LEXYMETRIC ANALYSIS AND EVALUATION OF THE EFFECTIVENESS OF DRUG LAWS AND POLICIES: COMPLETE EXAMPLES OF APPLICATION

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IMPORTANT RESEARCH PROJECT ERANID-IDPSO ON

ILLICIT DRUG POLICIES AND SOCIAL OUTCOMES: A QUANTITATIVE ANALYSIS

HTTPS://WWW.ERANID.EU/PROJECTS/IDPSO/

- ..We studied the relationship between countries' drug laws and policies and key health and social indicators, by implementing, first, a state-of-the art comparative law technique that allows the quantitative a priori evaluation of drug laws and, then

- .. …to establish a relationship between law indicators and key health and social indicators, to produce the ex post evaluation of the laws, contributing significantly to the ongoing discussion of drug laws and policies.

TOPICS COVERED

- Country chosen as an example of drug laws and policies in 30 years: Italy

- Leximetric approach chosen for the a priori evaluation of the laws (and policies)

- Application to the three Italian laws of the past 30 years

- Key social and criminal justice indicators chosen for ex post evaluation of laws

- Comparative study of leximetric scores and indicator values

- Consideration of information linked to classic indicators and new indicators linked to supply reduction and demand reduction

- Mortality and morbidity indicators and criminal organizations

FROM QUALITATIVE CLASSIFICATION (SEVERITY) TO QUANTITATIVE (LEXIMETRIC) CLASSIFICATION : THE EXAMPLE OF ITALY

- **Only in one country (Italy) and since 2000, the approach is very interesting because 3 different anti-drug laws (and policies) have been in force between 2000 and our days:**

- **2000-2006 (the least severe law);**

- **2006-2013 (the most severe and repressive);**

- **2014-today (the law less severe than the second, but more repressive than the first).**

- We will consider two specific articles of the law in force:

- art. 75 (and 75 bis) related to consumers (administrative penalty);

- art. 73 reserved related to pushers (criminal sanction).

LEXIMETRIC SCORES

- In the three laws more or less harsh consequences for the two groups are provided and therefore a score can be assigned proportional to the expected level of repression:

  - **Administrative penalty: score from 0-5 depending on the degree of strength.**

  - **Criminal sanction: score from 5-10, depending on the level of maximum penalty established for the crime.**

Figure 1. LEXIMETRIC EVOLUTION OF THE VARIABLES
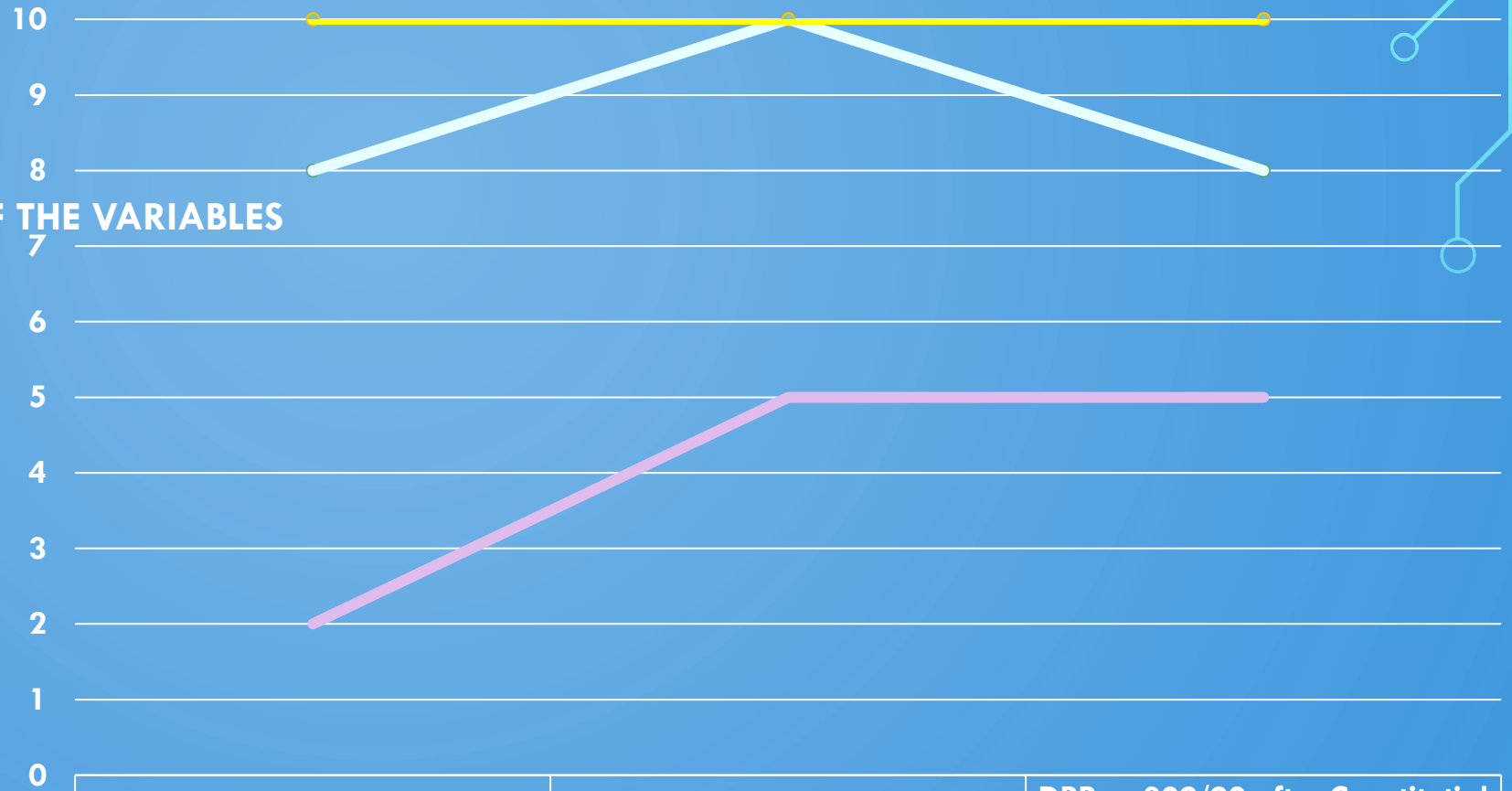
	DPR n. 309/90 in 2000	Law n. 49/2006	DPR n. 309/90 after Constitutiol Court sentence n. 32/2014
Consumption for personal use of 'soft drugs'	2	5	5
Consumption for personal use of 'hard drugs'	2	5	5
Cultivation of 'soft drugs'	8	10	8
Cultivation for personal use of 'soft drugs'	8	10	8
Cultivation of 'hard drugs'	10	10	10
Cultivation for personal use of 'hard drugs'	10	10	10
Sale of 'soft drugs'	8	10	8
Sale of 'hard drugs'	10	10	10

Figure 2. Level of repression

■ repression value for the use of soft substances
■ repression value for the use of hard substances
■ repression value for the supply of soft substances
■ repression value for the supply of hard substances

A VERY ASCIENTIFIC QUITE REPRESSIVE LAW (2006-2013): MAIN ASPECTS.

- 1) All drugs become equal before the law and anyone who buys, receives for any reason, or in any way illegally possesses drugs is punished;

- 2) Cannabis is treated in the same way as heroin, cocaine and any other illegal substance for both drug dealers and drug users;

- 3) For personal consumption, administrative penalties are always provided, which can now be up to one year and can no longer be avoided by accepting to enter therapy.

- The absolute **ascientific** law has caused serious consequences, ignored even later by the authors of the law who refused, and still refuse, any scientific evidence by choosing a priori ideological quite punitive approach.

SCIENTIFIC CLASSIFICATION OF SUBSTANCES AS BASIS OF DRUG POLICIES

- In 2019, the Global Commission on Drug Policy published the report **CLASSIFICATION OF PSYCHOACTIVE SUBSTANCES: WHEN SCIENCE WAS LEFT BEHIND** inviting the severity scores of individual substances to be taken into account in drug policy decisions, as suggested by papers as Nutt et al. (2010) and van Amsterdam et al. (2010, 2015) (https://www.globalcommissionondrugs.org/reports/classification-psychoactive-substances).

- The different drugs may call indeed for different strategies and policies, because there are large differences in toxicity, addiction potential and societal burden between them. Consequently, the most efficient approach to limit the health and economic burden of licit and illicit drug use is to focus the policy measures on drugs with the highest overall harm, including the physical, psychological and social harm to users and society (i.e. non-users) (van Amsterdam et al., 2015).

CLASSIC KEY INDICATORS AND NEW INDICATORS TO BE USED FOR DRUG POLICY EX-POST EVALUATION

- The social cost of "illegal" drugs measures the monetary and social cost of the consequences, most unintended, of the trafficking and selling illegal drugs and the consumption of them. They depend a lot on the laws and policies adopted, therefore they can be related to leximetric values.

- In order to introduce useful indicators for the posterior evaluation of drug policies it is important to consider the types of specific interventions:

- **– supply reduction (dealers)**

- **– demand reduction (users);**

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Global leximetric scores related to drug dealers and related indicators

Leximetric values and Indicators related to Social costs	D.P.R. 309/90 (1990-2005)	Law 49/2006 (2006-2013)	Law 79/2014 (2014--)
Global leximetric level referring to dealers	36	40	36
Prevalence of persons in prison for art.73 (average)	19,115	23,074	18,153
Percentage of persons in prison for art.73 (average)	36.3	38.9	33
National Statistical Institute (Istat) estimate, according to Eurostat method, of annual market growth in the period (average of revenue for criminal organizations)	No estimate yet	+0.65 billions	+0.43 billions
Average number of market workers at risk of entering prison for art.73 (estimated)	N.A.	585,444	487,306
Average number of market workers aged<20 at risk of entering prison for art.73 (estimated)	N.A.	29,800	11,200

Global leximetric scores related to drug users and related indicators

Leximetric values and Indicators related to Social costs	D.P.R. 309/90 (1990-2005)	Law 49/2006 (2006-2013)	Law 79/2014 (2014--)
Global leximetric level referring to users	22	30	30
Administrative sanctions for those reported art. 75 (average % over the period)	36.6	76.6	91.4
Change in annual incidence in therapeutic public services over the period (%)	+5.8	-20.8	-31.
Change annual prevalence in therapeutic public services over the period (%)	+72.9	+3.7	-12.5
Average expected duration of therapies over the period (in years)	4.2	5.1	6.5
Average social cost over the period (Prevalence multiplied by expected therapy duration)	571,696	862,847	877,603
Poly-drug use indicator PDS (on personal health) at 15 years (ESPAD) (average over the period)	N.A. it is known that poly-drug use in the '90s was not widespread	0.47 (linked to the market: poly-drug supply induced poly-drug use)	0.38 (poly-drug supply is hampered and poly-drug use is reduced)

# NEW INDICATORS FROM PREVIOUS EU PROJECTS

Poly-drug use indicator PDS (on personal health) at 15 years (ESPAD) (average over the period)	N.A. it is known that poly-drug use in the '90s was not widespread	0.47 (linked to the market: poly-drug supply induced poly-drug use)	0.38 (poly-drug supply is hampered and poly-drug use is reduced)	-19%

The personal poly-use indicator is derived from the total frequency of use of all substances in a specific period and the weighted average obtained by multiplying the frequency of use of each substance by the substance's harm score according to van Amsterdam et al. (2010 and 2015). Several projects data-sets show that Poly-use stems from poly-sales, encouraged by the law equating soft and hard substances (Poly drug seizures +3% in 2006).

Average number of market workers at risk of at risk of going to jail for art.73 (estimated)	N.A. Data not available	585,444	487,306	-17%
Average number of market workers aged<20 at risk of going to jail for art.73 (estimated)	N.A. Data not available	29,800	11,200	-63%

The estimate of the population of drug dealers at risk of incarceration is obtained using the truncated Poisson method (Bouchard and Tremblay, 2005) based on appropriate data provided by the Ministry of Justice Department of Prisons

THERAPEUTIC PROGRAMS AND ADMINISTRATIVE SANCTIONS FOR REPORTED DRUG USERS: INFLUENCE ON MORTALITY INDICATOR
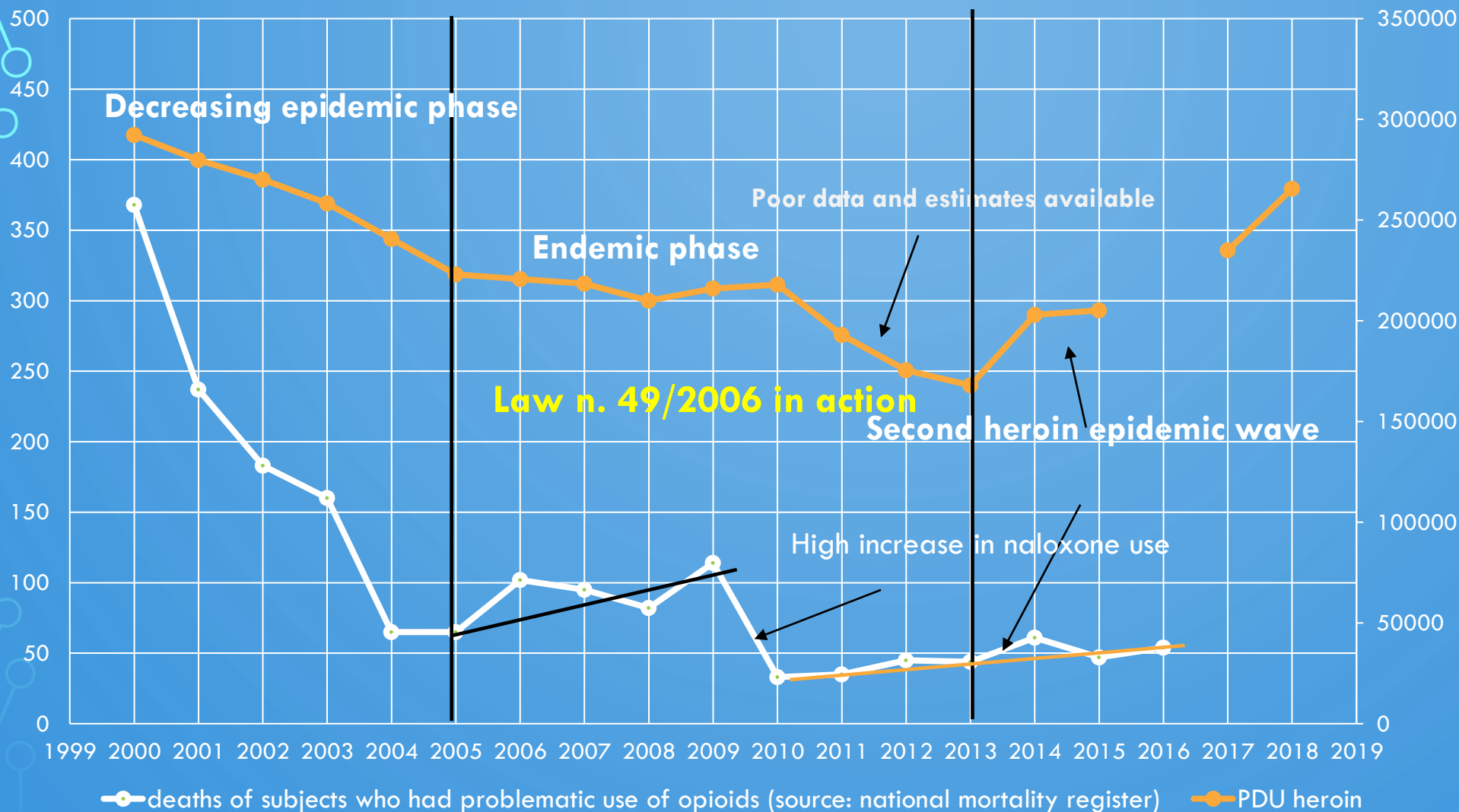
Law n. 49/2006 in action
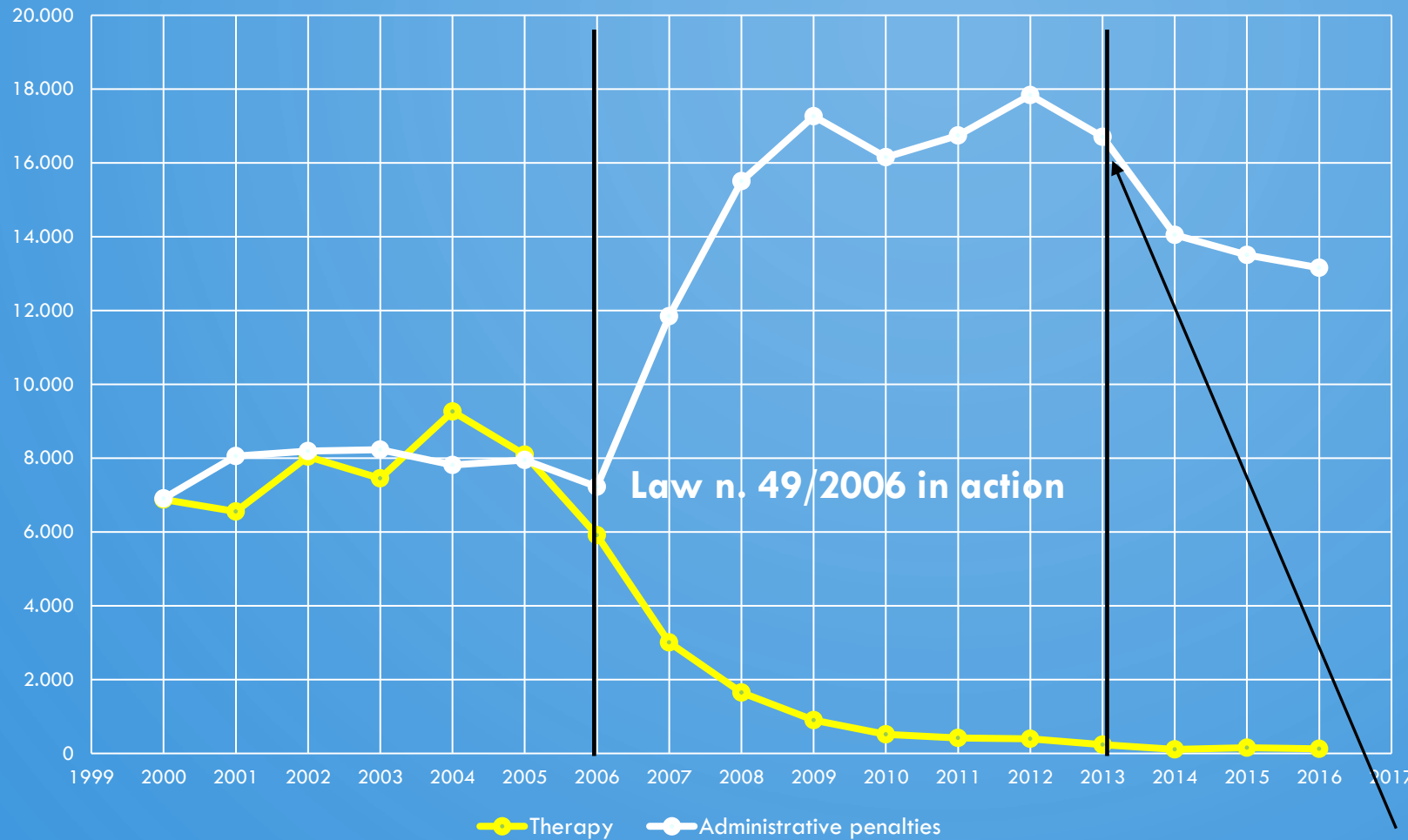
The secondary prevention, that took place with the start of therapy before 2006, was blocked by the Law n. 49/2006.

This situation resulted, in the first few years since 2006, in the unexpected increase in deaths, that constitute the important key indicator, especially for heroin (and opiates), indeed the substance with the highest score in van Amsterdam et al. (2010, 2015) as in Nutt et al.(2008).

The trend in the annual number of sanctions is consistent with the trend in the leximetric score related to the 3 laws.

The decrease in administrative sanctions since 2014 derives from the "soft" reintegration of cannabis among the soft drugs in the third Law.

Therapy   Administrative penalties

UNINTENDED CONSEQUENCES: DEATHS OF OPIATES CONSUMERS AND OFFICIAL ESTIMATES OF HEROIN PDU PREVALENCE (RIGHT AXIS)

The increase in deaths at the beginning of the **Law n. 49/2006** entry is possibly related to the limited possibility of therapy to avoid administrative sanctions by consumers; this is explained by the important study VedeTTE on heroin users (sample size greater than 10000). The results, available since 2005, showed that the annual mortality rate was 0.1% for subjects in therapy and 1.1% for those not in therapy (Davoli et al. 2007).

Decreasing epidemic phase

Endemic phase

Poor data and estimates available

Law n. 49/2006 in action

Second heroin epidemic wave

High increase in naloxone use

deaths of subjects who had problematic use of opioids (source: national mortality register) — PDU heroin

OUTCOMES RELATED TO THE POLITICAL OBJECTIVES OF CRIMINAL ORGANIZATIONS NOT INFLUENCED BY PRESENT LAWS AND POLICIES

- The Global Commission on Drug Policy released a report in 2020 entitled

ENFORCEMENT OF DRUG LAWS: REFOCUSING ON ORGANIZED CRIME ELITES where it is reported what is dependent on the objectives of criminal organizations little touched by the various laws in force therefore not assessable using the leximetric approach (http://www.globalcommissionondrugs.org/reports/enforcement-of-drug-laws).

This can be readily verified on the basis of an OECD 2019 report, entitled **ADDRESSING PROBLEMATIC OPIOID USE IN OECD COUNTRIES**, showing the second epidemic wave of opioid use in all Western countries, whatever law and policy settings are in place (https://www.oecd.org/health/addressing-problematic-opioid-use-in-oecd-countries-a18286f0-en.htm).

OECD DEATH INDICATOR: CHANGE IN THE NUMBER OF OPIOID-RELATED DEATHS FROM 2011 TO 2016

- The average value for the OECD countries, providing data to OECD, is +26.4% and for the 7 countries of the Eranid-IDPSO project:

- France: +4.3%

- Australia: +17.5%

- Canada: +20%

- Portugal: +26%

- Italy: +28.6

- England and Wales: 43.8%

- The Netherlands: +154.3%.

- France, Italy and England and Wales allow general use of naloxone, as reported by EMCDDA. But it is not enough. It is known, from the other indicators, that the use of opioids and heroin in particular has increased

DRUG-RELATED MORBIDITY IN ITALY (DATA ON HOSPITALIZATIONS)

The trend of male hospitalizations follows a parable quite increasing since 2012, females hospitalization are about constant, increasing since 2013.

The trends are quite different with respect to the different substances.

The greatest influence is due to opioid use.

There are many other results that we will include in various publications in preparation
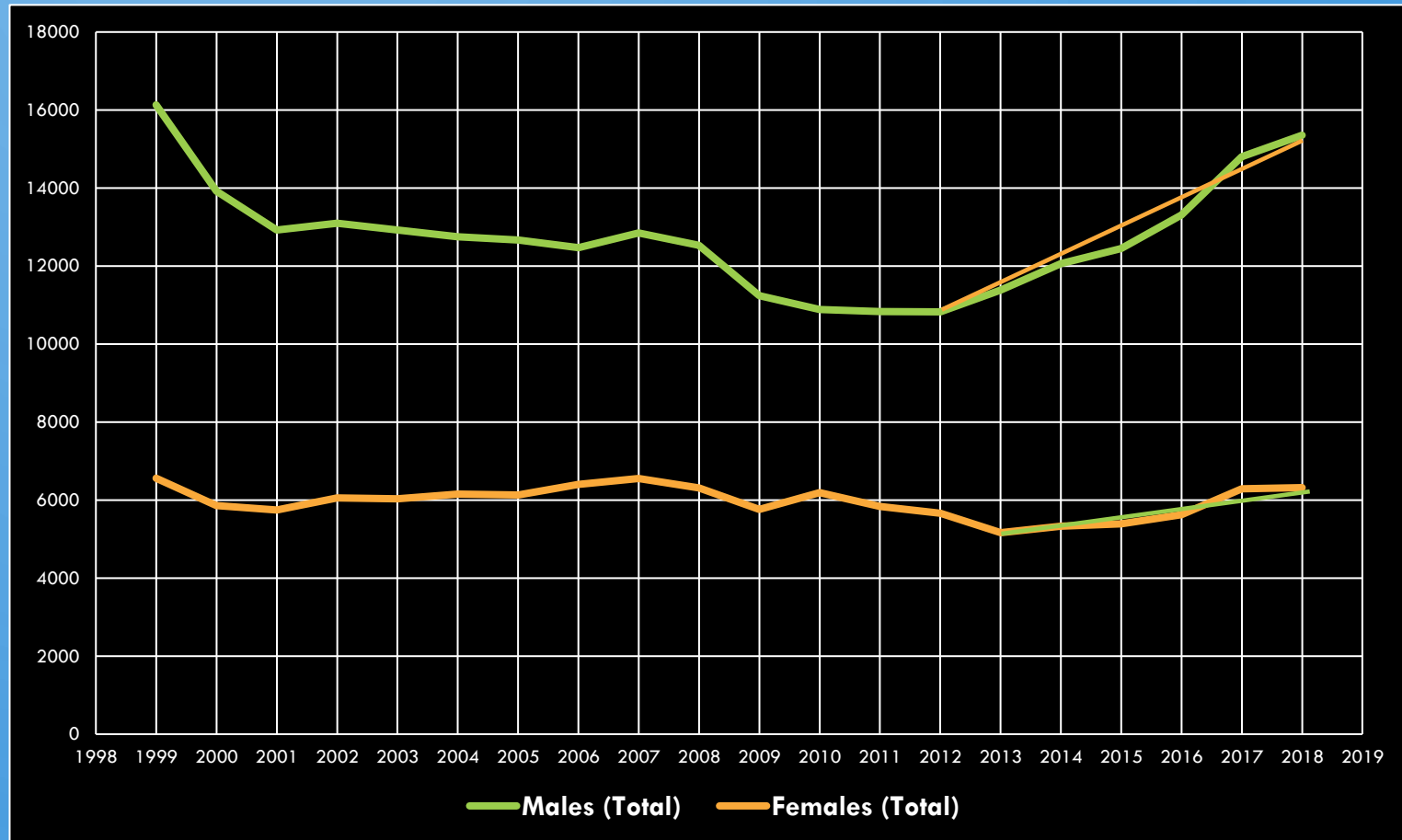
KEY REFERENCES

- **Bouchard, M. & Tremblay, P. (2005). Risks of arrests across drug markets: a capture-recapture analysis of "hidden" dealer and user population. *Journal of Drug Issues*, 733-754.**

- **Colasante E., Fabi F., Molinaro S., Rossi C., Scalia Tomba G. (2019), Updated indicators to evaluate harmful drug use, in particular poly-drug use, *Current Drug Research Reviews*, 11, 51-57.**

- Davoli M., Bargagli,A. M., Perucci C. A., Schifano P., Belleudi V., Hickman M., Salamina G., Diecidue R., Vigna-Taglianti F. Faggiano F., (2007). **Risk of fatal overdose during and after specialist drug treatment: the VEdeTTE study, a national multi-site prospective cohort study,** Addiction, 102 (12), 1954-1959. https://www.deepdyve.com/lp/wiley/risk-of-fatal-overdose-during-and-after-specialist-drug-treatment-the-MMg7M8FRGa

- **Mammone A., Fabi F., Colasante E., Siciliano V., Molinaro S., Kraus L. & Rossi C., (2014). New indicators to evaluate and to compare harmful drug use among adolescents in 38 European countries, *NORDIC STUDIES ON ALCOHOL AND DRUGS* VOL 31, 2014, 243-258.**

- **Mascioli F., Rossi C. (2015). Useful supply indicators for evaluating law enforcement efficacy, the size of the drug market and other issues, *in Proceedings of the Eighth ISSDP Conference*, 189-209, Universitalia di Onorati s.r.l., Rome.**

- **Rossi C. (2013) Monitoring the size and protagonists of the drug market: combining supply and demand data sources and estimates, *Drug Abuse Rev. 2013 Jun;6(2):122-129.***

- Van Amsterdam J., Opperhuizen A., Koeter M., & van den Brink W. (2010). Ranking the Harm of Alcohol, Tobacco and Illicit Drugs for the Individual and the Population. *European Addiction Research*; 16, 202-207.

- Van Amsterdam J., Nutt D. J., Phillips L. D., van den Brink W. (2015). European rating of drug harms, J. *Psychopharmacol*, 29(6), 655-660.

THANK YOU VERY MUCH FOR YOUR ATTENTION