A holistic and integrated approach is required for an adequate understanding of the drugs phenomenon; it is necessary to consider demand side data to fully understand supply side issues and vice versa.

HEROIN PDUS ARE INCREASING IN ITALY

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Topics

- Heroin PDUs’ health consequences and “possible” data sources.
- Treatments data set (SIND).
- Heroin PDUs’ prevalence estimates (time series).
- Supply (seizures) data set (time series).
- Time series comparison.
- Latency period analysis.
- Efficacy of supply-reduction interventions.
- Evidence of new epidemic behaviour.
- ESPAD (school surveys) evidence.
Data sources on PDUs health consequences

- Government treatment centres (Prevalence 300,000-350,000), available data set;
- Drug rehabilitation centres (Prevalence about 23,000), unavailable data set, unless collecting by survey;
- Low threshold services (Prevalence about 55,000), non-existent data set, unless collecting by survey;
- Health consequences PDUs prevalence = 400,000.
The 2015 previous prevalence for heroin has resulted much higher than the 2014 previous prevalence + 2014 incidence; this is because the previous 2015 data set was not timely updated to the incidence of the second part of 2014. The 2016 data set can be considered updated. However the trend is clear from incidence, that is 4% increasing.

Prevalence graph shows that treatment data cannot be used to estimate cocaine and cannabis PDUs prevalence: many users exit treatment too early. Cannabis and cocaine incidence increases only of 1% showing that cocaine and cannabis PDUs can be estimated “stable” in Italy.
Heroin PDUs’ prevalence estimate

- Calibration on treatments data:
- Calibration parameter derived by local capture-recapture analysis results $\frac{1}{2}$, as usually.
- This means that yearly $\frac{1}{2}$ of heroin PDUs contact government treatment centres and are included in the data set.
- Then the available treatments prevalence should be multiplied by 2.

- Heroin PDUs’ prevalence (2014) $= 283,940$ (7.2‰, age class 15-64).
- Heroin PDUs’ prevalence (2015) $= 414,842$ (10.6‰, age class 15-64, +47%).
Prevalence Time series

Heroin PDUs’ prevalence (rate‰ inhabitants in Italy, age class 15-64)
Supply data set time series

Recorded heroin seizures and moving average (three points moving average)
An approximate delay of three years of the increasing trend of PDUs' prevalence with respect to seizures and then to supply prevalence. This proves the increasing incidence of heroin due to supply increase. This is also evidenced by the “latency period” analysis.
Latency period Analysis

- Latency period for a drug user is the time between the initial use of the substance and the first treatment.
- If the incidence of first users increases, then the average latency period decreases.
- We observe exactly this for heroin treatments:
  - Average of latency period (2014) = 5.4 years,
  - Average of latency period (2015) = 4.5 years.
Decreasing efficacy of supply reduction interventions on heroin

- The official annual reports of the Italian Antimafia Agency estimate that seizures represent only 5%-10% of the supply available to consumers.

- A new efficacy-indicator has been defined recently as the ratio of the number of police denuntiatiions for dealing (wholesale or retail) to the estimate of drug market low-medium level manpower prevalence.

- If we apply this definition to heroin-contrasting police interventions, we find that their time series has a decreasing trend.
Decreasing efficacy: supply to consumers higher than seizures time series data?

\[ y = -0.0042x + 8.5484 \]

\[ R^2 = 0.7187 \]
A SECOND EPIDEMIC WAVE?

- The peak of the first wave of heroin use in Italy was in 1991, as shown in the estimated incidence curve. At that time, suitable dynamic models forecasted, in case of ineffective primary prevention, a second wave after a period (endemic phase) of about 25 years.

- This pattern can be observed in the treatments data and PDUs’ estimates.
Results, stratified by age group, have shown in 2015 a spread of heroin frequent use among youngers.

ESPAD® Italia survey data (http://www.espad.org/) has shown an increase of frequent use of heroin among adolescents since 2006.
References

THANK YOU VERY MUCH FOR YOUR ATTENTION

- Questions?
- Suggestions?