Pharmaceuticals and the Baltic Sea environment (current HELCOM framework)

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The Baltic Sea Action Plan about hazardous substances

The ecological objectives:
- Concentrations of hazardous substances close to natural levels;
- All fish safe to eat;
- Healthy wildlife;
- Radioactivity at pre-Chernobyl level.
Status report on pharmaceuticals

2013 HELCOM Ministerial Declaration: to collect information on pharmaceuticals and assess the status of contamination of pharmaceuticals and their degradation products in the marine environment;

Idea:
PA Hazards & HELCOM

Data are provided by:
Denmark, Estonia, Finland, Germany, Poland, Russia and Sweden

Data processing and analysis:
• HELCOM
• Policy Area Hazards of the EU Strategy for BSR

Report reviewing and editing of the content:
HELCOM PRESSURE (Reduction of Pressures from the Baltic Sea Catchment Area)
HELCOM State&Conservation (State of the Environment and Nature Conservation)
Reported measurements

The main pathway is through MWWTP (ca. 1800 tons/y)
Contamination of the Sea environment

The most frequently detected pharmaceuticals:
- **anti-inflammatory** - diclofenac, ibuprofen and paracetamol;
- **antimicrobial** – Sulfamethoxazole;
- **cardiovascular agents** - metoprolol, bisoprolol and sotalol;
- **central nervous system agents** - carbamazepine and primidone.

4600 measurements reported
Pharmaceuticals in the aquatic environment of the Baltic Sea region
A status report

http://www.helcom.fi/Lists/Publications/BSEP149.pdf
Knowledge gaps

- Sales and consumption in all BS countries;
- The use of pharmaceuticals in veterinary;
- Data on monitoring in MWWTP in all BS countries.
- Soil and ground water
- Environmental effects of pharmaceuticals.
- Sufficient methodology to detect medical substances in marine.

Etc.....
The HELCOM Correspondence Group on Pharmaceuticals - CG PHARMA

- provide scientific background for:
  
  **the regional environmental policy regarding** pharmaceutical substances in the environment;

  **regional actions** to minimise environmental impact caused by pharmaceutical contaminants.

- serve, in cooperation with PA Hazards of EUSBSR, as a platform for regional dialog on the various environmental aspects of the use of pharmaceutical substances in the Baltic Sea region.
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Diclofenac

This pre-core indicator and its threshold values are yet to be commonly agreed in HELCOM

GES-boundary 0.01 µg/L

EQS in marine waters - 0.005 µg/l (5 ng/L)
Diclofenac

This pre-core indicator also includes

LOADS:

• Sales
• Waste water treatment plants (WWTPs)
• Pathways – rivers

Baltic Sea Environment:

• Water and sediments
• Biota

Data call to update the indicator diclofenac has been agreed by PRESSURE 7-2017 and S&C 7-2017
Compilation of data on the use of pharmaceuticals in veterinary.

05.2018-09.2018 - Organization of the regional survey of the data availability in HELCOM countries.

Discussion on utilizing the data together with other information on emission of pharmaceuticals to assess the load

Compilation of comprehensive data on pharmaceutical substances in the effluents of WWTP to evaluate input to the fresh water and marine environment.

HELCOM to organize a call for data as a part of HELCOM activity on micropollutants in WWTP effluents. The results are expected in spring 2018.

HELCOM and PA Hazards of the EUSBSR to organize a political dialog on the problem and regional tools to enforce implementation of the measures.

Compilation of information on pharmaceutical waste management, promotion and advancing of “take back” systems for pharmaceuticals.

HELCOM to discuss the suggestion with PA Hazards Baltic Sea Pharma platform to promote the most environmentally friendly practices.
THANK YOU

for cooperation for the sake of the healthy Baltic Sea