

An aerial photograph of Aarhus University Hospital (AUH) in Denmark. The image shows a large complex of buildings with various colored roofs (green, blue, grey) and surrounding greenery. A red and white ambulance helicopter is in the process of landing on a helipad in the upper right corner. The text is overlaid on the center of the image.

HCWH webinar
Neutralizing
Antibiotic Resistant Bacteria (ARB)

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Neutralizing Antibiotic Resistant Bacteria (ARB)

- Background
- Injection of PerAcetic Acid (PAA)
- Cleaning requirements
- Laboratory testing
- Testing in the sewer
- Conclusions



Two scenarios regarding waste water treatment in Denmark

- Local treatment of all wastewater at the hospital, because the hospital is a point source (legislation).
- Central treatment at the local WWTP
 - Demand for disinfection of wastewater before it leaves the hospital premises due to higher concentrations of ARB.



PAA has shown it's ability to neutralize bacteria

- Need for mapping on the effect when injected directly into untreated wastewater, since no studies on this have been carried out before.
- Both laboratory and field testings have been conducted.

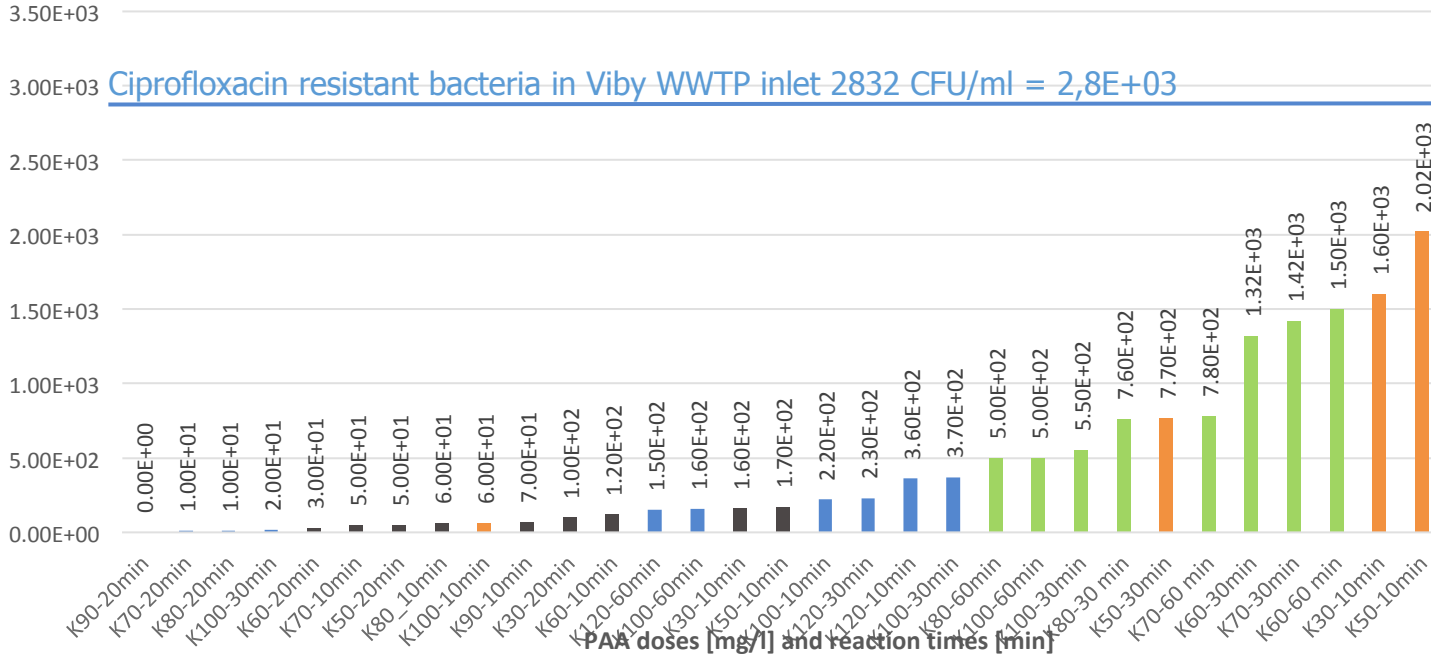


No regulation regarding Antibiotic Resistant Bacteria at the moment

- Cleaning requirements based on a dialogue with the local municipality
- Focus on ciprofloxacin resistant bacteria, since this is widely used on and off the hospital
- Requirements set at measured level of ARB in municipal wastewater in Aarhus not influenced by hospital wastewater
- This level of ARB must be reached, before wastewater leaves the hospital premises



Tests on untreated wastewater from AUH conducted in laboratory



Testing site



Results from field testing

- Injection of peracetic acid in different doses.
- Results from the field testing confirm that PAA neutralizes the ARB as proven in the laboratory.
- Short reaction times needed. Hence the needed concentration of PAA goes up. Concentrations between 83 and 115 mg/l PAA needed at AUH.



It works..!

- ARB can be neutralized locally at the hospital by injection of PAA directly in the wastewater
- The aim with the project was a proof of concept. Hence it didn't include mapping of correspondence between the SS and ARB in the wastewater and the amount of needed PAA for neutralization
- Local tests on other sites will be needed before implementation.



Disinfection of hospital wastewater

Prepared for
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Thank you for listening

**Questions are welcome,
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