Influencing stakeholder’s behaviour regarding pharmaceuticals in the aquatic environment

Dr. Issa Nafo (Emschergenossenschaft, Essen, Germany)
Workshop on pharmaceuticals in the environment
June 21, 2017, Inverness
EMSCHERGENOSSENSCHAFT / LIPPEVERBAND
Public water associations for more than a hundred years
INTEGRATED WATER MANAGEMENT AROUND THE WATER CYCLE

- Renaturation
- Flood protection
- Waste disposal
- Water discharge
- Stormwater management
- River maintenance
- Waste water treatment
- Polder management
SOURCES AND ROUTES OF PHARMACEUTICALS INTO THE WATER CIRCLE
OUR ADVANCED TREATMENT FACILITIES FOR THE ELIMINATION MICROPOLLUTANTS R ADVANCED TREATMENT FACILITIES FOR THE ELIMINATION MICROPOLLUTANTS

Investigations on technologies for the elimination of micropollutants at large-scale
CONSEQUENCES OF THE IMPLEMENTATION OF ADVANCED TREATMENT TECHNOLOGIES

No total removal of all micropollutants by advanced wastewater treatment!

- Increase of Costs over 20% (and more)
- Increase of Energy Consumption over 30% (and more)
- Potential Conflict with Climate Protection Strategies?
SOME OPTIONS TO REDUCE PHARMACEUTICALS IN WATERS

Incentives for substitution, Eco-classification, Education of stakeholders

Change of behaviour, New therapy concepts, Production of environmental-friendly substances, local wastewater treatment

Influencing Stakeholder’s behaviour

Advanced wastewater treatment end of pipe

Best agricultural practice

Proper disposal of unused medicines

Advanced drinking water purification
CASE STUDY DÜLMEN
Target groups and objectives

Medical and pharmaceutical professionals
- 100 doctors and clinicians
- 11 pharmacies
- 3 hospitals
- Nursing homes

Community-wide
- 19,900 households
- 47,000 inhabitants

Schools
- 7,000 pupils and students

- Raise of awareness
- Change of prescription and dispensing habits

- Raise of awareness
- Change of medicine consumption, use and disposal habits

- Raise of awareness
- Disseminator / catalysts for awareness raising on the issue inside and outside the school walls
CASE STUDY DÜLMEN
- BOARD OF SUPPORTERS -

Chairman of the City’s Environment Committee
Representative of supervisory authority
CEO of Lippeverband
Managing Director of Clinics
Mayor of the City
Managing Director of nursing homes
Representative of the city council
Representative of sport clubs
Representative of GPs
Representative of pharmacists
Managing Director of Water supply company
Approach of the ‘Case Study Dümen’

Survey to assess attitudes and behaviour patterns for medicine use and disposal before public awareness campaigns

Survey to assess attitudes and behaviour patterns (of doctors and pharmacists) for medicine prescription and dispensing.

Information and education campaigns for medical and pharmaceutical professionals.

Start of education project in schools

Survey to assess attitudes and behaviour patterns for medicine use and disposal: Evaluation of possible effects of the campaigns

Jan-Feb ’13

Okt-Nov ’13

June ’14

Nov ’14

Dez ’15

Awareness campaigns
SURVEYS BEFORE THE AWARENESS RAISING ACTIVITIES
Some policy pointers (1) -

- The **protection of the aquatic environment is of high value** for the population.

- Even though the majority of the respondents have heard in general about pharmaceutical residues in waters, there is a **lack of awareness** about the relevance of the topic in the local situation.

- **OTC medicines make up an important part** of pharmaceutical pollution in waters. However, there is apparently **good recognition that drug treatment for headaches and colds is not always necessary**.

- Leftover medicines are **disposed of via wastewater at least occasionally apparently due to the lack of information** about the possible impacts on waters. **Information about ‘good disposal practices’ of leftover medicines, might usefully address this**.
SURVEYS BEFORE THE AWARENESS RAISING ACTIVITIES
Some policy pointers (2)

There is considerable support for the prescription and promotion of ‘environmentally friendly drugs’ amongst GPs and pharmacists, but not enough information is available to professionals.

Advice of pharmacists and doctors is perceived in a positive way by the population and doctors and pharmacists can play a key role for the change of patient behaviour.

Awareness raising activities might usefully aim at promoting environmentally friendly alternatives recommended by experts such as doctors and pharmacists.

There is a demand for non-drug treatment alternatives by patients. Such alternatives are proposed in some cases by the medical professionals. Advice on non-drug alternatives should be enhanced in appropriate cases.
Communicating the message that **everyone can participate in the success** of the case study in order to prevent water pollution by medicines, because even the smallest contribution helps.

Addressing the public as a local community that committed to actively **protect and preserve the good local water quality** for long-term:

- ‘**It is worth to act today in order to prevent possible negative effects for the aquatic environment tomorrow!**’
- ‘**To ensure that our water remains without no side effects!**’

- **Never dispose of** liquid and solid medicines leftover via the sink or the toilet, but in the trash (local trash is burnt).
- **Inform your doctor or pharmacist** about your storage and leftover that may be sufficient for an upcoming treatment. Ask for ‘environmentally friendly’ alternatives.
- **Reduce medicine leftover** by a wise purchase. Select the smallest package size sufficient for a successful therapy.
RAISING AWARENESS IN THE CITY OF DÜLMEN
Involvement of pharmacists

Frühjahrsputz für Hausapotheke

Nächste Woche Beratung in allen Dülmen Apotheken

‘Spring cleaning in the medicine chest’

In the framework of the Trace妫e-Projects, the Lippe-Verband is in liaison with the city of Dülmen and Pharmacies since 2014 to make the livery of medicines more transparent. Many people do not know exactly how their own medicine routine is working and why it is done this way. Therefore it is important to take the time to go through the medicine chest during the spring with the help of the pharmacists. This is repeated every year since 2014!

Source: Dülmer Zeitung (25.03.2014)
RAISING AWARENESS
Involvement of GPs -

Ein Flyer zum Rezept

Ärztenetz und Lippeverband starten Projektwochen zum Thema Medikamenten-Entsorgung

Von Kristina Kerstan

DÜLMEN. Den blauen Flyer werde er auf seinen Schreibtisch legen, hat sich Dr. Martin Olbrich vorgenommen, um ihn direkt bei der Hand zu haben im Gespräch mit Patienten. Und auch am Empfang werden die Falblätter liegen, im Prinzip wird es bei jedem Rezept einen Flyer geben, besonders der Vertreter des Dülmer Ärztenetzes.

„Man kann Medikamente ruhigen Gewissens in den Hausmüll geben.“ Dr. Martin Olbrich

Denn die Patienten dürfen zu informieren und dafür zu sensibilisieren, wie man sich ruhigen Gewissens in den Hausmüll geben.“


Wir wollen bewusst machen, dass man nicht zur Apotheke gehen muss, um...
From initially 4 schools and a youth group for nature conservation ... to a total of 10 (of the 13) schools in Dülmen, including primary schools, at the end of the project!

Source: Dülmener Zeitung (13.12.2013)
RAISING AWARENESS
Involvement of schools

The making of …
Cinema spot by pupils and student
Marienschule, class 10

https://www.youtube.com/watch?v=SqUIM_ZuGXg&feature=youtu.be

Cinema spot was shown from 26.02.- 26.03.2015
in 3 movie theatres and displayed again in Aug-Sept 2015!
Writing a thriller on the topic of medicines in the aquatic environment

45 pupils and students, 12-18 year old

4 groups and 4 writing weeks (‘baton change’ after every writing week)

Supervision and guidance by two professionals

Thriller is available in bookshops starting May 30th, 2015
RAISING AWARENESS
Involvement of schools

Mini book for primary schools
available in 8 languages
About 77% of the respondents had heard of the individual awareness campaigns; 71% of them took notice of at least one of the printed information materials; 20% of them actively participated in at least one of the campaigns.

The fraction of the respondents in Dülmen with knowledge about medicines residues in the aquatic environment increased by 19%.

20% more respondents used the proper disposal way of leftover medicines and 6% less respondents used an improper disposal option in comparison to the situation before awareness campaigns.

About 34% of the respondents stated they had changed their own habit regarding the disposal of leftover medicines due to the awareness campaigns.

16% of the interviewees claimed to have changed their own behaviour regarding medicines consumption due to the awareness campaigns in the Dülmen.
### SUMMARY AND RECOMMENDATIONS

- Different group-specific activities were carried out to sensitize consumers, pupils and students, GPs and pharmacists on the issue of medicines in waters.

- The awareness campaigns were based on a communication concept that took into account the lack of knowledge about the issue and the perception of the “problem” by the target groups.

- The activities conducted in the case study to raise awareness of the issue were effective.

- Pupils and students are good catalysts for awareness raising on the issue inside and outside the school walls.

- Medical and pharmaceutical professionals play a key role for the change of consumers’ and patients’ behaviour regarding medicines use and disposal.

- A stakeholder analysis prior to the awareness campaigns and the involvement of representatives of the key stakeholder groups in the design of targeted awareness campaign modules is essential for the success.

- Activities for awareness raising should focus on clear messages without using controversy between environment and health.
Common “Declaration of Intent” of the members of the board of supporters for the continuation of the awareness activities after the end of the noPILLS project!
NEW PROJECT IN THE CITY OF ESSEN:
Influencing stakeholder’s behaviour regarding pharmaceuticals in the environment (2017 to 2018)

The challenge is to design and conduct awareness raising campaigns for a big city with:
600,000 Inhabitants, 175 Schools, 145 Pharmacies, 10 Hospitals, > 1000 Doctors & GPs
Thank you for your attention!

http://pills-project.eu/

http://www.no-pills.eu/
## CONTACT

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