Réseau Microbiologie des matrices résiduaires urbaines et santé

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Dernières actualités

Global wastewater surveillance network to help prevent next pandemic (Imperial, 20/06/25)

EU-WISH at WaterMicro2025: Showcasing expertise and strengthening connections (EU-WISH, 23/06/25)

Wastewater-based epidemiological surveillance - Yearly report – 2024 (Sciensano, 06/25)

À la recherche du virus de la rougeole dans les eaux usées (Radio-Canada, 16/07/25)

De nouvelles perspectives grâce au monitoring des eaux usées (eawag,17/07/25)

AI and wastewater surveillance unite to detect emerging viruses (News Medical Life Sciences, 21/07/25)

Wastewater surveillance for detecting COVID-19 offers early warning and cost savings (News medical Life Sciences, 30/07/25)

Economic evaluation of wastewater surveillance for COVID-19 testing in long-term care settings (The Microbiologist, 31/07/25)

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Dernières références bibliographiques

Epidémiologie des eaux usées :

Zheng, Q. (2025). Wastewater-based epidemiology in China: A decade of advancements and challenges. *Journal of Hazardous Materials Advances,* 19, 100792. Abstract >>

Wood, A.J. (2025). Improving wastewater-based epidemiology through strategic placement of samplers. *arXiv* 2506.14331. Abstract >>

Oliveira, M. (2025). Integrated environmental surveillance: the role of wastewater, air, and surface microbiomes in global health security. *Water Emerging Contaminants & Nanoplastics,* 4:2, 11. Abstract >>

Torremorell, M. (2025). Environmental sampling as a means to identify threats at the interface of people, animals and the environment. *One Health,* 20, 100793. Abstract >>

Pang, J. (2025). Wastewater surveillance for early pathogen detection in Asia. *VeriXiv,* 2, 153. Abstract >>

Hamant, R. (2025). Good Ethical and Laboratory Practices for Wastewater Surveillance. *Water Environment Research,* 97:6, e70112. Abstract >>

Alshehri, B. (2025). Monitoring Multiple Sexually Transmitted Pathogens Through Wastewater Surveillance. *Pathogens,* 14:6, 562. Abstract >>

Henkens, N. (2025). Wastewater-Based Epidemiology: A Complementary Approach to Future Pandemic Preparedness. *University of Groningen (Netherlands).* Abstract >>

van der Drift, A.-M.R. (2025). Wastewater surveillance studies on pathogens and their use in public health decision-making: a scoping review. *Science of The Total Environment,* 993, 179982. Abstract >>

Pagsuyoin, S. (2025). Coupling wastewater-based epidemiology with data-driven machine learning for managing public health risks. *Risk Analysis,* in press. Abstract >>

D'Aoust, P.M. (2025). Why wastewater-based epidemiology must tackle noncommunicable diseases. *Current Medical Research and Opinion,* in press. Abstract >>

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Chen, E. (2025). A transferable machine learning model for real-time forecast of epidemic dynamics and pre-trigger event warning. *AI in Civil Engineering,* 4:1, 18. Abstract >>

Liu, P. (2025). Process Limit of Detection for Salmonella Typhi, Vibrio cholerae, Rotavirus, and SARS-CoV-2 in Surface Water and Wastewater. *Water,* 17:14, 2077. Abstract >>

Wallrafen-Sam, K. (2025). EPH58 Evaluating the Cost-Effectiveness of Wastewater-Based Disease Surveillance. *Value in Health,* 28:6, S171. Abstract >>

Elliss, H. (2025). Flow-driven biomarker movement in gravitational sewers for wastewater-based epidemiology and public health monitoring. *Water Research,* in press. Abstract >>

Quireyns, M. (2025). Comparing the applicability of de facto population markers for spatiotemporal trend analysis in wastewater-based epidemiology. *Journal of Hazardous Materials,* 496, 139332. Abstract >>

Raymond, S. (2025). How local health departments use wastewater surveillance data for public health planning and intervention in New York State. *BMC Public Health,* 25:1, 2842. Abstract >>

Huang, D. (2025). Towards ultra-sensitive and rapid near-source wastewater-based epidemiology. *Nature Communications,* 16:1, 8158. Abstract >>

Psomopoulos, F. (2025). Toward a unified approach: Considerations for bioinformatic and sequencing activities & data in wastewater surveillance of biologic public health threats. *Open Research Europe,* 5, 267. Abstract >>

West, R. (2025). Development of a New Framework to Address Public Health Ethical Considerations in Wastewater Surveillance. *Journal of Public Health Management and Practice,* 31:4. Abstract >>

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SARS-CoV-2 :

Barber, C.A. (2025). Application of joinpoint regression to SARS-CoV-2 wastewater-based epidemiology in Las Vegas, Nevada, USA. *Epidemiology and Infection,* 153, e68. Abstract >>

Wen, J. (2025). A Stakeholder-Engaged Economic Evaluation of Site-Specific Wastewater-Based Surveillance for COVID-19 Outbreak Control in Long-Term Care Facilities. *University of Alberta*. Abstract >>

Oswald, C. (2025). Identification of sentinel upstream community sites for wastewater surveillance of SARS-CoV-2 in a large urban area. *Water Research,* 284, 123958. Abstract >>

Yusuf, W. (2025). COVID-19 Hospital Admissions and Wastewater Data in Canada: A Statistical Analysis. *Research Square,* 13 Jun, 2025. Abstract >>

Pappu, A.R. (2025). Wastewater-based surveillance data to determine the COVID-19 trends in communities with low population. *Data in Brief,* 61, 111756. Abstract >>

Gashegu, M. (2025). Early detection of SARS-CoV-2 variants using genomic surveillance: insights from aircraft wastewater and nasal swabs at Kigali International Airport, Rwanda. *IJID Regions,* 16, 100678. Abstract >>

Waheed, Y. (2025). Editorial: COVID-19 crisis creates opportunity towards global monitoring & surveillance. *Frontiers in Cellular and Infection Microbiology,* 15. Abstract >>

Suarez, R. (2025). Detecting SARS-CoV-2 cryptic lineages using publicly available whole genome wastewater sequencing data. *PLOS Pathogens,* 21:6, e1012850. Abstract >>

Dehghan Banadaki, M. (2025). Enabling SARS-CoV-2 Wastewater Surveillance Using an Integrated Microfluidic Chip. *Analytical Chemistry,* 97:25, 13140-13150. Abstract >>

Annavajhala Medini, K. (2025). Hospital wastewater surveillance for SARS-CoV-2 identifies intra-hospital dynamics of viral transmission and evolution. *Applied and Environmental Microbiology,* 0:0, e00501-00525. Abstract >>

Kabir, M.P. (2025). Passive sampling for genomic surveillance of SARS-CoV-2 in wastewater resource recovery facility: Insights for pandemic preparedness. *Water Research,* 285, 124071. Abstract >>

Troendle, E.P. (2025). Combining analysis of individual and wastewater whole genome sequencing improves SARS-CoV-2 surveillance. *Water Research,* 284, 123953. Abstract >>

Contact : Sophie Marchal-Mauer (sophie.marchal-mauer@anses.fr)
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Lamm, E.D. (2025). Inclusion of Physical–Chemical Water Quality Measurements Can Improve Associations between SARS-CoV-2 RNA Levels in Wastewater and COVID-19 Cases within Smaller Sewersheds. *Journal of Environmental Engineering,* 151:9, 04025049. Abstract >>

Wang, F. (2025). Droplet digital RT-PCR method for SARS-CoV-2 variants detection in clinical and wastewater samples. *Frontiers in Microbiology,* 16. Abstract >>

Kabir, M.P. (2025). Optimization of the Primary Sludge Processing Method for Wastewater Genomic Surveillance of SARS-CoV-2. *ACS ES&T Water,* in press. Abstract >>

Nag, A. (2025). Wastewater-Based Epidemiology Monitoring for Epidemics in India Through a Bi-Phase Detection Approach. *Preprints,* 2025062491. Abstract >>

Ozawa, H. (2025). Optimizing solid-based methods for SARS-CoV-2 detection in wastewater: addressing PCR inhibition and variant challenges. *Applied and Environmental Microbiology,* in press. Abstract >>

Ozawa, H. (2025). Optimizing solid-based methods for SARS-CoV-2 detection in wastewater: addressing PCR inhibition and variant challenges. *Applied and Environmental Microbiology,* in press. Abstract >>

Elício Porfiro Sales Gonçalves da Silva, V. (2025). Long-term spatiotemporal SARS-CoV-2 dynamics in wastewater in areas with diverse vulnerabilities. *Journal of Water Process Engineering,* 76, 108231. Abstract >>

Amirali, A. (2025). Long term assessment of SARS-CoV-2 in wastewater and the transition to evaluate additional viral targets. *Science of The Total Environment,* 995, 180096. Abstract >>

Silva-Magaña, M.A. (2025). Temporal Dynamics of SARS-CoV-2 Detection in Wastewater and Population Infection Trends in Mexico City. *Frontiers in Public Health,* 13, 1640581. Abstract >>

Ren, W. (2025). Examining the Persistence of Coronavirus in Septage. *ACS ES&T Water,* in press. Abstract >>

Zhuang, X. (2025). Early detection of emerging SARS-CoV-2 Variants from wastewater through genome sequencing and machine learning. *Nature Communications,* 16:1, 6272. Abstract >>

Hidalgo, K.S. (2025). Detection of SARS-CoV-2 in Wastewater: Implications for Public Health and Climate Resilience. *Health,* 17:7, 888-901. Abstract >>

Ahmed, T. (2025). Advancing Wastewater-Based Epidemiology through Curricular Innovation. *ACS ES&T Water,* in press. Abstract >>

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Lamm, E.D. (2025). Inclusion of Physical Chemical Water Quality Measurements Can Improve Associations between SARS-CoV-2 RNA Levels in Wastewater and COVID-19 Cases within Smaller Sewersheds. *Journal of Environmental Engineering,* 151:9, 04025049. Abstract >>

Warns, M.M. (2025). Data Analysis and Modeling for Transitioning Between Laboratory Methods for Detecting SARS-CoV-2 in Wastewater. *arXiv,* 2202.03015. Abstract >>

Hui, Q. (2025). CRISPR/Cas-enabled paper microfluidic device to detect SARS-CoV-2 and its variants for wastewater-based epidemiology. *Cranfield University (United Kingdom).* Abstract >>

Mainardi, P.H. (2025). Detecting and disinfecting SARS-CoV-2 in wastewater: techniques, challenges, and strategies. *European Journal of Biological Research,* 15:3, 86-120. Abstract >>

Lindner, S.D. (2025). Estimating unreported SARS-CoV-2 infections in Austria using wastewater-based epidemiology. *Heliyon,* 11:13, e43748. Abstract >>

Ni, K. (9900). A Scoping Review on the Ethics of Wastewater Surveillance for COVID-19. *Journal of Public Health Management and Practice,* in press. Abstract >>

Yancey, M.M. (2025). Virginia Wastewater Surveillance: Can SARS-CoV-2 Once-Weekly Sampling Predict Imminent Rises in Community COVID-19 Disease Burden? *Virginia Tech University*, 224 p. Abstract >>

Servello, D. (2025). Identification of Statewide Hotspots for Respiratory Disease Targets Using Wastewater Monitoring Data. *Tropical Medicine and Infectious Disease,* 10:9, 241. Abstract >>

Radermacher, J. (2025). Wastewater as an early indicator for short-term forecasting COVID-19 hospitalization in Germany. *BMC Public Health,* 25:1, 2910. Abstract >>

Chik, A.H.S. (2025). One for all and all for one health: Harmonizing SARS-CoV-2 wastewater surveillance results across a laboratory network. *Science of The Total Environment,* 999, 180200. Abstract >>

Green, A. (2025). Variabilities in N2 and E Gene Concentrations in a SARS-CoV-2 Wastewater Multiplex Assay. *Microorganisms,* 13:8, 1862. Abstract >>

Satyafebrianti, K.C. (2025). Wastewater Surveillance of SARS-CoV-2 as Monitoring Tool for COVID-19: A Literature Review. *Journal of Diverse Medical Research: Medicosphere,* 2:8, 406-414. Abstract >>

Green, A. (2025). Variabilities in N2 and E Gene Concentrations in a SARS-CoV-2 Wastewater Multiplex Assay. *Microorganisms,* 13:8, 1862. Abstract >>

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De Muylder, G. (2025). Respi-Radar: a tool to monitor respiratory infections, Belgium, winter season 2023/24. *Eurosurveillance,* 30:35, 2400756. Abstract >>

Autres pathogènes d'intérêt :

Roman, V. (2025). Tracking wild-type measles virus in wastewater using multiplex RT-dPCR, A novel tool for measles surveillance. *Water Research,* 287, 124379. Abstract >>

Alford, B.S. (2025). Monitoring Antimicrobial Resistance in Care Homes Through Wastewater Surveillance – A Scoping Review. *Journal of Hospital Infection,* in press. Abstract >>

Balcázar, J.L. (2025). Wastewater-Based Epidemiology as a Complementary Tool for Antimicrobial Resistance Surveillance: Overcoming Barriers to Integration. *BioEssays,* in press. Abstract >>

Tang, Y. (2025). Occurrence of antibiotics and antibiotic-resistant bacteria in a Japanese city revealed by wastewater surveillance in the sewer system. *Water Research,* 285, 124136. Abstract >>

D'Aoust, P.M. (2025). Why wastewater-based epidemiology must tackle noncommunicable diseases. *Current Medical Research and Opinion,* in press. Abstract >>

Punch, R. (2025). The surveillance of antimicrobial resistance in wastewater from a one health perspective: A global scoping and temporal review (2014–2024). *One Health,* in press, 101139. Abstract >>

Adeoye, I. (2025). How does the sewer microbiome impact wastewater surveillance for antibiotic resistance? *Water Research X,* in press. Abstract >>

Birch, O.N. (2025). Wastewater Surveillance for Group A Streptococcus pyogenes in a Small City. *Pathogens,* 14:7, 658. Abstract >>

Guzman, H.P. (2025). Wastewater Surveillance of Salmonella enterica, Campylobacter jejuni, and Norovirus Reveals Potential Underreporting of Disease Cases in the Tri-county Detroit Area, Michigan. *ACS ES&T Water,* in press. Abstract >>

Li, X. (2025). Wastewater-based and Environmental Surveillance of Infectious Diseases and Antimicrobial Resistance. *University of Michigan*, 163 p. Abstract >>

Malcom, H.B. (2025). Use of Wastewater to Monitor Antimicrobial Resistance Trends in Communities and Implications for Wastewater-Based Epidemiology: A Review of the Recent Literature. *Microorganisms,* 13:9, 2073. Abstract >>

Morrison, E.N. (2025). Towards efficient and targeted sampling of primary respiratory diseases from wastewater in congregate settings for seniors: empowering high-risk demographics with prospective health threat data. *Journal of Virological Methods,* in press. Abstract >>

McBurney, S.H. (2025). Surveillance of Viral Diseases. *Viral Infections of Humans: Epidemiology and Control*, 1-52. Abstract >>

Casado-Martín, L. (2025). Insights Into Pandemic and Post-Pandemic Dynamics of Enteric Viruses in a Middle-Size City—Burgos, Spain—Using a Long-Term Wastewater Surveillance. *Food and Environmental Virology,* 17:3, 36. Abstract >>

Yusof, Y.A. (2025). Wastewater-Based Monitoring of Norovirus in Northern Region Malaysia. *Journal of Water and Environment Technology,* 23:3, 145-154. Abstract >>

Bokinni, Y. (2025). Wastewater surveillance tells a quiet story of polio's return. *BMJ,* 389, r1153. Abstract >>

Mangeri, L. (2025). Wastewater monitoring allows the detection of uncommon and highly pathogenic enterovirus types. *Applied and Environmental Microbiology,* in press. Abstract >>

Giesbrecht Shayna, J. (2025). Identification of circulating human papillomavirus types through high-throughput sequencing of Canadian municipal and institutional wastewater samples. *Applied and Environmental Microbiology,* in press. Abstract >>

Zulli, A. (2025). Community Infections Linked with Parvovirus B19 Genomic DNA in Wastewater, Texas, USA, 2023–2024. *Emerging Infectious Disease journal,* 31:7, 1442. Abstract >>

Agrawal, S. (2025). Going beyond SARS-CoV-2: genomic surveillance of monkeypox in German wastewater. *Research Square,* 18 Jun, 2025. Abstract >>

Phaneuf, J.R. (2025). Decay and solid-liquid partitioning of mpox and vaccinia virus DNA in primary influent and settled solids to guide wastewater-based epidemiology practices. *Water Research,* 284, 123904.
Abstract >>

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Ekundayo, T.C. (2025). Prevalence of Human Bocavirus in Sewage, Surface Waters, and Other Environmental Milieux: A Meta-regression Modelling. *Food and Environmental Virology,* 17:3, 34. Abstract >>

Organisation mondiale de la Santé (2025). Wastewater and Environmental Surveillance for Monkeypox Virus Detection and Monitoring. *Policy Commons,* 02 Jul 2025. Abstract >>

Ketelhohn, A. (2025). Wastewater-based Surveillance for Hepatitis A and C in an Inflow-and Infiltration-Impacted Rural System. *Virginia Tech*. Abstract >>

Gan, C. (2025). Retrospective Wastewater Tracking of Measles Outbreak in Western Switzerland in Winter 2024. *Environmental Science & Technology Letters,* 12:6, 689-694. Abstract >>

Zulli, A. (2025). Probe-Based Enrichment Sequencing Applied to Wastewater Surveillance Accurately Tracks Multiple Viral Respiratory Outbreaks. *ACS ES&T Water,* in press. Abstract >>

Treagus, S. (2025). Norovirus trends in British Columbia from 2021 to 2022: the relationship between wastewater surveillance and clinical outbreak data during the COVID-19 pandemic. *Scientific Reports,* 15:1, 22614. Abstract >>

Fang, H. (2025). Characterization of Human Viral Diversity and Adenovirus Isolates in a Sewage Treatment Plant in Tianjin: Implications for Public Health and Advanced Monitoring. *Food and Environmental Virology,* 17:3, 39. Abstract >>

Schaeffer, J. (2025). Use of capture based metagenomic to assess human enteric virus diversity in sewage and shellfish samples. *Marine Pollution Bulletin,* 220, 118417. Abstract >>

Choi, S. (2025). Monitoring of enteric viruses in the community through wastewater-based surveillance in South Korea §. *The Microbiological Society of Korea,* 61:2, 141-157. Abstract >>

Izquierdo-Lara, R.W. (2025). Tracking Norovirus diversity at a global scale through Wastewater Metagenomics. *Water Research,* in press, 124257. Abstract >>

Warren, A.K. (2025). Development of Sample Processing Methods for Direct Molecular Detection of Poliovirus in Non-Flowing Wastewater. *University of Washington*. Abstract >>

Gan, C. (2025). Wastewater-based poliovirus surveillance using digital PCR. *Swiss Federal Institute of Aquatic Science and Technology, Eawag*, 23 p. Abstract >>

Bahrami, P. (2025). The quantification of JC polyomavirus in wastewater samples in Ahvaz, Iran. *International Journal of Environmental Health Research,* in press. Abstract >>

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Bar-Or, I. (2025). Clinical and environmental surveillance of poliovirus type 2 outbreak using a novel specific real-time quantitative PCR assay, Israel, 2022-2023. *The Journal of Infectious Diseases,* in press. Abstract >>

Godinez, A. (2025). Lessons learned from upstream wastewater sampling in response to poliovirus in New York State. *Science of The Total Environment,* 997, 180216. Abstract >>

Mancini, P. (2025). Detection of Dengue virus RNA in Wastewater during a Local Epidemic in Central Italy (August–October 2024). *Food and Environmental Virology,* 17:3, 41. Abstract >>

Geissler, M. (2025). Methodic aspects of influenza and respiratory syncytial virus detection in raw wastewater and presence in treatment plants in southeastern Germany. *Scientific Reports,* 15:1, 28194. Abstract >>

Anastopoulou, Z. (2025). Comparative Investigation and Trends of Respiratory Viruses using Wastewater-Based Epidemiological Surveillance in Patras, Greece. *Research Square,* 07 Aug, 2025. Abstract >>

Wang, A.L. (2025). Benchmarking Concentration and Extraction Methods for Wastewater-Based Surveillance of Eight Human Respiratory Viruses: Implications for Rapid Application to Novel Pathogens. *Environmental Science & Technology,* in press. Abstract >>

Khanna, M. (2025). Wastewater Surveillance for Early Detection of Viral Pathogens: A New Frontier in Public Health. *Infectious Diseases Journal - Global Research,* 1:1. Abstract >>

Izquierdo-Lara, R.W. (2025). Tracking norovirus diversity at a global scale through wastewater metagenomics. *Water Research,* 287, 124257. Abstract >>

Shi, X. (2025). Wastewater-based epidemiology of influenza A virus in Shenzhen: baseline values and implications for multi-pathogen surveillance. *Emerging Microbes & Infections,* in press. Abstract >>

Zhou, N. (2025). Detection and Genetic Characteristics of Cosavirus and Salivirus in the Wastewater, China. *Food and Environmental Virology,* 17:3, 44. Abstract >>

Fisher, M. (2025). A targeted tiled amplicon sequencing approach for clade and subclade level differentiation of monkeypox virus from wastewater. *Scientific Reports,* 15:1, 29361. Abstract >>

Du, X. (2025). Sewage surveillance revealed the emergence and prevalence of human rhinovirus and human parainfluenza virus in China based on their fecal shedding rates. *Water Research,* 287, 124512. Abstract >>

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