Doctoral Dissertation Defense Announcement

“Preventing childhood lead poisoning: Risk factors and points of intervention”

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Public & Community Health
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Committee in Charge:
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Aprill Dawson, PhD, MPH
Caitlin Kaeppler, MD
David Nelson, PhD

Date: Wednesday April 10\textsuperscript{th}, 2024
Time: 12:00 PM (CST)
Defense Location: Medical College of Wisconsin, HUB, room A6520/A6628
Zoom: https://mcw-edu.zoom.us/j/97748707107?pwd=ciNqNVNOxk8V2MzJQkE0Wm45QT09
Meeting ID: 977 4870 7107 Passcode: 2LF11EgB
Graduate Studies:

Introduction to Epidemiology
Infectious Disease Epidemiology
Community Health Improvement I
Community Health Improvement II
Community Health Improvement III
Community Health Improvement IV
Intro to Statistical Analysis
Regression Analysis- Stata
Global Environmental Health
Health and Forced Migration
Global Health Consulting & Research
Qualitative and Mixed Methods
Qualitative Data Analysis
Survey Research Methods
Ethics & Integrity in Science
Research Ethics Discussion Series
Reading and Research
Seminar
Doctoral Dissertation Credits
Dissertation

“Preventing childhood lead poisoning: Risk factors and points of intervention”

Abstract

Exposure to lead is a health hazard, especially to children. Its health impacts include developmental delay, decreased intelligence quotient, learning difficulties, and more. Disparities exist in which populations are most impacted by lead poisoning. Children of color, low socioeconomic status, those living in rental housing, and refugees are among groups at greater risk. This mixed-methods study examined three factors related to lead poisoning: the experiences and perspectives of refugee resettlement workers related to lead poisoning, the impact of residing in a home served by a lead lateral water line, and the experiences and perspectives of landlords related to lead hazards in rental properties.

First, in-depth qualitative interviews with resettlement workers or other stakeholders in the refugee resettlement process were conducted to understand factors that may put refugee children at increased risk for lead exposure post-resettlement in the United States. This analysis found that a lack of affordable or safe housing, public misperceptions related to refugees, lack of awareness about lead are barriers to refugee families securing lead safe housing.

Second, childhood blood lead data from the Wisconsin Department of Health Services and lead lateral data from the city of Milwaukee Department of Water Works were used to examine the impact on residing in a home served by lead lateral water pipes on lead levels in children under one year of age. This analysis found that after adjusting for age, sex, race/ethnicity, Medicaid status, poverty by zip code, season of testing and age of primary residence, children in Milwaukee under 1 year of age whose listed primary residence was served by a lead lateral line were at greater risk for elevated blood lead levels > 3.5 µg/dL (OR 1.60, 95% CI 1.04-2.46, p 0.031) and at greater risk for blood lead levels >5 µg/dL (OR 2.26, 95% CI 1.23-4.16, p 0.008) than children whose primary residence was not served by a lead lateral line.

Third, surveys were used to collect data on landlords’ perceptions of lead in rental properties, and data collected through one-on-one interviews were used to generate hypotheses for potential landlord-facing interventions. This study found that lack of knowledge, lack of funding, and some policy loopholes were barriers to landlords providing lead-safe housing.

Despite significant gains in lead poisoning prevention over the last several decades, children remain vulnerable to the deleterious effects of lead exposure. This study found that awareness and education related to lead exposure are needed—for families of infants residing in homes with lead lateral lines, for resettlement workers securing housing for newly arriving families, and for
landlords renting properties with potential lead hazards. Policy that requires testing for and explicit disclosure of lead hazards in rental properties, and other thoughtful policy and funding initiatives to promote safe housing and remediation for lead hazards in homes could be useful in lead poisoning prevention.
EDUCATION

Medical College of Wisconsin            2024 (Anticipated)
PhD in Public & Community Heath
Milwaukee, WI
Mentor: Kathryn E. Flynn, PhD
Dissertation title: Preventing childhood lead poisoning: Risk factors and points of intervention

The Johns Hopkins School of Nursing       2012
Bachelor of Science, Nursing
Baltimore, MD

Wisconsin Lutheran College                2005
Bachelor of Arts, Spanish
Milwaukee, WI

Universidad de Guadalajara                2003
Study Abroad
Guadalajara, Jalisco, Mexico

CERTIFICATIONS/HONORS

Certified Medical/Surgical Nurse (CMSRN)  2015
Registered Nurse (RN)                      2012
National Honors Society of Nursing (Sigma Theta Tau) 2012

PROFESSIONAL SOCIETIES

American Public Health Association (APHA)  2022-2024
Student Member

AWARDS

Student Graduate Association Travel Award  2022
Medical College of Wisconsin

Student Graduate Association Travel Award  2023
Medical College of Wisconsin

Department of Medicine Health Endowment Travel Award  2023
Medical College of Wisconsin

LEADERSHIP AND COMMITTEE POSITIONS

Admissions Committee                     2024
Public and Community Health PhD Program
Medical College of Wisconsin
TEACHING EXPERIENCE

Mind over Matter (MOM): Healthy bladder, health bowels 2023-2024
Program Facilitator

RESEARCH EXPERIENCE

Research Assistant 2019-Present
Department of Medicine, Medical College of Wisconsin
Milwaukee, WI
Works under several primary investigators on a variety of projects including studies funding by the National Institute of Health. Experience in: in-depth interviewing, cognitive interviewing, qualitative coding, systematic reviews, coordination with Institutional Review boards, survey management through REDCap, and manuscript preparation.

PROFESSIONAL EXPERIENCE

Registered Nurse II Jan 2018 – Aug 2019
Stanford Hospital
Palo Alto, CA
Provided direct patient care on an Adaptable Care Unit (provided both medical/surgical and ICU care).

Registered Nurse Level IV Nov 2012 – Dec 2017
Froedtert Hospital
Milwaukee, WI
Provided direct patient care on internal medicine/telemetry unit, served as a nurse preceptor and shift coordinator. Full time November 2012 to January 2015, part time/per diem until December 2017. House-wide chair of the nursing quality & safety committee.

City of Milwaukee Health Department
Milwaukee, WI
Home visiting nurse in the Empowering Families of Milwaukee program, provided in-home nursing, health education, support, and referrals for pregnant women and infants.

Bilingual Recruiter/Branch Manager May 2005 – June 2008
Parallel Employment Group
Milwaukee, WI
Hired as a Bilingual (English/Spanish) Recruitment and Placement Specialist, promoted to Branch Manager, trained in OSHA practices and certified in employment law by the American Staffing Association.

INTERNATIONAL PROFESSIONAL EXPERIENCE

Nursing Activities Manager Dec 2017-June 2018
Médecins San Frontières (Doctors without Borders)
Aburoc, Upper Nile, South Sudan
Stationed at an inpatient hospital and clinic providing acute care, maternity, outpatient services and mobile clinics. Responsible for supervision of pharmacy and nursing activities.
Registered Nurse
SP Emergency Field Hospital
Bartella, Iraq
March 2017 – May 2017
Provided direct care to pediatric and adult war-trauma patients at an emergency field hospital outside Mosul. Served as ward charge nurse.

Ebola Response Nurse
Partners in Health
Port Loko & Freetown, Sierra Leone
Jan 2015 – April 2015
Triaged and provided direct care for Ebola patients at Maforki Ebola Treatment Unit in Port Loko, Sierra Leone, in collaboration with healthcare workers from Sierra Leone, United States, and Cuba. Provided maternal/infant nursing care at the Ebola Holding Center at Princess Christian Maternity Hospital in Freetown.

VOLUNTEER EXPERIENCE
Planning committee
‘Our City of Nations’ conference on refugee issues
Milwaukee, WI
July 2023 – Nov 2023

Resettlement volunteer
International Rescue Committee
San Jose, CA
Oct 2018 - Aug 2019

Registered Nurse
World Medical Mission
Cox’s Bazar, Bangladesh
Sept 2017
Provided direct care to pediatric and adult trauma patients during the Rohingya refugee crisis.

Registered Nurse
Syrian American Medical Society (SAMS)
Al Zaatari, Jordan
March 2016
Provided nursing support at SAMS hospital emergency ward in Al Zaatari refugee camp.

Peace Corps Volunteer
United States Peace Corps
Mpumalanga, South Africa
July 2008 – August 2010
Underwent training in the Ndebele language, community needs assessments, community health, and educational theory. Collaborated with local nurses to hold community HIV/AIDS awareness and testing events, led after school HIV/life skills group with local counterparts, and worked closely with schools to acquire resources such as safe latrines and library books.

PUBLICATIONS


**PUBLICATIONS UNDER REVIEW**


**PRESENTATIONS**


INVITED PRESENTATIONS

1. Balza, J. (2023, August 16) Lead Poisoning in Refugee Populations. Presented to: Texas Department of Health and Human Services, Childhood Lead Poisoning Prevention, Quarterly Strategic Planning Committee meeting. (Virtual)


JOURNAL REVIEWS

Environmental health insights 2023