The drug field is in a constant change. New psychoactive substances and their combinations are emerging locally and/or globally, using new patterns of ‘traditional’ licit or illicit drugs are appearing, and novel marketing strategies are being introduced. In order to prevent or minimise harm related to these new phenomena, detecting changes, recognising trends, and understanding the reasons are of utmost importance that requires data collection and analysis. The mission of EMCDDA is to provide factual, objective, reliable and comparable information on drugs and drug addiction to the public and policy makers in Europe.

The principal objective of the Early Warning System of EMCDDA is to collect and disseminate information on the appearance of new, potentially harmful psychoactive substances (i.e., those not covered by the 1961 and 1971 UN conventions) in Member States (EU Council Decision 2005/387/JHA). During the 20th century international drug regulatory options were devised for many harmful natural & (semi)synthetic drugs yet synthetic variants (designer drugs) not falling under the actual regulation often emerged (Fig. 1). Today, a paradigm shift seems to be occurring: new, pharmaco-toxicologically poorly characterised substances for non-medical use appear in an unprecedented speed and number. Initially, most of these substances are sold essentially without restriction (legal highs). Once they are identified, countries take appropriate, although not always effective, steps for their regulation (Fig. 2, Table 1).

**DESIGNER DRUGS** (1985)

Chemical analogues of controlled substances that produce effects similar to the illicit substances they mimic.

- ‘designed’ by slightly altering the chemical structure of an illicit drug to evade existing regulations
- selected from the scientific literature; previously unknown, new substances have been, until very recently, extremely rare: for decades mostly imitation, but recently innovation: designer drugs design – indicates the sophistication of unscrupulous chemists

**LEGAL HIGHS**

A wide range of unregulated products, incl. herbal mixtures & synthetic designer drugs, often aggressively advertised and marketed over the Internet and in special shops as incense, room odouriser, plant food, bath salt or research chemical
- often aggressively advertised and marketed over the Internet and in special shops as incense, room odouriser, plant food, bath salt or research chemical
- misleadingly labeled „not for human consumption”, though the plant mixes, powders, tablets or capsules are intended for smoking, snorting or oral ingestion
- due to innovative marketing strategies and rapidly changing compositions, suppliers can circumvent existing regulations

**Table 1. Life span of a ‘Legal High’**

<table>
<thead>
<tr>
<th>Year</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985</td>
<td>methoxethamine, 3-MeO-PCP, 3-MeO-PCE</td>
</tr>
<tr>
<td>1990</td>
<td>methylone, MDPV</td>
</tr>
<tr>
<td>2000</td>
<td>piperazinides, MPP, TCP, MDMA</td>
</tr>
<tr>
<td>2010</td>
<td>synthetic cannabinoids JWH-018, JWH-250, RCS-4, etc. (Spice-products)</td>
</tr>
</tbody>
</table>

**Figure 1. History of Designer Drugs (1920 – 2010)**

- morphin esters
- arylcyclohexylamines
- fentanyl
- phenethylamines
- phenylpiperidines
- tryptamines
- pipazinides
- synthetic cannabinoids JWH-018, JWH-250, RCS-4, etc. (Spice-products)
- cathanones
- arylcyclohexylamines
Once a new psychoactive substance is detected on the European market, Member States, Norway and candidate member countries submit information on the manufacture, traffic and use to the EMCDDA and Europol via their National Focal Points (NFPs) and Europol National Units. This information is evaluated by EMCDDA then promptly shared with all NFPs. EMCDDA’s database contains scientifically validated and up-to-date information over 110 new drugs reported between 2005–2010 (Fig. 3).

The intertwined history of the use and the regulation of psychoactive drugs goes back several millennia. Reflecting changes in technology and trade, the initially local/national control of drugs deemed most harmful was gradually replaced by an international drug control system during the 20th century. However, the rapid advances in science and communication (Internet), the globalisation of trade and the interactions of cultures are transforming the drug field and challenging this traditional control regime. While adhering to UN Conventions, countries are now introducing various additional national regulations to stop the escalation of the ‘designer drugs’/‘legal highs’ phenomenon (Table 1).

SUMMARY
Although epidemiological data are lacking the emergence and quick spread of chemically diverse groups of new psychoactive substances among vulnerable populations are alarming. The lack of expert knowledge complicates not only rigorous risk assessments but also rapid, adequate and effective legal responses challenging policy makers. Current tools to restrict, let alone prevent, the appearance and supply of such new drugs are limited, thus the importance of systematic collection, analysis and dissemination of information to aid the development of sensible prevention measures, demand reduction in particular, is vital. Clearly, international collaboration both on regional and global levels are needed.

DRUGS VIGILANCE

DISCLAIMER: The authors’ views expressed in this poster do not necessarily reflect those of the European Monitoring Centre for Drugs and Drug Addiction.