

Module 5: Measuring Success: Evaluating Environment and Health Change

**Agency for Toxic Substances and Disease Registry
(Created 2020)**

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Step Five

Measuring Success



Assessing project results. Source: Getty Images, 2017.

Course Objectives

After finishing this module, you should be able to

- ❑ Describe **three general public health categories** for which there are **community-driven public health indicators** associated with **land reuse and redevelopment**.

- ❑ Describe at least **three public health indicators** that are associated with **land reuse and redevelopment** in each of **three public health categories**:
 - **Environment, Health, Economy**

- ❑ Access the **Action Model** to include **community-driven public health indicators** in **redevelopment plans**.

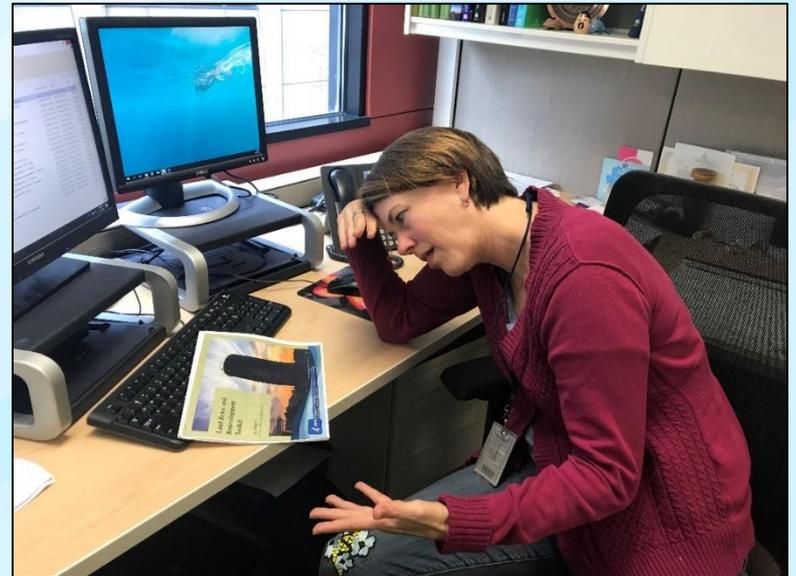
- ❑ Explain the **role, responsibilities, and scope of practice** of a development community **team member**.

Course Details

- ❑ **Pre-test**
- ❑ **Post-test: 70% or higher to receive a certificate**

Create a 4-digit number to put on your pre- and post-tests

- Memorize the number or keep a written copy
- Use the same number on both the pre- and post-test



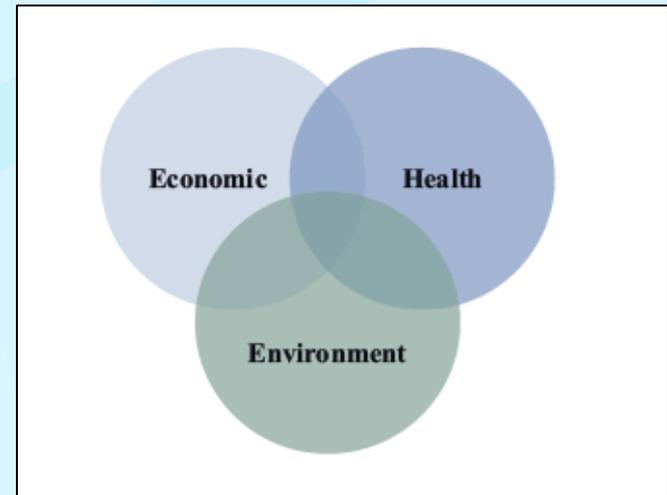
An environmental professional frustrated over taking a pre-test. ATSDR, 2019.

Pre-test

- ❑ **Pre-test Module 5**
- ❑ **Put your 4-digit number on the top right corner of your pre-test**

Measuring Change

- ❑ **Environmental or health professionals can measure changes that occur throughout land reuse/redevelopment**
- ❑ **3 typical measurement categories**
 - Environment
 - Health
 - Economy



Why Measure Change?

- ❑ Track changes in the physical and mental health (well being) of the community**
- ❑ Track changes in the environmental health of the community**

Knowledge Check #1

Select the best answer:

The environmental or health professional can measure community changes in which three typical categories:

- a) Economy
- b) Health
- c) Gentrification
- d) Property availability
- e) Environment
- f) Community acceptance

Environmental, Health, and Economic Indicators

- ❑ Definable
- ❑ Are measurable
- ❑ Have a data source



Example

Lead issues → Indicator is blood lead levels in children

- ❑ Is it definable? What?
- ❑ Is it measurable? How?
- ❑ What is the data source?

Example Indicators

Issue	Indicator
River pollution	Water quality data Fish consumption advisories
Lack of parks and/or green space	Number and types of vacant lots Number and use of green parcels Number of parks Number of bike lanes/trails
Vacant and contaminated properties	Inventory of sites Inventory of contaminants and associated health effects Map of sites
Habitat concerns	Wildfire survey Environmentally friendly lighting Habitat preservation

Knowledge Check #2

Select the best answers:

What indicators currently collected by communities can environmental or health professionals draw on to measure changes in environment ?

- a) Creation of a site inventory that incorporates a public health focus
- b) Pre- and post-redevelopment blood lead level data
- c) The number, size, and uses of green space
- d) The number of structures demolished and the number redeveloped

Knowledge Check #3

Select the best answers:

What indicators currently collected by communities can environmental or health professionals draw on to measure changes in health (physical and mental health/well being)?

- a) Pre- and post-redevelopment blood lead level data
- b) The number, size, and uses of green space or recreational areas
- c) Crime statistics
- d) The number of structures demolished and the number redeveloped

Knowledge Check #4

Select the best answers:

What indicators can an environmental or health professional draw on that are currently collected by communities to measure changes in economy?

- a) The number, size, and uses of green space or recreational areas
- b) Crime statistics
- c) Property value of housing
- d) Demographic data on income, poverty, employment, and occupation
- e) Pre- and post-redevelopment blood lead level data

Identifying Health Outcomes

The success of a project may depend on tracking and evaluating the community's overall health:

- Physical health
- Mental health/community involvement
- Environmental improvement
- Built environment
- Economy
- Education
- Safety/Security
- Environmental resources
- Housing

Example of Identifying Health Outcomes

Community wants more access to healthy foods

- ❑ **Issue:** We need more community gardens and grocery stores
- ❑ **Outcome:** Increased access to healthy foods (with associated indicators to track, such as # of full service grocery stores, # of community gardens)

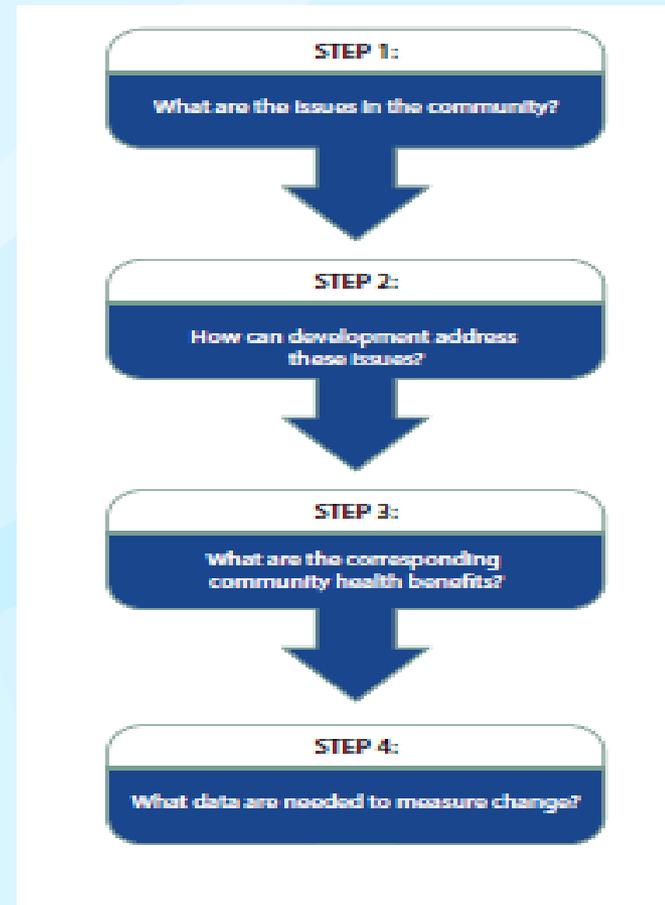


Outcomes: A Change or a Result

- ❑ **Lowered blood lead levels** in children
- ❑ **Increased property values**
- ❑ **New hospital with 10 new primary care providers**
- ❑ **New grocery store with a full range of healthy food**
- ❑ **10 sites demolished or redeveloped**, lowering risk of exposure to **lead, asbestos, volatile compounds**, and **petroleum**
- ❑ **A new business** opened and **20 jobs created for youth**

Action Model Toolkit

- ❑ Four steps of health-focused redevelopment
- ❑ Step 4 creates community-driven public health indicators that can be tracked to measure changes in health outcomes
- ❑ ATSDR has consolidated the indicators from 40 action models
 - Refer to hand-outs at your table



Community Health and Land Reuse Indicators

Classroom exercise

- ❑ Small groups**
- ❑ Review and use Land Reuse Action Model Template**
- ❑ Use indicator scorecard and indicator summaries**

Knowledge Check #5

Environmental or health professionals can use the **Land Reuse Action Model Toolkit** and indicator materials to help their communities select **environment, health, economic, and other** categories and indicators to incorporate in redevelopment plans.

- a) True
- b) False

Let's Revisit: Asbestos Mine



A river white with asbestos fibers. Source: ATSDR, 2006.

Case Study: Asbestos Mine

- ❑ **The ABC site in Keweenaw Peninsula (mock)**
 - Active asbestos mine from early 1900s to 1993
 - Chrysotile mined
 - Tons of waste rock and mine tailings
- ❑ **Contaminated runoff from the mine tailings**
 - Surface water, stream, and sediment contamination
 - Downstream wetland areas contaminated
 - Source of airborne asbestos
 - Recreational area for activities such as hiking on tailings piles.

Case Study: Recommendations and Messages for Regulatory and Health Agencies

- ❑ **Restrict access to the ABC Mine property**
 - Prohibit and discourage recreational use of site to minimize exposure
- ❑ **Prevent the removal and reuse of tailings and all other material beyond the ABC property**
- ❑ **Don't use wetlands located downstream for camping or other recreational activities.**

Case Study: Asbestos Mine - Outcomes

- ❑ **Education and awareness campaign developed**
 - Federal, state, environmental and health agencies
- ❑ Campaign informed residents about **asbestos exposures** and encouraged residents to minimize exposure by **staying off the mine property**
- ❑ Site identified as a **hazardous place** where **recreation can be dangerous to people's health**
- ❑ Asbestos **exposure prevented for 160 people per year**

Knowledge Check #6

Select all of the messaging actions that apply

- a) Communicated findings and concerns to state and federal agency partners**
- b) With partners, encouraged residents to minimize exposure to asbestos by staying off the mine property**
- c) Allowed people to continue skiing or hiking on the sites as long as the snow was at least 3 inches deep**
- d) Prevented 160 people per year from being exposed to asbestos**
- e) Went hiking on the site with visitors to demonstrate that there was no risk of recreating on the site**

Issues vs. Indicators vs. Outcomes

- ❑ **Issues** are **community concerns related to redevelopment**
 - E.g., contamination, contaminated site location, exposure concerns
- ❑ **Indicators** can be derived to **track progress towards achieving an improvement in health (the outcome)** related to the issue
 - E.g., list and location of contaminated sites, blood screening results
- ❑ **Outcomes** are **changes in health, environment, economy** and many **other public health categories**
 - E.g., increased access to healthy foods, lowered obesity rates, reduction in chemical exposures, increased property values

Tabletop Exercise: Issues, Indicators, and Outcomes

Play the “Name that Issue/Indicator/Outcome” game

- ❑ **Stay in your groups**
- ❑ On each table, there are **decks of cards**
- ❑ Sort the cards into three piles: issues, indicators, or outcomes
- ❑ **Work together!**

Post-test

- ❑ Place your 4-digit number on the top of your test
- ❑ You can retake the test multiple times
- ❑ Test is open book
- ❑ Passing score of 70% is required
- ❑ Bring your test in tomorrow for grading

Thank you!

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