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## **Two decades of the Swiss program based on the prescription of Diacetylmorphine, from a public health intervention to a treatment option**

Khan, Riaz ; Khazaal, Yasser ; Thorens, Gabriel ; Achab, S ; Annoni-Manghi, R ; Zullino, Daniele ;  
Uchtenhagen, Ambros

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# Two decades of the Swiss program based on the prescription of Diacetylmorphine, from a public health intervention to a treatment option

R. Khan<sup>1</sup>, Y. Khazaal<sup>1</sup>, G. Thorens<sup>1</sup>, S. Achab<sup>1</sup>, R. Annoni-Manghi<sup>1</sup>, D. Zullino<sup>1</sup>, A. Uchtenhagen<sup>2</sup>

<sup>1</sup>Division of Addictology, Department of Mental Health and Psychiatry University Hospitals of Geneva and <sup>2</sup>Swiss Research Institute for Public Health and Addiction at Zurich University, Zurich, Switzerland

## ABSTRACT

The medical prescription of diacetyl morphine (heroin) treatment is an addition to the therapeutic arsenal for patients gravely dependent or addicted to heroin use and for whom other forms of therapy have failed. In Switzerland, the Federal Office of Public Health (SFOPH) has established directives and recommendations concerning prescription and administration of diacetyl-morphine.

La prescription médicale d'un traitement par diacétylmorphine (héroïne) s'ajoute à l'arsenal thérapeutique disponible pour les patients gravement dépendants à l'héroïne et pour qui les autres approches thérapeutiques ont échoué. En Suisse, l'Office fédéral de la santé publique (OFSP) a formulé des directives et recommandations quant à la prescription et l'administration de la diacétylmorphine.

The diacetyl-morphine treatment aims to provide access to healthcare and retention of the patient in the healthcare system. The therapeutic objectives are to promote health, to improve social integration and progress in treatment for the targeted group of patients fulfilling the criteria of diacetyl-morphine prescription

The Swiss program for the medical prescription of Diacetylmorphine is two decades old, initially introduced as a harm reduction measure in 1994 following the Swiss drug policy change of 1991. This program is an integral part of the four pillars Swiss drug policy (prevention treatment, harm reduction and repression). Over the years, its initial objective as a harm reduction measure has been replaced by its role as a treatment tool for which the harm reduction measure had laid the basis. This approach has enriched the therapeutic arsenal in the field of addiction treatments catering for the needs of the refractory heroin addicts.

The mid- and long- term results of heroin, assisted treatment (HAT), speaks in favor of this treatment rationale with effects on morbidity, mortality and a reduction in criminal involvement. These indicators are all related

to a significant reduction of intravenous use of illegal substances along with social stabilization.

Yet, the treatment program still remains one of the most controversial practices in medicine despite its documented effectiveness.<sup>1,2,3</sup>

The program was introduced following an epidemic of heroin, overdose, HIV infections and the flourishing of open-air consumption scenes around large cities. Currently there are 21 centers, of which one of them is in a prison which dispense this therapeutic approach. Our center in Geneva, the only one in the French speaking region of the country has been operational since 1996.

The admission criteria for the prescription of diacetylmorphine are<sup>4</sup> the following:

- At least be 18 years of age,
- Severely heroin dependant for at least 2 years,
- Have undergone at least two inconclusive treatment episodes, without interruption, with recognized treatment methods
- Have physical, psychological impairments along with social distress caused by drug consumption.

The Swiss federal office of public health (SFOPH) delivers the authorizations for the prescription and oversees the program in collaboration with other partners.

In the context of treatment by the prescription of diacetylmorphine, the SFOPH fulfills the following tasks :

- Delivers authorisations to institutions, doctors and patients.
- Monitors the institutions and implements the relative controls in collaboration with the cantonal health authorities and Swissmedic.
- Coordinates the diacetylmorphine prescription network aiming to promote exchange, share expertise and transfer of knowledge
- Elaborates and supports publication of the manual on Treatment and prescription of diacetylmorphine.
- Coordination of the commission of diacetylmorphine prescription specialists
- Elaboration of an annual report on the diacetylmorphine prescription program

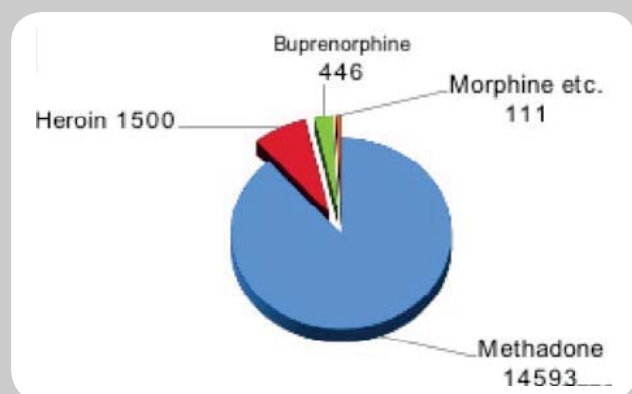
What conclusions can we draw from 2 decades of medical prescription of Diacetylmorphine?

For the last 10 years, the total number of patients is pretty much stable around 1500 whilst it was around 400 in 1994. The average age has been on the increase every year with a large age range (20-75 years). The number of estimated opiate users in Switzerland is 30'000 (for a total Swiss population of 7.8 million persons) and currently 55% of them are in treatment.

At least half the patients on average stay for 2,5 years in the program and the percentage of the long term, 15 years retention in the program, is around 1/5 of the patients in treatment.

As shown in Figure 1, the great majority (more than 85%) of opioid, based substitution, treatments are methadone based whilst less than 10% are Diacetylmorphine. The prescription of diacetylmorphine is not a first line treatment for opioid dependency. It is a relatively expensive and intensive treatment and is only provided in a strict framework, when all other commonly practiced therapeutic options are no longer effective for the patient.

**FIGURE 1: OPIATE ASSISTED TREATMENT IN SWITZERLAND: NUMBER OF PATIENTS BY TREATMENTS. SWISS FEDERAL OFFICE OF PUBLIC HEALTH**



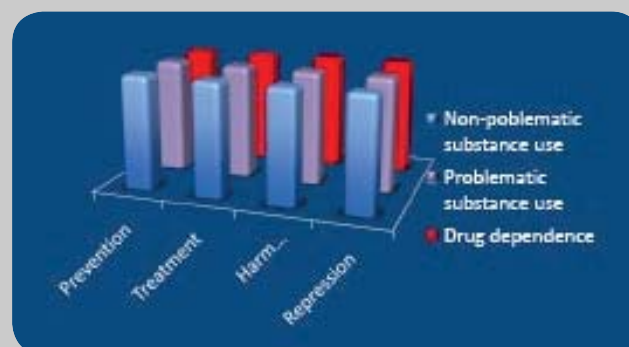
This treatment approach offers the possibility of continued access to medical care for the severely afflicted patients in order to maintain them in the treatment system and also offers the possibility of increasing stepwise the care in addiction treatment for this complex group.

The conceptual model of the Swiss drug policy of 4 pillars<sup>5</sup> has the merit of uniting the various actors on a

common platform in a consensual and coherent drug policy approach. The Swiss confederation's leadership role and the Swiss direct democracy greatly facilitated the acceptance of this harm reduction measure in the four pillars policy approach which is now legally bounded in the Swiss constitution following two referendums.

The four pillars conceptual model has evolved towards a 3 dimensional approach called the "Cube" (Figure 2). This concept integrates in one of the dimension's the 4 pillars approach, in another dimension, the different psychoactive substances and in the 3<sup>rd</sup> dimension, the level of consumption and behavioral risks, ranging from none, insignificant, problematic and dependent use. This view has the merit of identifying the potential risky consumers and also dependent users. This approach allows tailoring of a public health approach to the consumption of substances.

**FIGURE 2: THE FOUR PILLAR CONCEPTUAL MODEL, THE "CUBE"**



In conclusion, the prescription of Diacetylmorphine can be considered as a feasible, safe and integrated treatment approach enhancing access to healthcare for this complex group of patients.

Due to the lack of comparable policy analyses from other countries having medically prescribed Diacetylmorphine programs, the Swiss treatment program can merely be used as an example and a possible starting point for furthering comparative research<sup>6</sup>.

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## ISAM 2014 Abstracts

The following is a selection of relevant abstracts from the 2014 ISAM Annual meeting in Yokohama, Japan.

### ADDICTION AS A REWARD, STRESS AND EXECUTIVE FUNCTION DISORDER

George F. Koob  
*National Institute on Alcohol Abuse and Alcoholism, USA*

Drug addiction has been conceptualized as a chronically relapsing disorder of compulsive drug seeking and taking that progresses through three stages: binge/intoxication, withdrawal/negative affect, and preoccupation/anticipation. Via these stages, drug addiction impacts multiple motivational mechanisms and can be conceptualized as a disorder that includes elements of positive reinforcement and negative reinforcement. Three key neurobiological circuits are engaged in the motivational changes driving addiction that involve dysregulation in incentive salience- reward systems, sensitization of brain stress systems, and deficits in executive function systems. Specific neurocircuitry/neurochemical elements in these structures include the basal ganglia (incentive salience-reward deficits involving dopamine), the extended amygdala (recruitment of the brain stress systems involving corticotropin releasing factor) and the orbitofrontal/prefrontal cortex (executive function deficits involving glutamate). The combination of dysregulated incentive salience-reward function, sensitized stress systems and disrupted orbitofrontal/prefrontal executive function provides a powerful motivation for compulsive drug use and the loss of control over drug taking. Understanding

the neurocircuitry neuroadaptations in the reward, stress and executive function systems will provide new insights into identifying vulnerability to addiction and novel treatments for addiction.

### GLOBAL PUBLIC HEALTH AND ADDICTION MEDICINE: FROM INTERNATIONAL POLICY FRAMEWORKS TO ICD-10 REVISION

Vladimir Poznyak  
*Department of Mental Health and Substance Abuse, World Health Organization, Switzerland*

Use of alcohol, tobacco, drugs and other substances has a significant impact on global health: by any measure the global burden of disease attributable to substance use is bigger than the burden attributable to any other risk factor. Alcohol and tobacco use, highly prevalent in the world population, are among the most important contributors to poor health globally. In 2012 estimated 3.3 million deaths, or 5.9% of all deaths worldwide, were attributable to alcohol consumption. The Global strategy to reduce the harmful use endorsed by the governments of all WHO Member States provides international policy framework for action at all levels. Reducing the harmful use of alcohol is one of the 9 targets for the Global action on prevention and control of noncommunicable diseases (NCDs).