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simulations draw on parameter probability distributions based on field data – including emissions rates, cooking durations, ventilation rates, time-activity patterns, and breathing rates – to establish the resulting personal exposure profiles experienced by young children. Applying the integrated exposure-response relationship for $PM_{2.5}$ and pneumonias allows for the calculation of cumulative incidence.

Findings: The approach described here translates into a mathematical model current mechanistic understanding of the household and community level effects of LPG use on young children's exposure to $PM_{2.5}$ and the consequent prevention of pneumonias.

Interpretation: Although less commonly used within the realm of household air pollution, mathematical models can inform the design and interpretation of intervention studies and programs. Moreover, such a modeling approach can serve as a platform for the integration and analysis of scenario-specific information such as other $PM_{2.5}$ sources, stove-fuel combinations, and health outcomes. Future model advances would incorporate geographic information systems or viral transmission dynamics.

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Abstract #: *1.012_PLA*

Reducing blood lead levels in children exposed to electronic waste recycling in Montevideo

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Background: The Pantanoso River Basin has been identified as a heavily contaminated site in Montevideo, Uruguay. The river basin is home to around 135 informal settlements with a population totaling more than 41,000. The largest contributing source of pollution in this area results from the informal recycling of electronic waste (e-waste). Cases of lead poisoning, especially in children, became evident in the early 2000s. The aim of this study was to reduce blood lead levels in children by performing targeted lead remediations at informal settlements along the Pantanoso River Basin.

Methods: This study included two components of intervention. The first involved identification and remediation of informal settlements located at the Pantanoso River Basin in Montevideo. Soil monitoring was done in 9 settlements using X-ray fluorescence equipment and 8 settlements were remediated. The second intervention comprised of blood lead level screening for 40 people living in the area. Blood samples were taken before and after the cleanup activities via fingerstick with FDA approved Lead Care II equipment.

Findings: The soil lead levels were as high as 18,900 ppm (recommended level 400 ppm). The cleanup activities resulted in remediated soil levels below 400 ppm. In total, 381 tons of contaminated soil and debris were removed. The average blood lead level (geometric mean) in the population tested was 8.85 μg/dL before intervention and 5.67 μg/dL after the remediation activities.

Interpretation: The clean up activities reduced average blood lead levels by 3.18 μg/dL, suggesting that this type of intervention is an effective tool for reducing blood lead levels in people living in close proximity to e-waste recycling activities. Remediation of lead contaminated soils should continue to be prioritized in an effort to reduce health effects in population that have been engaged in e-waste recycling.

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Motor performance of very preterm and dysmature infants in the multi-ethnic society of Suriname

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Background: Preterm and dysmature infants have an increased risk for developmental delay. In the multi-ethnic society of Suriname 3% of the children are born very preterm (<32 weeks) and/or dysmature (<1500 gram). These infants are referred to a pediatric physical therapist to monitor motor development and in case of motor delay will receive early intervention. The aim of this study is to determine the prevalence of motor delay and contributing risk factors.

Methods: In 2014 a nationwide prospective cohort study was initiated monitoring infants with a gestational age <32 weeks and/or birth weight <1500g using 3 infant motor development tests: the Alberta Infant Motor Scales and the fine and gross motor scales of the Bayley Scale of Infant and Toddler Development version III. Preliminary data were analyzed.

The study is approved by the Commission of Human Subjects Research of Suriname's Ministry of Health.

Findings: Sixty-two infants (32 boys) were referred. Mean gestational age was $30^{6/7}$ weeks (range $25^{4/7}$-37) and mean birth weight 1241 grams (range 640-1990). Fifty-three (85%) were tested at the mean corrected age of 3.5 months (range 2.6-6.7). Thirteen infants (24.5%) scored a delayed motor performance on at least one of the 3 tests during this first assessment. Eighteen infants (29%) had a second assessment at the mean corrected age of 12.4 months (range 11.9 -13.8) of which seven infants (38.8%) scored delayed.

Interpretations: Surinamese infants had an overall high score on both assessments. Earlier studies in the Netherlands showed a 75% delay at age 6 months, and a 78% delay at age 12 months. These testing results should be interpreted with caution because different ethnic background and childrearing practices may influence motor development. Our ongoing validating studies for the Movement Assessment Battery for Children 5 years of age show differences in outcome with the United Kingdom and Dutch reference groups. These observations indicate that developmental tests for infants and children should undergo cross-cultural validation, most certainly in the multi-ethnic Surinamese population.

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