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Generating epidemiological evidence for controlling emerging infectious disease outbreaks

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PORTFOLIO

	Year	ECTS
Mandatory courses		
Responsible research – two activities	2025	0.5
Workshop Scientific conduct	2025	0.2
Scientific courses and training activities		
Master's in public health at the London School of Hygiene & Tropical Medicine with the following courses:	2018-2019	90
<ul style="list-style-type: none"> • Basic Epidemiology • Basic Module Basic Statistics for Public Health & Policy • Issues in Public Health • Principles of Social Research • Introduction to Health Economics • Health Services • Economic Evaluation • Economic Analysis for Health Policy • Design & Analysis of Epidemiological Studies • Analysing Survey and Population Data • Epidemiology and Control of Communicable Diseases 		
Medical specialisation: public health consultant for infectious disease control (arts Maatschappij + Gezondheid, infectieziektebestrijding) at the Netherlands School of Public and Occupational Health (NSPOH) with scientific modules such as:	2019- 2024	240
<ul style="list-style-type: none"> • Outbreak investigation • Sexual transmitted infections and sexual health • Travel advice and vaccination programs • Basic immunology • Antimicrobial resistance and stewardship • Critical appraisal of a topic 		

	Year	ECTS
Introduction to outbreak analysis using R	2020	1.5
Two-year European Programme for Intervention Epidemiology Training (EPIET) programme, organised by European Centre for Disease Prevention and Control (ECDC), with RIVM as training site.	2021-2023	120
The fellowship contained the following scientific courses:		
<ul style="list-style-type: none"> • Introductory course part 1 and 2 • Operational research • Phylogeny • Data management • Outbreak investigation • Multivariable analysis • Rapid Risk Assessment and survey methods • Time series analysis • Qualitative research • Vaccinology 		
Tidy-R course at the RIVM	2021	0.2
Stat-R course at the RIVM	2021	0.2
Vis-R course at the RIVM	2023	0.2
Transferrable skills courses and training activities		
Transferable skills modules during EPIET fellowship:	2021-2023	-
<ul style="list-style-type: none"> • Management, leadership and communication in public health • Project review and presentation skills part I and II 		
Transferable skills modules during the specialisation as public health consultant:	2019-2024	-
<ul style="list-style-type: none"> • Crisis management • Project management • Governance and management in public health • Innovation and behavioural change in public health (using o.a. intervention mapping) • Strategy and policy in public health • Media training • Risk communication 		
Non-scientific writing course	2025	0.5

	Year	ECTS
Teaching activities		
Several teaching activities, such as:	2021-2025	4
<ul style="list-style-type: none"> • Several case study facilitation sessions for medical students • Several presentations for medical students on e.g. study design, outbreak investigation, choosing reference groups • Outbreak response for infectious disease modelers • Clinical lesson ‘invasive pneumococcal disease’ for epidemiologist at GGD’s • Supervising medical students’ Critical Appraisal of a Topic (CAT) at the RIVM • Online Masterclass ‘Outbreak investigation and management’ (https://www.youtube.com/watch?v=Rzkh2eo8riU) 		
Conferences		
Attendance ESCAIDE conference	2021	0.8
Attendance ESCAIDE conference	2022	0.8
Attendance Moonshots of Pandemic & Disaster Preparedness Research	2023	0.3
Attendance ESCAIDE conference	2023	0.8
Attendance EAN mini-module Media and infodemic management	2023	0.5
Attendance Transmissiedag conference	2024	0.3
Attendance ESCAIDE conference	2025	0.8
Attendance Transmissiedag conference	2025	0.3
Presentations		
Oral presentation ESCAIDE conference	2022	0.5
[COVID-19 vaccine effectiveness against SARS-CoV-2 infection during the Delta period, a nationwide study adjusting for chance of exposure, the Netherlands, July to December 2021] related to chapter 4 of this thesis		
Poster presentation ESCAIDE conference	2022	0.5
[COVID-19 outbreak in an elderly care home: Very low vaccine effectiveness and late impact of booster vaccination campaign] related to chapter 3 of this thesis		
Other activities		
Peer reviewer for Eurosurveillance and Vaccine (5 manuscripts)	2022-2025	1.5
Attending the weekly scientific seminars, and early warning meetings organised by the epidemiology and surveillance department of the RIVM	2021-2025	2
Co-writer of Chapter 4 “Uitbraakonderzoek en uitbraakmanagement” of the revision of the book “Infectieziektebestrijding” 2025 ISBN 9789465070421	2024	3

LIST OF PUBLICATIONS

Publications reported in this thesis

1. Koopsen, J. and **van Ewijk, C.E.**, Bavalia, R., Cornelissen, A., Bruisten, S. M., de Gee, F., Han, A. X., de Jong, M., de Jong, M. D., Jonges, M., Khawaja, N., Koene, F. M. H. P. A., van der Lubben, M., Mikulic, I., Rebers, S. P. H., Russell, C. A., Schinkel, J., Schreijer, A. J. M., den Uil, J. A., Welkers, M. R. A., ... ARGOS consortium (2022). Epidemiologic and Genomic Analysis of SARS-CoV-2 Delta Variant Superspreading Event in Nightclub, the Netherlands, June 2021. *Emerging infectious diseases*, 28(5), 1012–1016. <https://doi.org/10.3201/eid2805.212019>
2. **Van Ewijk C.E.** and Hazelhorst, E. I., Hahné, S. J. M., & Knol, M. J. (2022). COVID-19 outbreak in an elderly care home: Very low vaccine effectiveness and late impact of booster vaccination campaign. *Vaccine*, 40(46), 6664–6669. <https://doi.org/10.1016/j.vaccine.2022.09.080>
3. **van Ewijk C.E.**, Kooijman M.N., Fanoy E., Raven S.F.H., Middeldorp M., Shah A., de Gier B., de Melker H.E., Hahné S.J.M., Knol M.J. COVID-19 vaccine effectiveness against SARS-CoV-2 infection during the Delta period, a nationwide study adjusting for chance of exposure, the Netherlands, July to December 2021 . *Euro Surveill.* 2022;27(45):pii=2200217. <https://doi.org/10.2807/1560-7917.ES.2022.27.45.2200217>
4. Miura F, **van Ewijk, C.E.**, Backer J.A., Xiridou M., Franz E., Op de Coul ., Brandwagt D., van Cleef B., van Rijckevorsel G., Swaan C., van den Hof S., Wallinga J.. Estimated incubation period for monkeypox cases confirmed in the Netherlands, May 2022. *Euro Surveill.* 2022;27(24):pii=2200448. <https://doi.org/10.2807/1560-7917.ES.2022.27.24.2200448>
5. **Van Ewijk, C.E.**, Miura, F., van Rijckevorsel, G., de Vries H.J.C., Welkers M.R.A., van den Berg O.E., Friesema I.H.M., van den Berg P.R., Dalhuisen T., Wallinga J., Brandwagt D., van Cleef B.A.G.L., Vennema H., Voordouw B., Koopmans M., van der Eijk A.A., Swaan C.M., te Wierik M.J.M., Leenstra T., Op de Coul E. and Franz Eelco, the Dutch Mpox Response Team. Mpox outbreak in the Netherlands, 2022: public health response, characteristics of the first 1,000 cases and protection of the first-generation smallpox vaccine. *Euro Surveill.* 2023;28(12):pii=2200772. <https://doi.org/10.2807/1560-7917.ES.2023.28.12.2200772>
6. **van Ewijk, C. E.**, Smit, C., Bavalia, R., Ainslie, K., Vollaard, A., van Rijckevorsel, G., & Hahné, S. J. M. (2023). Acceptance and timeliness of post-exposure vaccination against mpox in high-risk contacts, Amsterdam, the Netherlands, May-July 2022. *Vaccine*, 41(47), 6952–6959. <https://doi.org/10.1016/j.vaccine.2023.10.013>

7. **van Ewijk, C. E.**, Suárez Hernández, S., Jacobi, R. H. J., Knol, M. J., Hahné, S. J. M., Wijmenga-Monsuur, A. J., Boer, M. C., & van de Garde, M. D. B. (2024). Innate immune response after BNT162b2 COVID-19 vaccination associates with reactivity. *Vaccine: X*, 22, 100593. <https://doi.org/10.1016/j.jvacx.2024.100593>

Other publications

1. **Van Ewijk, C.E.**, Schneeberger, C., Jacobs, J. M. M., Boutkourt, F., Aanhane, F. E. M., Schim van der Loeff, M. F., & Koene, F. M. H. P. A. (2022). Use of a Telemedicine Team to Improve Guideline-Based Antibiotic Prescribing. *Journal of the American Medical Directors Association*, 23(6), 1011–1018.e2. <https://doi.org/10.1016/j.jamda.2021.09.031>
2. Vaughan A.M., Cenciarelli O., Colombe S., Alves de Sousa L., Fischer N., Gossner C.M, Pires J., Scardina G., Aspelund G., Avercenko M., Bengtsson S., Blomquist P., Caraglia A., Chazelle E., Cohen O., Diaz A., Dillon C., Dontsenko I., Kotkavaara K., Fafangel M., Ferraro F., Firth R., Fonager J., Frank C., Carrasco M.G., Gkolfinopoulou K., Grenersen M.P., Guzmán Herrador B.R, Henczkó J., Hoornenborg E., Igoe D., Ilić M., Jansen K., Janžá D., Johansen Tone B., Kasradze A., Koch A., Kyncl J., Martins J.V., McAuley A., Mellou K., Molnár Z., Mor Z., Mossong J., Novacek A., Orlikova H., Pem Novosel I., Rossi M.K., Sadkowska-Todys M, Sawyer C., Schmid D., Sírbu A., Sondén K., Tarantola A., Tavares M., Thordardottir M., Učakar V., **Van Ewijk C.E.**, Varjas J., Vergison A., Vivancos R., Zakrzewska K., Pebody R., Haussig J.M. A large multi-country outbreak of monkeypox across 41 countries in the WHO European Region, 7 March to 23 August 2022. *Euro Surveill.* 2022;27(36):pii=2200620. <https://doi.org/10.2807/1560-7917.ES.2022.27.36.2200620>
3. **Van Ewijk C.E.**, Hahné S.J.M.. Letter to the editor: Bias in the vaccine effectiveness estimates of one-dose post-exposure prophylaxis against mpox. *Euro Surveill.* 2023;28(34):pii=2300358. <https://doi.org/10.2807/1560-7917.ES.2023.28.34.2300358>
4. **Van Ewijk C.E.**, Hahné S.J.M., Knol M.J., on behalf of all co-authors of the original article. Response to Letter to the Editor: Importance of considering high-risk behaviours in COVID-19 vaccine effectiveness estimates with observational studies. *Euro Surveill.* 2023;28(4):pii=2300044 <https://doi.org/10.2807/1560-7917.ES.2023.28.4.2300044>

5. Haverkate M.R, Willemstein I.J.M., **van Ewijk C.E.**, Adam P.C.G., Lanooij S.J., Jonker-Jorna P., van Bokhoven C., van Rijckevorsel G.G.C., Hoornenborg E., David S., Mollema L., te Wierik M.J., Lange J., Franz E., de Melker H.E., Op de Coul E.L.M., Hahné S.J.M.. Factors potentially contributing to the decline of the mpox outbreak in the Netherlands, 2022 and 2023. *Euro Surveill.* 2024;29(21):pii=2300608. <https://doi.org/10.2807/1560-7917.ES.2024.29.21.2300608>
6. **Van Ewijk, C.E.**, Afrian, A., Van Sorge, N., Steens, A. (2024) Evaluatie van surveillancesysteem voor invasieve pneumokokkenziekte in volwassenen van 60 jaar en ouder, 2021-2022. *Infectieziektebulletin IB 03 2024* <https://www.rivm.nl/weblog/ib-evaluatie-van-surveillance-systeem-voor-invasieve-pneumokokkenziekte-in-volwassenen-van-60>
7. Colombe S., Funke S., Koch A., Haverkate M., Monge S., Barret A., Vaughan A., Hahné S., **van Ewijk C.E.**, Emborg H., von Schreeb S., Díaz A, Olmedo C., Zanetti L., Levy-Bruhl D., de Sousa L.A., Hagan J., Nicolay N., Pebody R. Effectiveness of historical smallpox vaccination against mpox clade II in men in Denmark, France, the Netherlands and Spain, 2022. *Euro Surveill.* 2024;29(34):pii=2400139. <https://doi.org/10.2807/1560-7917.ES.2024.29.34.2400139>
8. Van den End, S. and **van Ewijk, C.E.**, Keur, I., Boreel, J., Van Cleef, B., Elbé, P., Van Rijckevorsel, G., Te Wierik, M. (2024) Rabiës in Nederland: twee casussen met veterinaire en humane dilemma's. *Infectieziektebulletin IB 11 2024.* <https://www.rivm.nl/weblog/IB/rabies-in-nederland-twee-casussen-met-veterinaire-en-humane-dilemmas>
9. Hesp, A. and **Van Ewijk, C.** De Jong, M., Feenstra, S., Kortbeek, T., Piek, C. (2024) Een prikaccident tijdens bloedafname bij een hond met *Leishmania*: zoönotisch risico of niet? *Infectieziektebulletin IB 06 2024.* <https://www.rivm.nl/weblog/prikaccident-tijdens-bloedafname-bij-hond-met-leishmania-zoonotisch-risico-of-niet-ib-06>
10. Hazelhorst, E. I., **van Ewijk, C.E.**, Wielders, C. C. H., Te Wierik, M. J. M., Hahné, S. J. M., de Melker, H. E., Knol, M. J., & de Gier, B. (2025). Risk factors for invasive group A streptococcal infection in children aged 6 months to 5 years: a case-control study, the Netherlands, February-May 2023. *Epidemiology and infection*, 153, e57. <https://doi.org/10.1017/S0950268825000275>
11. Elsinga J., van de Ven C., de Vries A., Coppoolse H., Petrignani M., van Cleef B., van Markus R., Carpay N., **van Ewijk C.E.**, Rebers S., Bart A., von Eije K.J., Westerhuis B., Bruisten S., Schuele L., Boter M., Molenkamp R., Lemkes B., Geerlings S., de Vries H.J.C., Koopmans M., Jonges M., Oude Munnink B.B., Welkers M.R.A. (2026) First detection and autochthonous transmission of monkeypox virus clade Ib in the Netherlands, October to November, 2025. *Euro Surveill.* 2026;31(3):pii=2500958. <https://doi.org/10.2807/1560-7917.ES.2026.31.3.2500958>

CURRICULUM VITAE

Katja van Ewijk was born on October 26, 1989, in Amsterdam, the Netherlands. She graduated from the Stedelijk Gymnasium in Haarlem in 2008. After spending two semesters studying Italian language and culture in Perugia, she began her Medicine studies at VU University Amsterdam in 2009 and obtained her degree in 2016. Between 2016 and 2018 she worked as a resident (ANIOS) on the intensive care unit, as well as the internal medicine and the emergency psychiatry department.

In 2018 she made the decision to move away from clinical work and enrolled in a master's programme in Public Health at the London School of Hygiene & Tropical Medicine. After obtaining her degree, she returned to the Netherlands and started her specialisation as a public health consultant with a focus on infectious disease control in 2019. During this period, she gained experience working at both the regional (GGD) and the national (RIVM) level. In 2021, during her last years of her public health residency, she combined her training with the EPIET (European Programme for Intervention Epidemiology Training) fellowship programme. EPIET is a two-year training programme funded by the European Centre for Disease Prevention and Control (ECDC) that prepares public health professionals for field epidemiology work, and provides hands-on experience in outbreak investigation, surveillance, and applied epidemiological research.

During this two-year EPIET fellowship, Katja completed most of the work presented in this thesis. While simultaneously working as a resident at the National Coordination Centre for Infectious Disease Control (LCI) of the RIVM, where she participated in national outbreak responses, she concentrated on addressing questions aimed at supporting evidence-based prevention and control measures.

She is currently working as a public health consultant and epidemiologist for infectious disease control at the RIVM, where she hopes to continue to combine her interest in applied infectious disease epidemiology and infectious disease control.

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I would like to thank all my colleagues from the Epidemiology department, as well as everyone else I had the pleasure of working with on my projects. I have learned a lot from you all. Thanks to all my colleagues from the LCI department for supporting me, giving me the confidence and the freedom to work on this thesis.

Many of the articles in this thesis were written during my time as EPIET fellow. I want to thank again Susan and Mirjam for choosing me as their Member State EPIET fellow back in 2021. I applied last minute, and I am so happy I did. The fellowship opened a whole new world to me. I would also like to thank Tanja Charles for being my ever so patient frontline coordinator each time I came with a new manuscript to be read. Thanks to the EPIET fellowship for creating such a wonderful two-year experience. And of course, thanks to my dear EPIET friends: I hope our bond will indeed stay strong, so we can tackle any future outbreaks (internationally) together.

This thesis was not a preconceived plan, but I was lucky enough to be granted the opportunity. Therefore, it came as a surprise to many of my friends and family that I wanted to turn my work into a thesis. It may have saved them a big bunch of complaining. Nonetheless, I would like to thank a few people in particular. Mom, dad, you are the most supportive parents I can imagine. You always encourage me to be my best self. Whenever I come up with a new goal for myself, whether it is learning Italian in Italy, quitting my job to travel, switching career path from being an ICU doctor to moving to London for a master's in public health, you are always there, and I am very grateful for that. To Mike, my partner in life: I am so thankful that our paths have crossed. I love how you always make me see the humour in things. But most of all, I love how you support me in whatever dream I have, and how you allow me to be me.