



Antibiotic Resistance in Wastewater

Transmission Risks for Employees and Residents
around Wastewater Treatment Plants

NEWSLETTER

Volume 2 | March 2020

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A MESSAGE FROM THE COORDINATION

COLLABORATION!

A very important pillar of the JPI AMR AWARE project is the collaboration with a large number of treatment plants around Europe that clean up our wastewater. In fact it is the people at those wastewater treatment facilities that enable us to answer whether being near wastewater makes you resistant to antibiotics. In this second Newsletter we like to give you some insight into how our investigators in Germany, Romania and the Netherlands interacted with the



wastewater workers and with residents. How was information on the project given and how it was received. Sometimes some reluctance had to be overcome but many times interactions were inspiring. Data based on findings from interviews but also on bacteria that carry resistance to antibiotics, their genes and the antibiotics in the water and in the air have been

collected. Sample and data analyses, and model developments are ongoing which will be presented next time. If you want to find out more about our study, go to our website: www.aware.study.eu.

Enjoy your read!

Prof. Dr. Ana Maria de Roda Husman

Study Coordination



PROGRESS MEETING



AWARE project members at the RIVM (Bucharest, Romania)

Top row, left to right: Laura Popa (PhD), Dr. Marcela Popa, Dr. Luminița Măruțescu, Daloha Rodríguez-Molina, Dr. Hetty Blaak, P. Mang, Dr. Laura Wengenroth, Dr. Ilda Barbu, Dr. Irina Gheorghe, Dr. Ionela Sarbu
Bottom row, left to right: Dr. Heike Schmitt, Prof. Dr. Ana Maria de Roda Husman, Prof. Dr. Carmen Chifiriuc

Bucharest, May 2019

This year's annual progress meeting for AWARE took place at the Research Institute of the University of Bucharest (ICUB) in Romania. Thirteen of our team members from three participating countries met in Bucharest to exchange information about our progress and to explore ideas for our next steps into the project. The Swedish team joined in via video conference. Additionally, Ms. Rodríguez-Molina from the German team, received a two-day training in the water filtration procedures performed by the Romanian team, specifically from Dr. Luminita.

RECRUITMENT STRATEGIES

Collaboration of the RIVM with the Dutch water boards



WWTP visit 03/2020

Source: Dr. Hetty Blaak, Dr. Heike Schmitt

By March 2020, our Dutch part of the AWARE team had given 18 presentations in 10 out of 12 water boards to involve wastewater treatment plant (WWTP) staff in our study. We kindly received the support from the remaining two water boards to internally inform their employees about the study. We selected one to three WWTPs per water board for sampling. In the Netherlands, we only requested collaboration of the WWTP workers and unexposed residents. For enlisting unexposed residents, we counted

on the kind cooperation of a general practitioner within a 2-5 km radius from each selected WWTP. Then, we randomly selected 500 addresses at a 500m radius around each of these physicians' practices, and we contacted all residents with a main residence at these addresses that were older than 16 years of age. We sent 8500 invitation letters in total, inviting 14,000 people to participate in the AWARE study. The total participation was, on average, 9%.

AT A GLANCE

Main recruitment strategies: presentations, invitation letters

14.000 people contacted



Collaboration of the ICUB with the Romanian WWTP's

The Romanian part of the AWARE team used two different strategies to recruit participants. We first contacted WWTPs' managers through a formal letter containing information about the project and the invitation to join the AWARE study. After the WWTPs' managers accepted our invitation to participate, they offered all their support in talking and convincing employees to participate and helped us organize several short information sessions at the WWTPs for the recruitment of participants. Despite all these, the majority of the WWTP employees were at first very suspicious of the project and we needed to talk to



Romanian AWARE Team

Top row, left to right: Irina Gheorghe, Laura Popa (PhD), Grațîela Grădișteanu, Ilda Barbu, Elena Dragu, Maria Stoica
Bottom row, left to right: Carmen Mariana Chifiriuc, Mădălina Gaboreanu, Luminița Măruțescu, Marcela Popa

AT A GLANCE

Main recruitment strategies: door-to-door, promotional activities in public places

1127 people contacted

them several

times to engage them in participation. Second, distant and nearby residents of the plants were invited to join the study. Therefore, our team members and technicians travelled in groups of two to six different locations in Romania and used the door-to-door approach. We also talked to potential participants in public places like streets, parks and markets. We distributed information sheets with details about who we are, the objectives of the AWARE project, and how they can participate. We also informed them about the benefits of their participation and about data protection issues. They were more responsive to the participation in the AWARE project compared to the WWTP workers.

Collaboration of the LMU with the German WWTP's.

To find participants for the AWARE study in Germany, our team held presentations about the study in selected wastewater treatment plants (WWTPs) in upper Bavaria. During those presentations, we informed the workers about the study and explained to them that we will collect water samples from the plant and air samples from up to five workers. We invited workers of the WWTPs as well as nearby and distant residents of the plants to participate via letters sent by mail. Nearby residents should live up to 300 meters from the plant, distant residents had to live



more than two kilometers from the plant and both groups should be between 16 and 65 years old. We received the information needed from the local registration offices. In total, residents and WWTP workers from four towns took part in the study. After we sent the first invitations, we continued with mailing personalized letters to our potential participants. We hoped to increase response by handwriting names and addresses on envelopes. However, we also sent letters without hand-written names to compare which method would generate more participants. In addition, some local newspapers wrote articles about AWARE inviting residents to take part in the study. Parallel to that, we made advertisements about the study on our Facebook page and posted it in groups like notice boards or job advertisements. Furthermore, we provided local physicians with flyers about the AWARE study to hand to their patients. In one of the four towns, the local registration office did not provide us with any information, so we went from door to door to ask people if they would like to participate in our study. In total, we contacted around 4000 people in all four towns.



WWTP visit Germany: collecting water samples
Source: Daloha Rodríguez-Molina



German AWARE Team

Top row, left to right: Dr. Tobias Weinmann, Marieke Behlen, P. Mang, Kim Weiszhar

Bottom row, left to right: Daloha Rodríguez-Molina, Sonja Strieker, Nicole Stasch

Missing: Dr. Laura Wengenroth, Prof. Dr. Katja Radon, Nicole Schäfer

AT A GLANCE

Main recruitment strategies: presentations, letters, advertisement in newspapers and Facebook, door-to-door

4000 people contacted

NEXT STEPS IN THE AWARE STUDY

- Metagenomic analysis and PCR
- Finishing the end study reports for each country
- Generating Publications

AWARE (Antibiotic Resistance in Wastewater: Transmission Risks for Employees and Residents around Wastewater Treatment Plants) is supported by the European Commission (JPI-EC-AMR ERA-Net Cofund grant no 681055).



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