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APPLETREE: Building Local Capacity to Respond to Environmental Exposures

Editor's Note: As part of our continued effort to highlight innovative approaches to improve the health and environment of communities, the *Journal* is pleased to publish regular columns from the Agency for Toxic Substances and Disease Registry (ATSDR) at the Centers for Disease Control and Prevention (CDC). ATSDR serves the public by using the best science, taking responsive public health actions, and providing trusted health information to prevent harmful exposures and diseases related to toxic substances. The purpose of this column is to inform readers of ATSDR's activities and initiatives to better understand the relationship between exposure to hazardous substances in the environment, its impact on human health, and how to protect public health.

The findings and conclusions in this column are those of the author(s) and do not necessarily represent the official position of CDC, ATSDR, or the National Center for Environmental Health.

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Introduction

In 1987, the Agency for Toxic Substances and Disease Registry (ATSDR) developed a nonresearch cooperative agreement program to help accomplish its public health mission. That program is known as the Partnership to Promote Local Efforts to Reduce Environmental Exposure (APPLETREE). APPLETREE funds 30 state health departments that work closely with communities; local, state, and federal agencies and organizations; tribal governments; and other entities to address site-specific issues and recommend actions to protect public health. It is the largest cooper-

ative agreement program within ATSDR and builds state capacity to:

- respond to threats from human exposure to hazardous substances in the environment,
- engage communities with site contamination and potential health effects, and
- implement activities to address local environmental health issues of concern.

APPLETREE activities are primarily focused on protecting public health through site health assessments, community engagement, and capacity building and prevention activities such as Choose Safe Places for Early Care and Education (CSPECE; Grants.gov, 2022).

Site Health Assessments

Site health assessments help determine if and how people might be exposed to harmful site-related releases and recommend actions to protect people's health. As part of the ATSDR (2022a) public health assessment process, ATSDR and its APPLETREE partners do the following:

- Establish communication mechanisms, including engaging communities, before and throughout the process.
- Collect various types of site information.
- Obtain, compile, and evaluate the usability and quality of environmental and biological sampling data.
- Conduct sequential scientific evaluations, including exposure pathways evaluation, screening analysis, exposure point concentrations and calculations, and in-depth toxicological effects evaluation.
- Conduct exposure investigations, when appropriate, to fill data gaps and better understand potential site exposures.

Site health assessments are done for various hazardous waste sites, including those on the U.S. National Priorities List (NPL), brownfields, community-petitioned sites, and other facilities. ATSDR and its APPLETREE partners consider demographics, environmental health burden, health equity, and other factors for each site. They then write public health assessments and health consultations to summarize site health assessment findings and recommend health-protective actions. For example, the New Jersey Department of Health (2023) prepared a public health assessment focused on the public health implications of exposure to arsenic, lead, and other contaminants in soil, sediment, drinking water, and surface water at

the former Kil-Tone Company NPL site. The APPLETREE program at the New Jersey Department of Health worked closely with local health departments and federal agencies, shared public health assessment findings, and provided outreach to community members on ways to reduce their exposures and protect their health.

The closeness of APPLETREE partners to site-specific issues enhances the public health assessment process and the ability of ATSDR to protect people's health. Strong local partnerships also support timely site health assessments and recommendations.

Community Engagement

Community engagement is critical to understanding the needs of a community and involving them in the public health assessment process. ATSDR (2021) and APPLETREE partners seek an in-depth understanding of the unique attributes, historical experiences, and goals of a community to inform a successful engagement strategy. Community engagement helps accomplish the following goals (ATSDR, 2022a):

- Build trust, support, and open dialogue between community members and the site team.
- Identify and understand the health concerns, unique needs, and preferences of the community.
- Promote community participation in the public health assessment process.
- Obtain community support for taking actions that will protect people from harmful exposures to site-related contaminants.
- Engage new resources and allies.
- Address overall community health concerns and improve community health outcomes.

ATSDR and APPLETREE partners develop outreach materials such as facts sheets, videos, and training, as well as participate in public meetings and workshops (Grants.gov, 2022). They also conduct Soil Screening, Health, Outreach, and Partnership (soilSHOP) events that provide community members with free lead screening of soil gathered from their gardens or outdoor play areas. These soilSHOP events provide health education and outreach about potential lead exposures and ways to protect communities from lead (ATSDR, 2022b). For example, the APPLETREE program at the Tennessee Department of Health conducted a soilSHOP to screen soil for lead

from the Southside Chattanooga Lead NPL site neighborhood. Their efforts helped inform community members about the importance of testing their soil for lead and actions that can reduce or prevent lead exposure. Community engagement activities ensure that community members understand the findings of health assessments and, where applicable, adopt behavioral changes to reduce harmful environmental exposures and improve health (ATSDR, 2022a).

Choose Safe Places for Early Care and Education

Newly licensed early care and education centers might inadvertently locate learning facilities in areas where children could be exposed to harmful environmental substances (ATSDR, 2017). To help support children's health, APPLETREE integrated the CSPECE initiative into the program in 2017. CSPECE promotes environmentally safe siting of early care and education (ECE) centers through local partnership building, improved data use, pilot programs, and other activities.

APPLETREE state partners create innovative solutions such as training programs, voluntary property questionnaires, videos, and other resources to help ECE facility owners make informed decisions. For instance, the APPLETREE program at the Pennsylvania Department of Health developed a voluntary online survey for childcare owners and operators that encouraged having a healthy environment for ECE centers. Several state programs have realized positive effects of CSPECE on local, state, and federal childcare policies and procedures, and in preventing unsafe siting of ECE centers. Sustainability planning for partner CSPECE programs is encouraged and important to achieve positive health outcomes.

Appletree Effects and Successes

APPLETREE has had positive effects on public health in many communities. In its 36 years, APPLETREE has funded programs in 39 states and awarded more than \$250 million. Nearly two thirds of all ATSDR site investigations are conducted through the APPLETREE program. Those investigations have reduced or prevented harmful environmental exposures from many hazardous waste sites.

Over the past 3 years, APPLETREE assessed approximately 2.5 million people for hazardous exposures. Funded partners also developed innovative ways to engage and educate communities about public health risks from potential exposures to site contaminants. CSPECE programs are helping childcare operators make informed decisions about potential ECE locations. APPLETREE partners continue to achieve positive effects through innovative prevention-based activities.

APPLETREE started a new 5-year program period on April 1, 2023. To learn more, visit www.atsdr.cdc.gov/states/index.html. 🌸

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