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Pesticide Use and Health Outcomes: Evidence from Agricultural Water Pollution in China

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Abstract:

By linking provincial pesticide usage reports from several Chinese statistical yearbooks (1998-2011) with the Chinese Longitudinal Healthy Longevity Survey (1998-2011), this study provides new evidence that pesticides adversely affect health outcomes via drinking water exposure. We follow a difference-in-difference-in-differences framework to compare health outcomes between people who drink surface water and ground water in regions with different intensities of rice pesticide use before and after 2004, when China shifted from taxing agriculture to subsidizing agricultural programs. The results indicate that a 10% increase in rice pesticide use unfavorably alters a key medical disability index (Activities of Daily Living or ADL) by 1% for rural residents 65 and older. This is equivalent to 2.13 and 0.64 million dollars in medical and family care costs, respectively. Further, we provide suggestive evidence of an intergenerational transfer of caring burden by showing pesticide use reduces out-migration of the offspring in affected households. The results are robust to a variety of robustness checks and falsification tests.

JEL Codes:

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