

Mo-SY-G2: Wastewater-based epidemiology (WBE) - from measuring illicit drug use towards understanding population health status - II

Mo-SY-G2.1

Wastewater-based Epidemiology to Track Down the Actual Use of New Psychoactive Substances : Challenges and Recommendations

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Background

New Psychoactive Substances (NPS) are substances that mimic psychoactive effects of illicit drugs like cocaine, cannabis and amphetamine and are produced to evade national and international drug control legislations by introducing slight modifications to chemical structures of controlled substances. NPS are easily acquired legally through online vendors and smart shops where they are sold under false labels with misleading information about their effects and safety. They are considered a growing problem in many communities and are responsible for numerous fatal intoxications. Detection of NPS is a challenge due to their rapid appearance in and out of the drug scene and due to the constantly increasing amount of new substances that appears on the drug market.

Objectives

In order to perform an evidence-based risk assessment of NPS, it is necessary to gather detailed information on the types and amounts of NPS that are used in the general population. Wastewater-based epidemiology, which analyses wastewater samples for the presence of biomarkers of NPS, is a promising approach to gain knowledge on the actual use of NPS. However, there exist several challenges that hampers the routine application of wastewater-based epidemiology for detection of NPS use:

- 1) Very little scientific information on the metabolic fate of NPS is available. Therefore, it is not always clear which biomarker (parent compound or metabolite) needs to be targeted in wastewater-based epidemiology studies.
- 2) If the use of NPS is limited to only a few individuals within a community, concentrations of the biomarker in wastewater will be too low to detect with the existing analytical methods.

This presentation gives an overview on the work that has been carried out so far regarding the detection of the actual use of NPS in the general population based on wastewater analysis, discusses the challenges and issues that still exist in this research field, and will provide some recommendations for future research directions.