7. Re-evaluating the application of "compulsory" treatments in the presence of serious forms of addiction involving violence towards third parties.

Addiction and violence towards parents and children: a solution is required

Addiction, psychiatric comorbidity and violence

In the case of some drug addicts, especially those who use stimulants and/or hallucinogens or in the case of strong opiate-withdrawal symptoms in patients with comorbid psychiatric conditions, the disease is accompanied by serious, systematic and repeated outbursts of violence towards themselves and towards those who live with them (parents, spouses, children). This problem has often been seen over the years within nuclear family groups and, in the cases observed, it has often been a problem which has continued over long periods of time, causing great suffering to vulnerable persons such as children, elderly parents or relatives unable to react or defend themselves adequately. Some of these situations have ended tragically. These episodes are often associated with, and aggravated by, the coexistence of the addiction with psychiatric disorders, which is not an infrequent phenomenon among these individuals.

Support patients with temporary treatments regulated by law

Assessment of temporary treatments on the basis of evidence and ethical based criteria

In these cases, where the addiction presents an extremely violent, destructive and dangerous component, it is necessary to reflect and re-evaluate the possibility and the opportunity to temporarily introduce adequate forms of protection for these family groups and "compulsory" healthcare treatments or, in other words, treatments which offer the possibility, in full respect of the human rights of the individual, to be prescribed and carried out in specific, specialised residential types of environments for drug addicts (as distinct from psychiatric wards). These treatments would have to be upheld by acts capable of temporarily imposing custodial measures and treatments to reduce these risks to the addicts themselves and to their nuclear family groups. It is clear that solutions of this sort must be studied in-depth, considering all of their aspects, both in terms of treatment effectiveness and their ability to effectively reduce the problem of violence towards the subjects' family members, but also, at the same time, in terms of the fact that they would have to respect bioethical principles. In Italy, there is not only a need to test such solutions, but conditions for doing so are also particularly favourable, considering the strong presence of highly accredited residential facilities, some of which are highly specialised is the management of comorbid psychiatric disorders and drug addictions. These topics must, however, be approached with extreme caution. The aim of all this would be to guarantee patients suitable assistance in order to overcome a disease which is potentially harmful, not only from a healthcare standpoint but

[26] Dipartimento per le Politiche Antidroga, Presidenza del Consiglio dei Ministri, Linee guida per la prevenzione delle patologie correlate all'uso di sostanze stupefacenti, Dipartimento per le Politiche Antidroga – PCM, 2009. Scaricabile da www.dronet.org.
[27] Ridge G., Gossop M., Lintzeris N., Witton J., Strang J., Factors associated with the prescribing of buprenorphine or methadone for treatment of opiate dependence, J Subst Abuse Treat. 2009 Jul; vol. 37(1) pp. 95-100.
[28] Senbanjo R., Wolff K., Marshall E.J., Strang J., Persistence of heroin use despite methadone treatment: poor coping self-efficacy predicts continued heroin use,Drug Alcohol Rev. 2009 Nov; vol. 28(6) pp. 608-15.
[29] Strang J., Hall W., Hickman M., Bird S.M., Impact of supervision of methadone consumption on deaths related to methadone overdose (1993-2008): analyses using OD4 index in England and Scotland, BMJ. 2010; vol. 341 pp. c4851.
[30] Senbanjo R., Hunt N., Strang J., Cessation of groin injecting behaviour among patients on oral opioid substitution treatment, Addiction. 2011 Feb; vol. 106(2) pp. 376-82.
[31] Cornish R., Macleod J., Strang J., Vickerman P., Hickman M., Risk of death during and after opiate substitution treatment in primary care: prospective observational study in UK General Practice Research Database, BMJ. 2010; vol. 341 pp. c5475.
[32] Day E., Strang J., Outpatient versus inpatient opioid detoxification: a randomized controlled trial, J Subst Abuse Treat. 2011 Jan; vol. 40(1) pp. 56-66.

also from a social standpoint, and not only to the individual in question but also to third parties. Just as in some borderline conditions in the sphere of psychiatric disorders, for which it is deemed suitable to apply, on a clearly temporary basis, obligatory healthcare treatments, it would be worthwhile to reflect, in this case as well, on the opportunity to introduce similar, temporary forms of protection for those persons who present these types of extreme conditions in the field of drug addiction. (Such reflection would include an assessment of the effectiveness of such treatments on the course of the natural evolution of the illness, as well as on the safety of such measures.

8. No to the marginalisation, criminalisation and social stigmatisation of drug addicts .

No to the marginalisation and criminalisation of drug addicts

The human rights of these individuals must therefore be respected in the same way the rights of any ill citizen would be respected. Any form of marginalisation of drug addicted persons must therefore be avoided, as must their criminalisation (simply for the fact of being drug users) and, even more so, their stigmatisation, in view of the fact that drug addiction is a real disease. Italy does not therefore subscribe to the use of practices such as forced detention or physical or psychological abuse inflicted on drug addicted persons in the interests of a supposed therapeutic or rehabilitative intervention. Apart from cases of point g, treatment must be always carried out in respect of the rights of the individual, with his or her knowing and willing participation, in full respect of the right to self-determination.[33] [34] [35]

9. Drug use is not a demandable individual right.

Drug use cannot be considered to fall under the category of persons' demandable individual rights, specifically because of the negative consequences this behaviour can have not only on one's own health but on the rights and the safety of others. Drug use is thus one of those socially disapproved behaviours which poses high risks for one's own health and the health of others, and which is therefore unacceptable and punishable under law.
Individual drug use and its consequences, both to the user as well as to third parties, are thus the direct responsibility of the individual drug user who, if he or she is addicted to drugs, is, however, guaranteed the right to treatment. On the other hand, there exists a demandable individual right of citizens who are not drug users concerning the need to be protected from the spread and the dealing of narcotic drugs, and from the behaviour of those persons who use drugs, putting third parties' health and safety at risk. .

10. Initiatives and facilities focusing on the prevention of drug-related diseases and the rehabilitation of drug-addicted persons.

Prevention of drug-related diseases: a priority action

It is also believed that all treatments must be strongly focused on the complete rehabilitation and autonomisation of persons receiving these treatments, and that said treatments must always be combined with prevention of drug-related diseases such as HIV, the hepatides and TBC, as well as overdose prevention. These actions must be seen as high-priority, but as complementary and not as alternatives to addiction treatment, necessary actions on the part of the healthcare systems, actions which must be undertaken in order to safeguard the health not only of drug-addicted persons, but of the entire community. "Harm reduction" policies and initiatives, if used alone and

[33] Cfr. nota 17.
[34] Memorandum di intenti fra Repubblica Italiana e Stati Uniti d'America nell'area della ricerca, dei servizi e delle strategie politiche per la riduzione della domanda di droga, 11 luglio 2011. Scaricabile da www.politicheantidroga.it e www.dronet.org.
[35] Cfr nota 18.

outside of a healthcare context focusing on treatment, rehabilitation and reintegration of these individuals prove, in the long-term, to be ruinous, expensive, and of little preventative value, in addition to the fact that they can contribute to transforming the state of drug addiction into a chronic one. Furthermore, pharmacological treatments cannot be seen as mere risk- and harm-reduction actions, but as true instruments for treatment and rehabilitation, whose aim is to achieve, within a timeframe which differs from person to person based on individual patient characteristics, an integrated addiction treatment. It clearly must be pointed out that the real measures which have been shown to be truly effective in the mid- and long-term for the reduction of the risk of infectious diseases (HIV, the Hepatides, TBC, etc.) and of overdose are addiction therapies and antiretroviral therapies, which must therefore be offered as early as possible and free of charge. This is in addition to the need to promote active and early outreach for persons who use drugs.[36] [37] [38]

11. Treatment initiatives and facilities focusing on the complete recovery of drug-addicted persons.

The recovery is possible

The recovery of persons with problems deriving from an addiction to drugs or alcohol is possible, and it is also a sustainable process of change through which an individual can achieve total abstinence from these substances, improved health, psychosocial wellbeing and a good quality of life.

Treatments must be focused on complete recovery

All addiction treatments, for both drugs and alcohol (and, consequently, the processes of assistance employed for this purpose) must be focused on and must aim, from the start, towards complete recovery and healing from this disease. This result is normally achieved over a mid- to long-term period, when the individual reaches and is able to maintain his or her state of sobriety and stay free of drugs and, at the same time, achieve rehabilitation and social and work reintegration, reinserting himself or herself into society and into his or her family context, thus permitting and assisting the person in the building and maintaining of a dignified, autonomous and satisfying life far from drugs.

Recovery is the result of incremental and indispensable processes

Recovery of drug-addicted persons, when they are healed of the disease which is drug addiction, is the result of incremental, indispensable treatment and rehabilitation processes. It is not only a question of re-establishing a condition of good health, but also of promoting a new, positive identity, establishing meaningful relationships and taking on a significant role within one's family, a new peer group and community. Recovery and healing are helped along not only by treatment, but also by positive relationships and social environments which create incentive and increase one's hope for improving one's condition, creating a state conducive to personal empowerment and permitting one to make informed choices and take the opportunities that will lead to a free, healthy, balanced and socially integrated life. All of this must support the full expression of the individual potential of drug-addicted persons who, through this healing process can, and do, become, to all effects and purposes, active and productive members of the community.

Focusing on social relationships

12. Choices based on scientific and ethical criteria.

Evidence based approach balanced on ethical criteria

It is essential to base choices regarding initiatives to be taken, action planning and of prevention and assistance systems to be employed in the field of drugs, on scientific evidence and on their safety, effectiveness and sustainability. It is, however, equally important to integrate and balance these choices using ethical criteria and criteria of social acceptability in the context to which the

[36] Dipartimento per le Politiche Antidroga e Ministero della Salute, Linee di indirizzo. Screening e diagnosi precoce delle principali patologie infettive correlate all'uso di sostanze stupefacenti, Gennaio 2011. Scaricabile da www.dronet.org.
[37] Serpelloni G., HIV/AIDS e droga: Manuale per operatori di prevenzione, 1998. Scaricabile da www.dronet.org.
[38] Serpelloni G., Simeoni E., Contact-tracing & Partner notification, progetto della Comissione Europea, 2000. Scaricabile da www.dronet.org.

subject belongs.[39]

Evidence-based approaches, just like economic cost-benefit and cost-effectiveness analyses, are alone not enough to justify the strategy and policy choices of health planning for prevention, treatment and rehabilitation from diseases such as drug addictions. These choices must be based not only on scientific evidence, but also on ethical criteria, or, rather, on the need to ensure the complete respect of the principles of social solidarity, legality and the preservation of the human right to proper treatment and, to the highest possible degree, a dignified, socially integrated life, free from suffering. Furthermore, these choices much take into account the government's obligation to safeguard and nurture the health and physical, psychological and social wholeness of individuals, and especially of the ill, thus fostering the individual's overall wellbeing

If these choices are based solely upon evidence-based criteria, they can lead to clinical solutions chosen based on economic priorities, market interests or on the mere social control of weaker population groups. These choices could therefore prove to violate the rights of the ill, and their right to have access to real and appropriate treatment that aims to resolve their problem and to social support oriented towards recovery and healing, at the same time discriminating against them and giving rise to socially and ethically unacceptable situations such as rendering the condition chronic by transforming it into a "quiescent" condition of addiction, as opposed to embarking individuals upon a path to rehabilitation which, although initially more costly and demanding, aims towards complete recovery. Economic commitments of this sort should not be considered costs so much as "investments", which the State makes in its own citizens and in their potential, with the aim of cutting the real future costs of assisting these persons throughout the entire course of their lives.

Costs or "investments"?

It cannot, therefore, be only evidence-based criteria which guides choices, just as it cannot be only economic-financial criteria, since the highest-priority human right which must be respected in the case of persons suffering from addictions, just as in the case of all ill persons, is the right to timely treatment of the best quality, in order to recover the highest possible level of health, prevent and avoid addiction-related diseases, and be able to completely reintegrate into the community with total autonomy and dignity.[40] [41]

Likewise, the highest-priority right of the public, and especially of the young, is to be safeguarded from the offer of drugs, both through prevention actions as well as through actions which fight the trafficking and dealing of drugs.

The right to be safeguarded from the offer of drugs

No option which allows for the possibility (regulated or no) of an increase in the availability of drugs (and which therefore has the potential to increase the number of users and of persons whose use may evolve into addiction) can be ethically or socially acceptable, even in the presence of scientific evidence which prove that such an option would decrease social and health costs.

Therefore, the costs/investments of prevention and the costs of the fight against drugs must be seen as non-deferrable and in no way expendable.

Cost of prevention: non-deferrable

13. Drug use is a public health problem.

Drug use generates danger for and is harmful to, both directly and indirect, the health of the community as a whole. The presence of infectious diseases, psychological and psychiatric conditions and risks to psychological and physical integrity deriving from those who drive or

Drug use and public safety

[39] National Institute on Drug Abuse (NIDA), Preventing Drug use among children and adolescents. A research based guide for parents, educators and community leaders, U.S. Department of health and human services, 2003. Versione Italiana scaricabile da www.dronet.org.
[40] Cfr. nota 34.
[41] Cfr. nota 18.

engage in other professional activities while under the influence of drugs [42] [43] [44] [45] [46] [47] [48] [49] [50] render this condition a significant public health problem, and thus deserving of specific, structured and permanent organised public programmes and health facilities to deal with this issue in a coordinated manner on both regional and national levels.

14. Drug use is also a public safety problem.

Public safety at risk

At the same time, illegal actions such as the production, sale and dealing of drugs, are a significant public safety issue affecting the social and economic development of the country. It is an issue which must be dealt with using concrete and permanent solutions in terms of prevention and of the fight against drugs without, however, criminalising drug-addicted persons for their use of drugs (as is already specified under Italian law in this field), since they are suffering from a disease. Nonetheless, there must be a simultaneous no-tolerance attitude towards drug dealing, trafficking, illicit production and the domestic cultivation of cannabis.

15. Those who use and purchase drugs must be fully aware that they are financing criminal organisations and terrorism.

Financing criminal organisations

Those who purchase drugs, either for occasional use or because they suffer from an addiction, must be made strongly aware of the fact that they are, in this way, providing direct financial support to criminal organisations and to terrorism. These organisations' revenues are generated by single purchases on the part of individuals, and thus are the individual responsibility of the buyer. There is no excuse, not even for those who suffer from addictions, considering that, at least in this country, there is the possibility to (as opposed to using drugs) access suitable treatments and assistance, quickly and free of charge. Even though drug addiction is considered to be a disease and we cannot share the opinion that this pathological state could be termed a "moral problem", it is nonetheless held that the specific act of giving money to a dealer is, above all, morally unacceptable and worthy of social disapproval, even if it is comprehensible in the light of the pathological condition of those who do so. Especially, therefore, for those who do not suffer from an addiction, and who therefore do not have a condition which impels them through psychological and physical necessity to purchase drugs, this concept is particularly true, and should always be well-represented and conveyed.

16. To consider the "overall potential for harm" (and not only acute poisoning) of each single type of drug and especially of cannabis, in order to define anti-drug strategies and policies.

All drugs are toxic

All drugs must be considered potentially harmful to the physical, psychological and social health of the individual, even if used only occasionally [51] [52] [53]. It is futile and harmful to attempt to rank the

[42] Serpelloni G., Bricolo F., Gomma M., Elementi di Neuroscienze e Dipendenze, 2° edizione. Manuale per operatori dei Dipartimenti delle Dipendenze, Dipartimento per le Politiche antidroga – PCM, Giugno 2010. Scaricabile da www.dronet.org.
[43] Cfr. nota 8.
[44] Cfr. nota 9.
[45] Cfr. nota 10.
[46] Cfr. nota 11.
[47] Cfr. nota 12.
[48] Cfr. nota 13.
[49] Cfr nota 14.
[50] http://www.nida.nih.gov/drugpages.
[51] Cfr. nota 1.

harm caused by different types of drugs, with the aim of justifying the legalisation or liberalisation of some of these (e.g. cannabis), while ignoring the potential for the harmful evolution of such use in vulnerable subjects who become sensitised to the occasional use of these drugs, which are instrumentally and erroneously labelled "light".[54] Therefore, in order to organise policies and initiatives to reduce drug use, an assessment of the overall potential harm of drug use must take into account not only the toxicological characteristics of a given drug, but also other important factors which can potentially cause vulnerable persons to embark on paths which can evolve in harmful directions, cause differences in the way those paths unfold and render them more dangerous. These factors are: the characteristics which determine the vulnerability of the drug user (individual neuropsychobiological factors), the social environment in which drug use occurs (environmental vulnerability factors), the presence or absence of factors which act as safeguards (family, school, emotional ties, etc.) Indeed, these factors have the ability to influence whether or not the use evolves in a more or less harmful fashion, leading to forms of addiction or to the use of highly addictive drugs and the direct risk of acute drug-related mortality.

At risk and vulnerable people

Another important observation is the fact that, in addition to this, as part of an assessment of the overall potential for harm, another factor which must be considered is the ease with which drugs can be accessed, the high number of users present in the community and, most of all, the low perception of the risk and harm deriving from the use of a given drug among potential users (especially adolescents)[55] [56].

Based on these considerations, cannabis and its derivatives, precisely because of their characteristics and, in particular, because of the low perception of risk associated with their use among the young and the consequent ease of use, cannot therefore be considered drugs which cause low levels of harm to society and health. It is for these reasons which all proposals for their legalisation, often sustained by flawed motivations based on an erroneous perception of their low level of harmfulness and dangerousness, are rejected, as such proposals do not take into account the potential for evolution of use habits, nor of deaths in connection with accidents caused by its use. Indeed, the harm to society and health which the use of this drug causes should therefore be assessed not only based upon its toxicological characteristics, but always from the standpoint of the overall harm it causes, and keeping in mind the vulnerable individuals present in the community.

17. A well-balanced policy: prevention, treatment, rehabilitation, sanctions for use, and the fight against and penalisation of trafficking and dealing.

A well-balanced policy

Policy regarding drug use is based on recognising the need for drug use to remain an illegitimate action subject to administrative sanctions under law. A global approach must necessarily strike a balance between actions in the sphere of prevention, treatment and rehabilitation and actions concerning sanctions on the use of drugs and suppressing and fighting the trafficking and dealing of drugs, using a system based, overall, on individuals' healthcare-related right, especially if these individuals are minors and vulnerable, to be safeguarded from the offer of drugs and to receive early treatment if they are drug addicts, but treatment oriented towards complete rehabilitation and social reintegration. It is therefore the State's obligation to ensure, through on-going actions in the sphere of the fight against drugs, that criminal organisations be constantly prosecuted throughout the phases of production, trafficking and dealing.

[52] Cfr. nota 10.
[53] Cfr. nota 11.
[54] Cfr. nota 10.
[55] Dipartimento per le Politiche Antidroga, Presidenza del Consiglio dei Ministri, Relazione annuale al Parlamento sull'uso di sostanze stupefacenti e sulle tossicodipendenze in Italia, Roma, 2011. Scaricabile da www.politicheantidroga.it e www.dronet.org.
[56] EMCDDA, Annual report on the state of the drugs problem in Europe, Lisbona, Novembre 2010. Scaricabile da: http://www.emcdda.europa.eu/publications/annual-report/2010.

18. Suppressing trafficking and dealing in order to undermine the power of organised crime: a necessary action which will show results in the mid- and long-term.

Fighting against trafficking and small-scale dealing

Constantly keeping pressure high in the fight against organised crime and its activities, both regarding trafficking and small-scale dealing, has proven to be an important and necessary action in order to keep these organisations from developing and putting down even deeper roots in the social fabric, and to safeguard the public from these dangers. In this context of balanced action, policies for suppressing criminal organisations, including growers, couriers and small-scale dealers, are therefore a necessary action, and do not in any way act as an obstacle to public health measures in the sphere of addictions and HIV or hepatides infections.

Fighting illegal immigration while promoting immigrants inclusion

To this end, fighting illegal immigration and simultaneously launching strong integration policies focusing on social and work inclusion for immigrants are also fundamental for the prevention of organised crime connected to drug trafficking and dealing. It is advisable that special, on-going attention be given to the new Internet drug market and the new on-line pharmacies which must, if action is to be truly effective, be fought intensely, with new electronic forms of action as well, which have not, to date, been well- identified, as a result of the objective difficulty of acting on a worldwide, and not only national, level, providing support for and improving international cooperation between Law Enforcement Agencies[57].

Fight against drugs on the web: a worldwide action

Finalizing the prevention of seized Mafia funds

It is particularly important to develop strategies and to facilitate procedures using seized Mafia funds in order to support prevention activities. All these enormous funds should be easily used by all the organisations involved in the field of addiction and recovery.

Fighting money laundering

Finally, it will be strategically important to strengthen all the activities aimed at fighting against money laundering, also considering that all these actions, in order to be effective, must be implemented by all Member States by common consent. In fact, criminal organisations and their illegal business have become cross-border realities and they go beyond national entities

19. The need to constantly monitor and assess results and costs.

Constantly monitoring of results (outcome)

All strategies and initiatives must be assessed in terms of their safety, effectiveness (outcome) and economic and financial sustainability. Healthcare and government organisations (national and regional) must be equipped with systems which are able to constantly assess their results, in terms of outcomes achieved, and costs sustained. This assessment must be the criterion on which funding for proposed initiatives and projects is based. In addition, sharing information about outcomes achieved and being able to compare practices in order to improve response systems will improve the overall effectiveness of all initiatives [58] [59].

Funding criteria

Epidemiological surveillance of drug use trends

It is important that every area of intervention have a system for gathering and processing data which is as centralised as possible, permitting, first and foremost, the timely and precise reconstruction of trends unfolding in drug use and of the overall impact of initiatives, in addition to their costs, over time. Information systems and the epidemiological studies conducted on the at-risk population, as well as on wastewater, in addition to the continuing use of the early warning system in order to identify new drugs and insert them in the appropriate tables, are therefore strategic elements[60].

[57] International Narcotics Control Board, Guidelines for governments on preventing the illegal sale of internationally controlled substances through the Internet, United Nations Publication, New York, 2009.
[58] Serpelloni G., Macchia T., Mariani F., OUTCOME La valutazione dei risultati e l'analisi dei costi nella pratica clinica nelle tossicodipendenze, progetto NOP (National Outcome Project) del Ministero della Solidarietà Sociale 2006. Scaricabile da www.dronet.org.
[59] Dipartimento per le Politiche Antidroga e Ministero della Salute, Manuale operativo SIND, Maggio 2011. Scaricabile da www.dronet.org.
[60] Cfr. nota 17.

20. Research, the on-going and specialistic training of operators and international collaborations.

Research and neuroscience for a new scientific community

The support and funding of research concerning treatments and of rehabilitation, especially in the field of the neurosciences, is deemed to be of fundamental importance. In the field of drug addictions, the neuroscientific approach will lead to the development of new and significant perspectives and interpretative models which will be able to help us better understand not only the disease which is addiction and its related behaviours, but also which are the most effective and appropriate actions to be taken, from both a treatment standpoint as well as from one which combines rehabilitation. Furthermore, translating research results into clinical practice through on-going training courses for operators and their involvement in specific and scientific "communities" and in targeted professional networks, involving many operational units at a national level through specific multicentric projects. Moreover, it is also important to promote the involvement and collaboration of international scientific organisations operating in the field of addictions.

21. Positive results can be improved.

Decrease of consumptions, overdoses, infections

Increase of drug addicts asking for a treatment

Increase of treatments alternative to prison

Depenalising consumption

Over these last ten years, thanks to the combined efforts of all the Central, Regional and Local administrations and volunteer organisations which have shared significantly in this system based on balanced action, drug use in our country has declined, particularly among the young, the number of overdoses has fallen sharply (from 1002 a year in 1999 to 374 in 2010) and continues to decline and numbers of new HIV infections among drug addicts have dropped and are certainly under control[61]. Moreover, there has been a decrease in the incidence of new hepatitis infections. The number of drug-addicted persons who seek help and enter into treatment with public and accredited private non-profit facilities has increased. Furthermore, the number of drug-addicted persons entering prison has fallen over the last three years, while the number of those who leave prison to benefit from alternative treatment measures has risen[62].
Not one drug-addicted person has been arrested simply for having used drugs, but only ever in connection with violations of laws penalising the trafficking, dealing, illegal cultivation, etc., of drugs or for violating other laws not connected with drugs.[63]

[61] Cfr. nota 56.
[62] Cfr. nota 56.
[63] Cfr. nota 56.

ANNEX

" ASAM- American society of Addiction Medicine, 15 Agosto 2011.

Public Policy Statement: Definition of ADDICTION

Short Definition of Addiction: Addiction is a primary, chronic disease of brain reward, motivation, memory and related circuitry. Dysfunction in these circuits leads to characteristic biological, psychological, social and spiritual manifestations. This is reflected in an individual pathologically pursuing reward and/or relief by substance use and other behaviors.

Addiction is characterized by inability to consistently abstain, impairment in behavioral control, *craving*, diminished recognition of significant problems with one's behaviors and interpersonal relationships, and a dysfunctional emotional response. Like other chronic diseases, addiction often involves cycles of relapse and remission. Without treatment or engagement in recovery activities, addiction is progressive and can result in disability or premature death.

Addiction is a primary, chronic disease of brain reward, motivation, memory and related circuitry.
Addiction affects neurotransmission and interactions within reward structures of the brain, including the *nucleus accumbens*, anterior cingulate cortex, basal forebrain and *amygdala*, such that motivational hierarchies are altered and addictive behaviors, which may or may not include alcohol and other drug use, supplant healthy, self-care related behaviors. Addiction also affects neurotransmission and interactions between cortical and hippocampal circuits and brain reward structures, such that the memory of previous exposures to rewards (such as food, sex, alcohol and other drugs) leads to a biological and behavioral response to external cues, in turn triggering *craving* and/or engagement in addictive behaviors.

The neurobiology of *addiction* encompasses more than the neurochemistry of reward.
The frontal cortex of the brain and underlying white matter connections between the frontal cortex and circuits of reward, motivation and memory are fundamental in the manifestations of altered impulse control, altered judgment, and the dysfunctional pursuit of rewards (which is often experienced by the affected person as a desire to "be normal") seen in addiction--despite cumulative adverse consequences experienced from engagement in substance use and other addictive behaviors. The frontal lobes are important in inhibiting impulsivity and in assisting individuals to appropriately delay gratification. When persons with addiction manifest problems in deferring gratification, there is a neurological locus of these problems in the frontal cortex. Frontal lobe morphology, connectivity and functioning are still in the process of maturation during adolescence and young adulthood, and early exposure to substance use is another significant factor in the development of addiction. Many neuroscientists believe that developmental morphology is the basis that makes early-life exposure to substances such an important factor.

Genetic factors account for about half of the likelihood that an individual will develop addiction. Environmental factors interact with the person's biology and affect the extent to which genetic factors exert their influence. Resiliencies the individual acquires (through parenting or later life experiences) can affect the extent to which genetic predispositions lead to the behavioral and other manifestations of addiction. Culture also plays a role in how addiction becomes actualized in persons with biological vulnerabilities to the development of addiction.

Other factors that can contribute to the appearance of addiction, leading to its characteristic bio-psycho-socio-spiritual manifestations, include:

a) The presence of an underlying biological deficit in the function of reward circuits, such that drugs and behaviors which enhance reward function are preferred and sought as reinforcers;
b) The repeated engagement in drug use or other addictive behaviors, causing neuroadaptation in motivational circuitry leading to impaired control over further drug use or engagement in addictive behaviors;
c) Cognitive and affective distortions, which impair perceptions and compromise the ability to deal with feelings, resulting in significant self-deception;
d) Disruption of healthy social supports and problems in interpersonal relationships which impact the development or impact of resiliencies;
e) Exposure to trauma or stressors that overwhelm an individual's coping abilities;
f) Distortion in meaning, purpose and values that guide attitudes, thinking and behavior;
g) Distortions in a person's connection with self, with others and with the transcendent (referred to as God by many, the Higher Power by 12-steps groups, or higher consciousness by others); and
h) The presence of co-occurring psychiatric disorders in persons who engage in substance use or other addictive behaviors.

Addiction is characterized by:

a) Inability to consistently Abstain;
b) Impairment in Behavioral control;
c) Craving; or increased "hunger" for drugs or rewarding experiences;

d) Diminished recognition of significant problems with one's behaviors and interpersonal relationships
e) A dysfunctional Emotional response.

The power of external cues to trigger *craving* and drug use, as well as to increase the frequency of engagement in other potentially addictive behaviors, is also a characteristic of addiction, with the hippocampus being important in memory of previous euphoric or dysphoric experiences, and with the *amygdala* being important in having motivation concentrate on selecting behaviors associated with these past experiences.

Although some believe that the difference between those who have addiction, and those who do not, is the quantity or frequency of alcohol/drug use, engagement in addictive behaviors (*such as gambling or spending*), or exposure to other external rewards (such as food or sex), a characteristic aspect of addiction is the qualitative way in which the individual responds to such exposures, stressors and environmental cues.
A particularly pathological aspect of the way that persons with addiction pursue substance use or external rewards is that preoccupation with, obsession with and/or pursuit of rewards (e.g., alcohol and other drug use) persist despite the accumulation of adverse consequences. These manifestations can occur compulsively or impulsively, as a reflection of impaired control.

Persistent risk and/or recurrence of relapse, after periods of abstinence, is another fundamental feature of addiction. This can be triggered by exposure to rewarding substances and behaviors, by exposure to environmental cues to use, and by exposure to emotional stressors that trigger heightened activity in brain stress circuits.

In addiction there is a significant impairment in executive functioning, which manifests in problems with perception, learning, impulse control, compulsivity, and judgment. People with addiction often manifest a lower readiness to change their dysfunctional behaviors despite mounting concerns expressed by significant others in their lives; and display an apparent lack of appreciation of the *magnitude* of cumulative problems and complications. The still developing frontal lobes of adolescents may both compound these deficits in executive functioning and predispose youngsters to engage in "high risk" behaviors, including engaging in alcohol or other drug use.
The profound drive or *craving* to use substances or engage in apparently rewarding behaviors, which is seen in many patients with addiction, underscores the compulsive or avolitional aspect of this disease. This is the connection with "powerlessness" over addiction and "unmanageability" of life, as is described in Step 1 of 12 Steps programs.

Addiction is more than a behavioral disorder. Features of *addiction* include aspects of a person's behaviors, cognitions, emotions, and interactions with others, including a person's ability to relate to members of their family, to members of their community, to their own psychological state, and to things that transcend their daily experience.

Behavioral manifestations and complications of addiction, primarily due to impaired control, can include:

a) Excessive use and/or engagement in addictive behaviors, at higher frequencies and/or quantities than the person intended, often associated with a persistent desire for and unsuccessful attempts at behavioral control;
b) Excessive time lost in substance use or recovering from the effects of substance use and/or engagement in addictive behaviors, with significant adverse impact on social and occupational functioning (e.g. the development of interpersonal relationship problems or the neglect of responsibilities at home, school or work);
c) Continued use and/or engagement in addictive behaviors, despite the presence of persistent or recurrent physical or psychological problems which may have been caused or exacerbated by substance use and/or related addictive behaviors;
d) A narrowing of the behavioral repertoire focusing on rewards that are part of addiction; and
e) An apparent lack of ability and/or readiness to take consistent, ameliorative action despite recognition of problems.

Cognitive changes in addiction can include:

a) Preoccupation with substance use;
b) Altered evaluations of the relative benefits and detriments associated with drugs or rewarding behaviors; and
c) The inaccurate belief that problems experienced in one's life are attributable to other causes rather than being a predictable consequence of addiction.

The emotional aspects of addiction are quite complex. Some persons use alcohol or other drugs or pathologically pursue other rewards because they are seeking "positive reinforcement" or the creation of a positive emotional state ("*euphoria*"). Others pursue substance use or other rewards because they have experienced relief from negative emotional states ("*dysphoria*"), which constitutes "negative reinforcement." Beyond the initial experiences of reward and relief, there is a dysfunctional emotional state present in most cases of addiction that is associated with the persistence of engagement with addictive behaviors. The state of addiction is not the same as the state of intoxication. When anyone experiences mild intoxication through the use of alcohol or other drugs, or when one engages non-pathologically in potentially addictive behaviors such as *gambling* or eating, one may experience a "high", felt as a "positive" emotional state associated with increased dopamine and opioid peptide activity in reward circuits. After such an experience, there is a neurochemical *rebound*, in which the reward function does not simply revert to baseline, but often drops below the original levels. This is usually not consciously perceptible by the individual and is not necessarily associated with functional impairments.

Over time, repeated experiences with substance use or addictive behaviors are not associated with ever increasing reward circuit activity and are not as subjectively rewarding. Once a person experiences withdrawal from drug use or comparable behaviors, there is an anxious, agitated, dysphoric and labile emotional experience, related to suboptimal reward and the recruitment of brain and hormonal stress systems, which is associated with withdrawal from virtually all pharmacological classes of addictive drugs. While tolerance develops to the "high," tolerance does not

develop to the emotional "low" associated with the cycle of intoxication and withdrawal. Thus, in addiction, persons repeatedly attempt to create a "high"--but what they mostly experience is a deeper and deeper "low." While anyone may "want" to get "high", those with addiction feel a "need" to use the addictive substance or engage in the addictive behavior in order to try to resolve their dysphoric emotional state or their physiological symptoms of withdrawal. Persons with addiction compulsively use even though it may not make them feel good, in some cases long after the pursuit of "rewards" is not actually pleasurable.5 Although people from any culture may choose to "get high" from one or another activity, it is important to appreciate that addiction is not solely a function of choice. Simply put, addiction is not a desired condition.

As addiction is a chronic disease, periods of relapse, which may interrupt spans of remission, are a common feature of addiction. It is also important to recognize that return to drug use or pathological pursuit of rewards is not inevitable.

Clinical interventions can be quite effective in altering the course of addiction. Close monitoring of the behaviors of the individual and *contingency management*, sometimes including behavioral consequences for relapse behaviors, can contribute to positive clinical *outcomes*. Engagement in health promotion activities which promote personal responsibility and accountability, connection with others, and personal growth also contribute to *recovery*. It is important to recognize that addiction can cause disability or premature death, especially when left untreated or treated inadequately.

The qualitative ways in which the brain and behavior respond to drug exposure and engagement in addictive behaviors are different at later stages of addiction than in earlier stages, indicating progression, which may not be overtly apparent. As is the case with other chronic diseases, the condition must be monitored and managed over time to:

a) Decrease the frequency and intensity of relapses;
b) Sustain periods of remission; and
c) Optimize the person's level of functioning during periods of remission.

In some cases of addiction, medication management can improve treatment outcomes. In most cases of addiction, the integration of psychosocial rehabilitation and ongoing care with *evidence-based* pharmacological therapy provides the best results. Chronic disease management is important for minimization of episodes of relapse and their impact. Treatment of addiction saves lives.

Addiction professionals and persons in recovery know the hope that is found in recovery. *Recovery* is available even to persons who may not at first be able to perceive this hope, especially when the focus is on linking the health consequences to the disease of addiction. As in other health conditions, *self-management,* with mutual support, is very important in recovery from addiction. *Peer support* such as that found in various "self-help" activities is beneficial in optimizing health status and functional outcomes in *recovery*.

Recovery from addiction is best achieved through a combination of self-management, mutual support, and professional care provided by trained and certified professionals.

Explanatory footnotes:

1. 1. The neurobiology of reward has been well understood for decades, whereas the neurobiology of *addiction* is still being explored. Most clinicians have learned of reward pathways including projections from the ventral tegmental area (VTA) of the brain, through the median forebrain bundle (MFB), and terminating in the nucleus accumbens (Nuc Acc), in which dopamine neurons are prominent. Current neuroscience recognizes that the neurocircuitry of reward also involves a rich bi-directional circuitry connecting the nucleus accumbens and the basal forebrain. It is the reward circuitry where reward is registered, and where the most fundamental rewards such as food, hydration, sex, and nurturing exert a strong and life-sustaining influence. Alcohol, nicotine, other drugs and pathological *gambling* behaviors exert their initial effects by acting on the same reward circuitry that appears in the brain to make food and sex, for example, profoundly reinforcing. Other effects, such as intoxication and emotional euphoria from rewards, derive from activation of the reward circuitry. While intoxication and withdrawal are well understood through the study of reward circuitry, understanding of addiction requires understanding of a broader network of neural connections involving forebrain as well as midbrain structures. Selection of certain rewards, preoccupation with certain rewards, response to triggers to pursue certain rewards, and *motivational drives* to use alcohol and other drugs and/or pathologically seek other rewards, involve multiple brain regions outside of reward neurocircuitry itself.

2. These five features are not intended to be used as "diagnostic criteria" for determining if addiction is present or not. Although these characteristic features are widely present in most cases of *addiction*, regardless of the pharmacology of the substance use seen in addiction or the reward that is pathologically pursued, each feature may not be equally prominent in every case. The diagnosis of addiction requires a comprehensive biological, psychological, social and spiritual assessment by a trained and certified professional.

3. In this document, the term "*addictive behaviors*" refers to behaviors that are commonly rewarding and are a feature in many cases of addiction. Exposure to these behaviors, just as occurs with exposure to rewarding drugs, is facilitative of the addiction process rather than causative of *addiction*. The state of brain anatomy and physiology is the underlying variable that is more directly causative of addiction. Thus, in this document, the term "addictive behaviors" does not refer to dysfunctional or socially disapproved behaviors, which can appear in many cases of addiction. Behaviors, such as dishonesty, violation of one's values or the values of others, criminal acts etc., can be a component of addiction; these are best viewed as complications that result from rather than contribute to addiction.

4. The anatomy (the brain circuitry involved) and the physiology (the neuro-transmitters involved) in these three modes of relapse (drug- or reward-triggered relapse vs. cue-triggered relapse vs. stress-triggered relapse) have been delineated through neuroscience research.

Relapse triggered by exposure to addictive/rewarding drugs, including alcohol, involves the nucleus accumbens and the VTA-MFB-Nuc Acc neural axis (the brain's mesolimbic dopaminergic "incentive salience circuitry"--see footnote 2 above). Reward-triggered relapse also is mediated by glutamatergic circuits projecting to the nucleus accumbens from the frontal cortex.

Relapse triggered by exposure to conditioned cues from the environment involves glutamate circuits, originating in frontal cortex, insula, hippocampus and amygdala projecting to mesolimbic incentive salience circuitry.

Relapse triggered by exposure to stressful experiences involves brain stress circuits beyond the hypothalamic-pituitary-adrenal axis that is well known as the core of the endocrine stress system. There are two of these relapse-triggering brain stress circuits – one originates in noradrenergic nucleus A2 in the lateral tegmental area of the *brain stem* and projects to the hypothalamus, *nucleus accumbens*, frontal cortex, and *bed nucleus* of the *stria terminalis*, and uses *norepinephrine* as its neurotransmitter; the other originates in the central nucleus of the amygdala, projects to the *bed nucleus* of the *stria terminalis* and uses corticotrophin-releasing factor (CRF) as its neurotransmitter.

5. Pathologically pursuing reward (mentioned in the Short Version of this definition) thus has multiple components. It is not necessarily the amount of exposure to the reward (e.g., the dosage of a drug) or the frequency or duration of the exposure that is pathological. In addiction, pursuit of rewards persists, despite life problems that accumulate due to addictive behaviors, even when engagement in the behaviors ceases to be pleasurable. Similarly, in earlier stages of addiction, or even before the outward manifestations of addiction have become apparent, substance use or engagement in addictive behaviors can be an attempt to pursue relief from dysphoria; while in later stages of the disease, engagement in addictive behaviors can persist even though the behavior no longer provides relief.

Edited by ASAM Board of Directors, 12 Aprile 2011.

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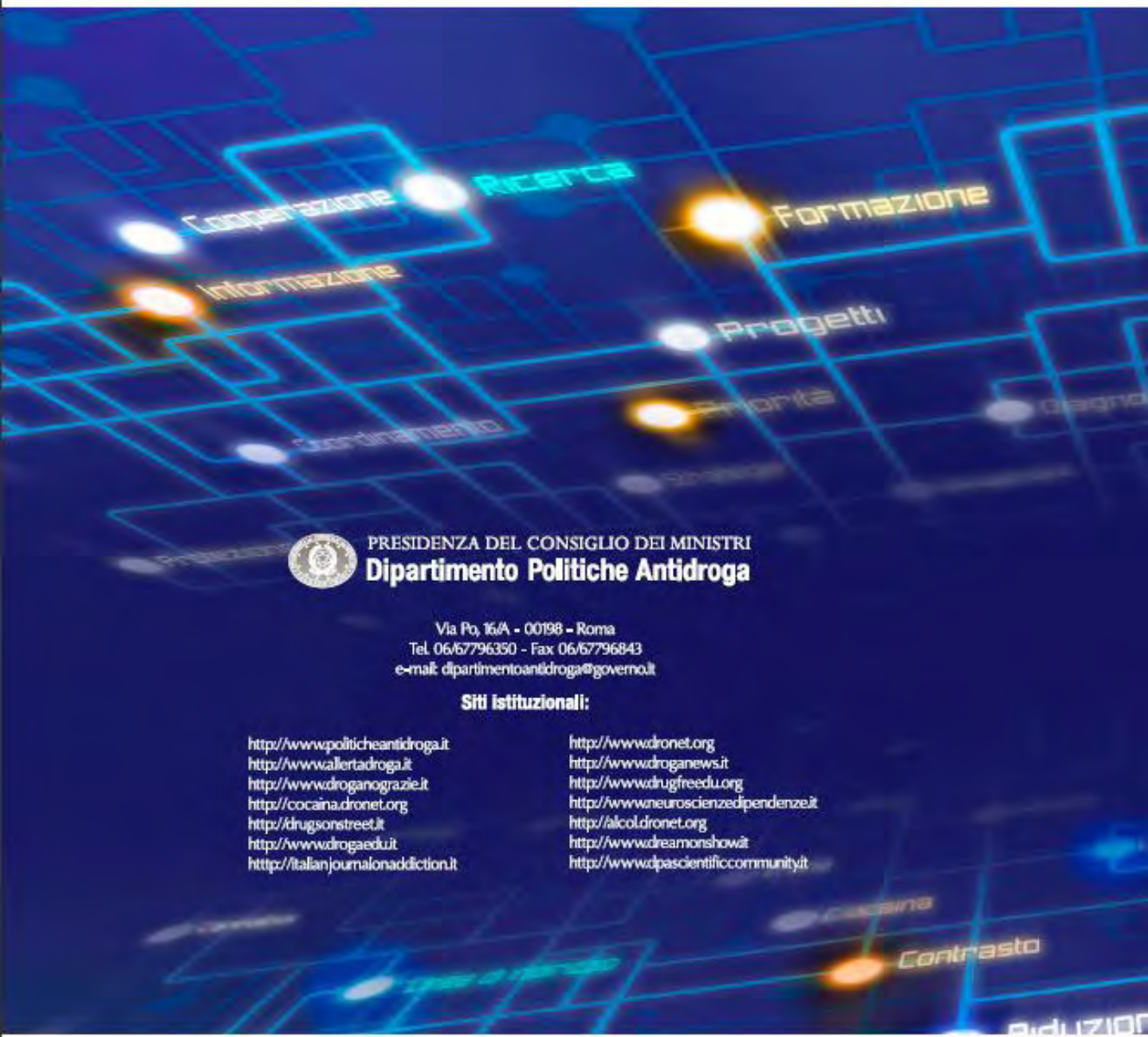

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http://www.allertadroga.it
http://www.droganograzie.it
http://cocaina.dronet.org
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