

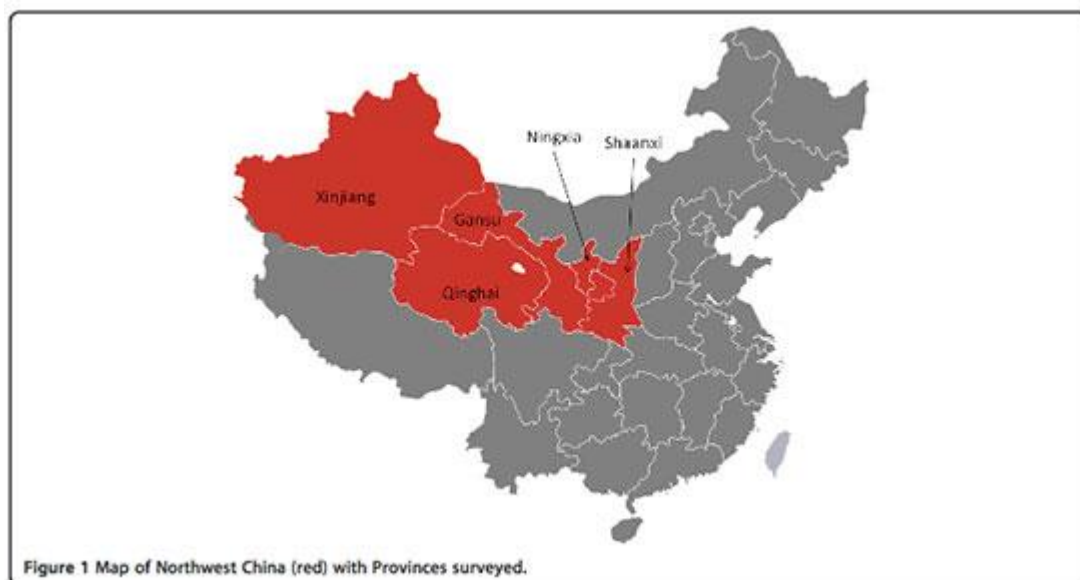
Science Spotlight

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Building Capacity for Children's Environmental Health Research in China

By: Sara Mishamandani

[Leonardo Trasande, M.D.](#), of the New York University (NYU) School of Medicine is partnering with Jingping Niu, M.D., a professor at Lanzhou University School of Public Health (LUSPH) to build capacity for air pollution and children's environmental health (CEH) research in northwest China.



Map of Northwest China (red) with Provinces Surveyed; Source: Trasande et.al., *BMC Pediatrics*, 2014, 14:82

Trasande, a leader in global CEH research and policy, and Niu are working with their respective teams to assess and provide needed research, training, translation, and capacity building for healthcare providers, community stakeholders, and policy makers to address the emerging environmental health issues in northwest China. Their NIEHS-funded studies in the region will examine the effect of air pollution on neurodevelopmental, cardiovascular, and respiratory problems in children, as well as birth outcomes from prenatal exposures.

The western part of the country lagged behind Eastern China industrially until 2000, when a rapid transformation in the northwest province began as part of a new state policy to help the region improve its economy. Industrial growth and an exponential increase in automobile use are increasing air pollution significantly in northwest China.

"LUSPH researchers have strong track records in building community partnerships to conduct culturally appropriate research and in hiring staff from the community that share cultural and linguistic backgrounds

of the participants, but they did not have the experience in the design of studies of environmental exposures and their impacts on children,” said Trasande. “We brought experience in children’s environmental health studies to enhance the research planning effort in China.”

The LUSPH-NYU team administered surveys to pediatricians, childcare specialists, and nurses in five provinces in the northwestern region. Survey data suggested that in general, the healthcare providers perceived the environment impacted health but did not believe they could manage exposure to pollutants. Further, they did not have the training to record patients’ environmental histories. Trasande and his Chinese colleagues concluded that there was potential for improving children’s health in the region by enhancing provider capacity. The [findings of the survey](#) formed the basis of an educational conference for health professionals in northwest China that focused on identifying harmful and preventable exposures and enhancing capacity for understanding health effects related to outdoor air pollution, with additional sessions providing context for other environmental exposures affecting children.

The researchers also surveyed policy makers to identify barriers to resolving issues related to children’s exposure to air pollution. They concluded that additional government regulation and education was necessary to prevent health effects associated with air pollution.

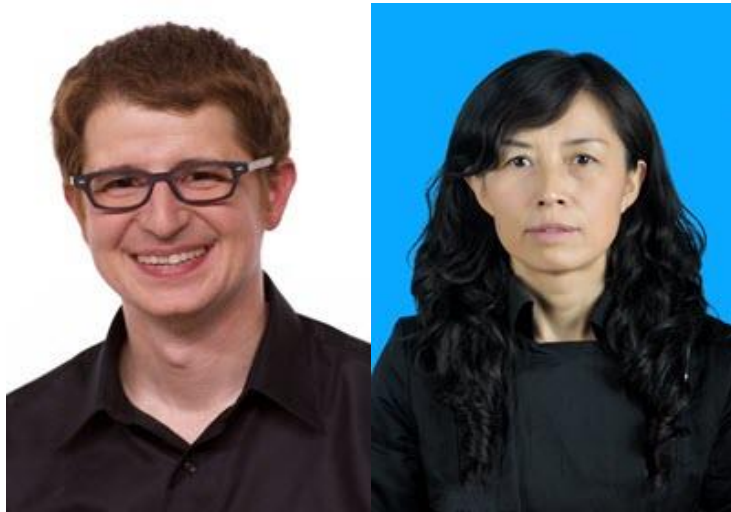


The LUSPH-NYU research team held a conference on children’s environmental health attended by 80 pediatricians, child preventive healthcare providers, local health officials from all five provinces of the northwest region of China, and other stakeholders.

(Photo courtesy of Leonardo Trasande)

Moving forward, Niu, Trasande, and their team are identifying interest and expertise among pediatricians and psychologists at Gansu Children's Hospital in Gansu, China to conduct CEH studies related to prenatal heavy metal exposure and neurodevelopmental delays, air pollution and cardiovascular and respiratory effects, and prenatal air pollution exposure and birth outcomes. They are also identifying the best ways to translate existing knowledge of air pollution and children's health to ensure integration of the research into effective policies in China.

"By evaluating perceptions about the role of the environment and children's health and the perception of environmentally mediated disease in children, our ultimate goal is to maximize effective prevention of childhood chronic disease and disability in northwest China," said Niu. "The five-province network built through this program strongly enhances our regional collaborations and provides useful educational and research resources to identify and solve environmentally related children's health problems in China."



Leonardo Trasande is a faculty member in pediatrics and environmental medicine at the NYU School of Medicine, in health policy at the NYU Wagner Graduate School of Public Service, and in public health at the NYU Steinhardt School of Culture, Education, and Human Development.

(Photo courtesy of Leonardo Trasande)

Jingping Niu is a professor of environmental health at the Lanzhou University School of Public Health and has been collaborating with NYU investigators on a number of NIEHS-funded projects since 2009.

(Photo courtesy of Jingping Niu)