Emily E. Tyszka, MPH

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Summary

Syndromic Epidemiologist specializing in infectious disease surveillance at the Massachusetts Department of Public Health's Division of Surveillance, Analytics, and Informatics. Highly skilled in statistical analysis of epidemiological and microbiology laboratory data using R and SAS. Graduated *magna cum laude* from Case Western Reserve University in 2021 with a BA in Biology and a Masters in Public Health (MPH) with an emphasis on Epidemiology and Quantitative Methodology.

Professional History

Massachusetts Department of Public Health - State Public Health Lab, Boston, MA
***Epidemiologist I**, Syndromic Surveillance* - July, 2023 - Present

- Develops and executes syndromic surveillance epidemiologic and informatics activities for infectious disease surveillance and awareness, as funded by the Centers for Disease Control and Prevention's ELC Cooperative Agreement.
- Performs statistical analyses as required and develops materials in response to data requests and routine aggregate and summary reports.
- Develops and implements quality assurance controls and protocols with regard to the collection and monitoring of ED data. Supports processes to onboard and manage eligible hospitals for syndromic surveillance activities.
- Serves as an epidemiologist liaison between the Division of Surveillance Analytics and Informatics and other programs within the department in support of infectious disease surveillance and informatics activities.
- Contributes data and data summaries for ongoing projects, such as the Massachusetts Respiratory Illness Reporting Dashboard and its related internal reports.

Massachusetts Department of Public Health - State Public Health Lab, Boston, MA
***Research Analyst III**, Microbiology Division* - November, 2021 - July, 2023

- Supported Microbiology Division operations through the analysis of data in Excel, R and SAS statistical software, and Tableau geographic mapping tools. Assisted laboratory supervisors and division director in monitoring key quality indicators, such as specimen volume, results, and turnaround time.
- Compiled and analyzed results for statewide wastewater surveillance of COVID-19. Developed data collection tools in REDCap and assisted in validation of laboratory methods. Utilized time series analysis to compare viral concentrations in wastewater to statewide case counts and hospitalizations.
- Collaborated with Sequencing & Bioinformatics Core to visualize and analyze abundance of COVID-19 variants in wastewater, enabling for the monitoring and detection of emerging lineages.
- Worked with epidemiologists and laboratory staff to coordinate receipt of Group A streptococcal isolates for testing and CDC sendout.
- Assisted Quality Assurance with standardizing SOPs and worksheets for the Microbiology Division and Sequencing & Bioinformatics Core, in order to prepare for adoption of Qualtrax Compliance Software.
- Supported data entry activities for ongoing healthcare worker COVID-19 monitoring efforts.
- Conducted analysis for troubleshooting of hospital COVID-19 surveillance sample sequencing.

CWRU School of Medicine - Neuroimmunological Disorders Gene-Environment Epidemiology Lab, Cleveland, OH

Graduate Student Researcher - October, 2020 - September, 2022

- MPH Capstone Project: completed research on effects of neurological and mental health outcomes on physical activity level among persons with multiple sclerosis (MS). Utilized iConquerMS™ survey data from 1855 respondents and conducted cross sectional analyses using multivariable logistic regression in R.
    - Capstone was completed under the guidance of a Capstone Committee and was presented in front of the Department of Population and Quantitative Health Sciences at the Spring 2021 Public Health Innovations Conference.
    - Later received a travel grant to present Capstone research as a poster at the 2021 CMSC Scholar conference in Orlando, Florida.
    - Findings were published in the International Journal of MS Care in September, 2022.
- Completed cross sectional analyses of iConquerMS™ survey data to examine sociodemographic factors in poor mental health among persons with MS. Received an educational grant to present research at Americas Committee for Treatment and Research in Multiple Sclerosis Forum 2021.

iConquerMS™, Waltham, MA

Research Intern - September, 2020 - April, 2021

iConquerMS™ is a non-profit initiative of the Accelerated Cure Project for MS, a patient-founded national non-profit organization dedicated to furthering MS research with the input of MS patients. iConquerMS™ consists of a network of MS providers, researchers, and advocates, as well as over 6,500 people with MS who contribute health data and other input to advance MS research.

- Completed qualitative research via a series of 11 group and individual interviews with patients, researchers, and care providers from racial minority groups on factors influencing minority involvement in MS research studies.
- Partnered with the VP of Scientific Operations to write a report on interview findings. Report was distributed to iConquerMS™ care partners, researchers, and collaborators nationwide.
- Edited and assisted in the writing of a pamphlet for the organization's minority research recruitment pilot project. The pamphlet was launched at MS and neurology practices nationwide in order to recruit MS patients from minority groups to become involved with iConquerMS™.

Education

Case Western Reserve University (CWRU), Cleveland, OH August, 2019 - May, 2021

Masters in Public Health (4.00 GPA)

Completed BA in Biology and MPH degree concurrently through the university's Integrated Graduate Studies program. Graduated from the MPH program with the Health Promotion and Disease Prevention concentration, through the program's quantitatively-focused Intensive Research Pathway. Practicum was completed at iConquerMS in Waltham, MA and consisted of a series of interviews regarding the involvement of patients from racial minority groups in multiple sclerosis-related research studies. Capstone project was an epidemiological study investigating physical activity in MS patients, later published in the *International Journal of MS Care*.

Case Western Reserve University (CWRU), Cleveland, OH August, 2016 - May, 2021

BA in Biology (3.83 GPA - Magna Cum Laude)

Graduated *magna cum laude* with a BA in Biology. Coursework included microbiology, human anatomy, statistics, and an undergraduate course in epidemiology.

Maastricht University, Maastricht, The Netherlands August, 2018 - December, 2018
Study Abroad - Public Health and Medicine in Europe
Maastricht University is a public research university in Maastricht, The Netherlands. Through the Public Health and Medicine in Europe program, gained an understanding of public health policies and medical systems and practices in Europe. Coursework was completed in English and included European Public Health, Medical Ethics, and Tuberculosis.

Publications

[Abstract] Hsu, K., Elder H., Platt L., Nichols K., **Tyszka, E.**, Joshi A., Ivanof C., Krawczyk C., Burke R., Roosevelt K., *Implementing increased gonococcal culture surveillance in Massachusetts*, STD & HIV World Congress, Chicago, IL, United States (2023).

[Journal Article] **Tyszka, E.**, Bozinov, N., Briggs, F., Characterizing relationships between cognitive, mental, and physical health on physical activity levels in persons with multiple sclerosis. *International Journal of MS Care* (2022) 24 (5): 242–249.

[Master's Thesis] **Tyszka, E.**, *Characterizing the Relationship Between Neurological/Mental Health And Physical Activity Levels In Persons with Multiple Sclerosis*. Case Western Reserve University (2021).

[Report] **Tyszka, E.**, & Schmidt, H. I*nterviews with Persons with MS, Providers, and Researchers: Themes and Findings*. iConquerMS (2021).

Relevant Coursework

- Epidemiology
- Statistics
- Environmental Health
- Microbiology
- Biomedical Study Design
- Health Communication
- Medical Ethics
- Human Anatomy
- European Public Health

Programming Language Proficiencies: R, SAS, SAS SQL, MATLAB
Other Technical Proficiencies: Microsoft Excel, Microsoft Tableau, Oracle DB, REDCap, IML, BTB.