# Expanding East Palestine's Post-Derailment Health Surveillance: Preparation for Youth Inclusion


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## Background

The 2023 Norfolk Southern train derailment in East Palestine, Ohio released hazardous chemicals, prompting the Healthy Futures Research Study to quantify environmental chemical exposure among local residents. The investigation aims to measure genotoxicity through somatic mutation rate analysis, providing a direct biological marker of DNA damage from acute chemical exposure.

While the study initially focused exclusively on adult participants (18+), I joined the research team to expand its scope by incorporating children into the investigation.

## Population

- Study initially targeted 1,000 adults (18+ years) residing in four counties at the time of the February 3, 2023 train derailment: Columbiana and Mahoning (Ohio), and Beaver and Lawrence (Pennsylvania)
- Expanded to include children under 18 years from the same counties, with a target of 190 pediatric participants
- Total regional population exceeds 550,000 residents, with 20% under 18 years and 5% under 5 years
- Region is predominantly White, with median income over $50,000.
- Access to healthcare is profoundly limited with approximately one primary care provider per 3,000 residents
- Significant health disparities with high rates of:
  - Asthma in adults (~16%) and children (~20%)
  - High blood pressure (~41%)
  - Overweight/obesity (~36%)

## Learning Objectives

1. Create culturally sensitive and engaging final recruitment materials tailored to the target population.
2. Develop a comprehensive IRB document for the study.
3. Assist in implementing recruitment to engage participants within the study region.
4. Apply knowledge from MPH courses to enhance research design, recruitment strategies, and IRB revisions.

## Activities

- Creating an updated flyer for recruitment purposes.
- Attending multiple county fairs to recruit within the targeted areas.
- Establishing contact with a medical sales representative from Tasso.
- Developing a supplemental document for the IRB revision that explains the Tasso device.
- Creating a telephone script for researchers to assist parents in using the Tasso device over the phone.
- Assisting in establishing a mail-in blood collection plan for the Tasso devices.
- Creating documents for a funding proposal to explain the need for resources.
- Cleaning pre-existing survey data completed by adults enrolled in the study.
- Creating a codebook for the cleaned data using SPSS.

## Deliverables

- Supplemental IRB documentation detailing the implementation of the Tasso blood collection device for pediatric participants
- Redesigned recruitment flyer with age-appropriate messaging and updated visual elements to appeal to families with children
- Cleaned dataset of adult participant survey responses with standardized variable formats and resolved inconsistencies

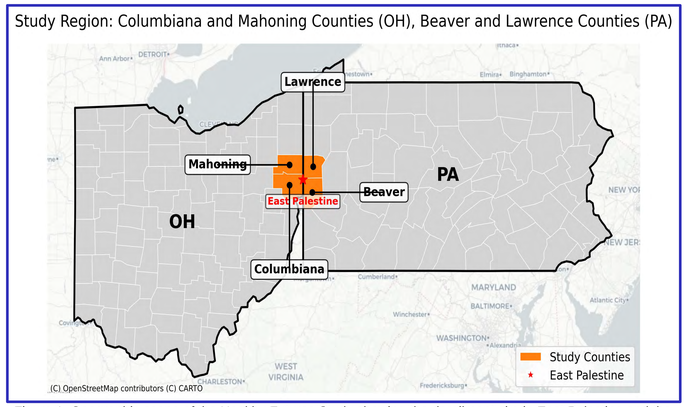


Figure 1. Geographic scope of the Healthy Futures Study showing the derailment site in East Palestine and the four target counties (Columbiana and Mahoning, Ohio; Beaver and Lawrence, Pennsylvania) where participants were recruited.


Figure 2. HFRS child recruitment poster.

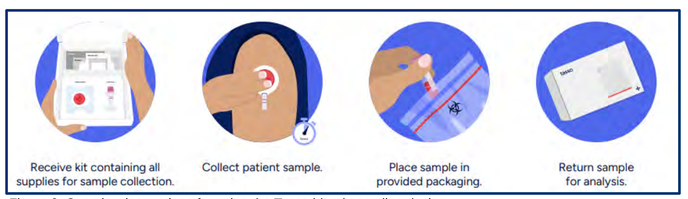


Figure 3. Overview instructions for using the Tasso blood sampling device.

## Lessons Learned

Through my practicum experience with the Healthy Futures Study, I gained valuable insights into the complexities of public health research, particularly when expanding established studies to include vulnerable populations such as children:

**Community Engagement Insights**

- **Trust-building is foundational:** In communities affected by environmental disasters, establishing trust through transparent communication and consistent presence at local events proved essential for successful recruitment.
- **Cultural sensitivity matters:** Tailoring recruitment materials to reflect the specific concerns and communication preferences of rural Ohio and Pennsylvania communities significantly improved engagement rates.
- **Meeting people where they are:** County fairs provided an effective venue for recruitment, demonstrating the importance of integrating research outreach into existing community gatherings rather than expecting community members to seek out participation opportunities.

**Protocol Adaptation Challenges**

- **Pediatric considerations are complex:** Adapting adult-focused protocols for children required more extensive modifications than initially anticipated, particularly regarding consent processes and sample collection procedures.
- **IRB documentation depth:** The level of detail required for IRB approval of pediatric protocols exceeded expectations, highlighting the importance of thorough preparation when working with protected populations.

**Professional Development**

- **Interdisciplinary collaboration:** Working alongside researchers from various disciplines enhanced my understanding of how different expertise contributes to comprehensive public health investigations.
- **Translating academic knowledge to practice:** Applying theoretical concepts from MPH coursework to real-world challenges demonstrated both the value and limitations of classroom learning when confronted with complex field situations.

## Public Health Implications

- Expanding the Healthy Futures Study to include children strengthens post-disaster health surveillance following the East Palestine train derailment. This inclusive approach recognizes children's unique vulnerability to environmental exposures and addresses a significant gap in disaster response protocols.

- The at-home blood collection methods developed using the Tasso device demonstrate practical solutions for conducting research in underserved communities with limited healthcare access. These innovations may serve as a template for future environmental health investigations, particularly in rural regions experiencing similar challenges.

- By collecting data across age groups, this work contributes to a more comprehensive understanding of community-wide exposure impacts. The resulting evidence can inform both immediate interventions for affected residents and long-term policy improvements regarding chemical transport safety, emergency response, and environmental health monitoring in vulnerable communities.

## Acknowledgements


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*Healthy Futures Research*
https://healthyfuturesresearch.org/