

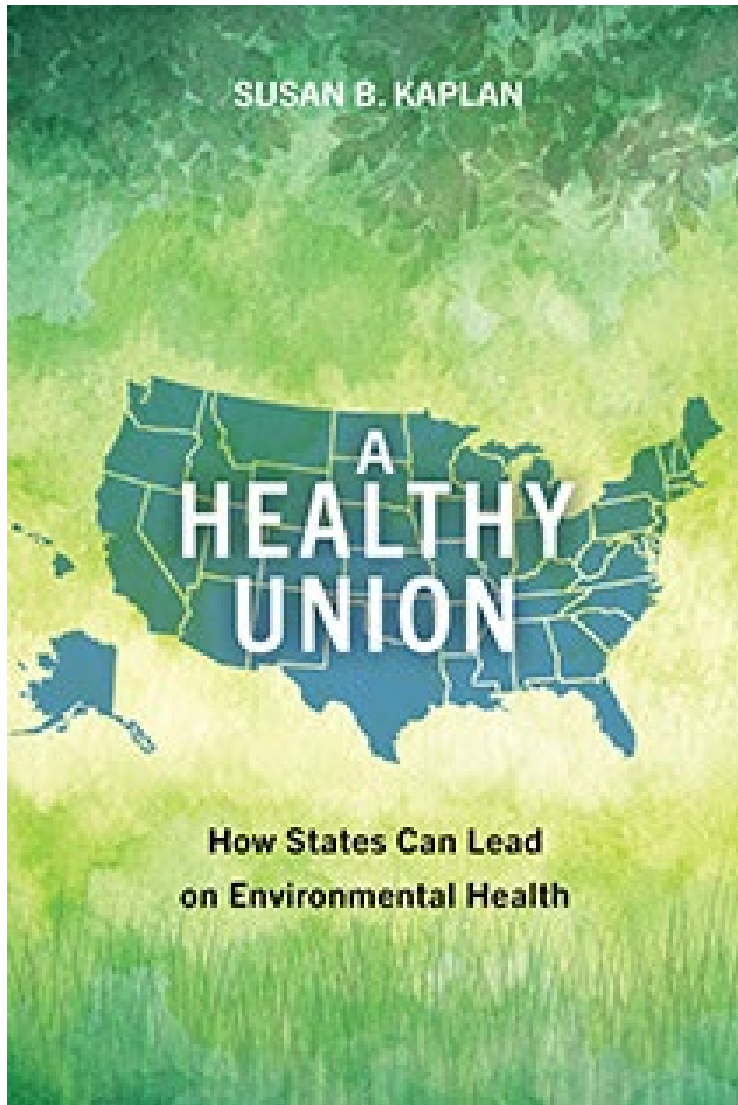
How States Can Protect Environmental Health: Part 1

NAME OF COURSE:

DATE:

Learning objectives

1. Define and describe the field of environmental health.
2. Explain how and why the field of environmental health fragmented.
3. Compare and contrast the roles of federal, state and local government in protecting environmental health.
4. Debate the merits of regulating environmental health at the federal versus state levels.



Assigned text

For classes addressing this topic, read the book *A Healthy Union: How States Can Lead on Environmental Health*, by Susan Kaplan, published by Island Press, November 2025, <https://islandpress.org/books/healthy-union#desc>.

Definitions and background

What is environmental health?

Environmental health is the science and practice of preventing human injury and illness and promoting well-being by

- identifying and evaluating environmental sources and hazardous agents and;
- limiting exposures to hazardous physical, chemical, and biological agents in air, water, soil, food, and other environmental media or settings that may adversely affect human health.

- National Environmental Health Association

Discussion questions

Give an example of an environmental health issue in the news.

- In what way does it fall within the definition of environmental health?*
- Does this issue fit within medicine, public health, environmental policy, or another professional field? Why?*
- What agency or agencies regulate this issue?*



Contaminants can be found in:

Soil/land

Water

Air

Food

Photo: Smog Over Delhi, WHO

Potential routes of exposure

Photo: BBC



Inhalation

Skin
absorption

Ingestion

Across the
placenta

Environmental health issues



What is a policy?

“A definite course or method of action selected from among alternatives and in light of given conditions to guide and determine present and future decisions” (Merriam-Webster Dictionary)

- The considered decision of an agency or organization
- In writing
- Binding / enforceable
- Applies to a group of people



More about policies

Other terms: act, statute, rule, regulation, ordinance

Examples of public policies: Clean Air Act; regulations developed by U.S. EPA under the Clean Air Act; state speed limits

Examples of private policies: university plagiarism policy, corporate sexual harassment policy

It's not just policy enactment



It can take a long time to enact a policy. There has to be sufficient support for it. This often starts with information, education, and demonstration projects.

Strong support can help to ensure that an enacted policy is also implemented and enforced.

Photo: California Environmental Justice Alliance

Role of federal, state and local government in environmental health policymaking



The Commerce Clause of the U.S. Constitution

It gives Congress the power “to regulate commerce...among the states.”

This is very broad. Consider a shirt or a coal-fired power plant – from materials extraction to delivery, they cross many state lines.

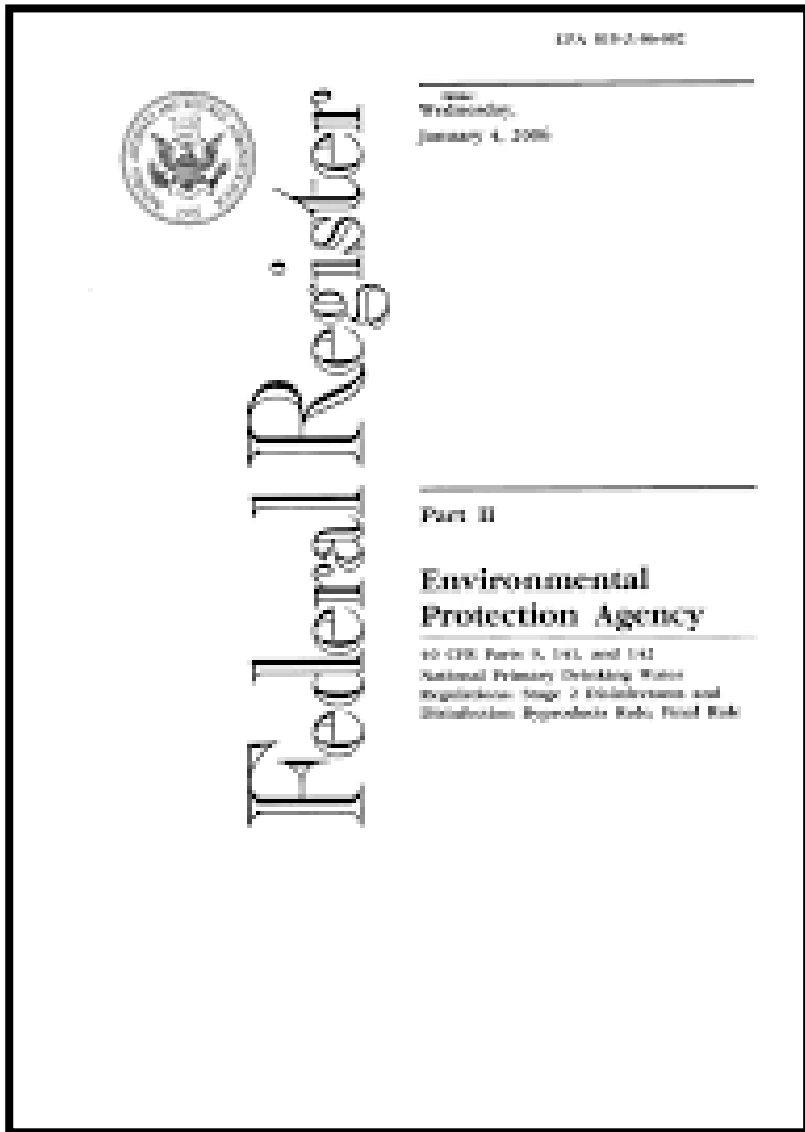


The Supremacy Clause of the U.S. Constitution

Acts of Congress are “the supreme Law of the Land.”

According to the Supreme Court, this allows federal pre-emption (overriding) of state law. But in practice, this varies from law to law and takes place mainly when a federal law specifically precludes a state from legislating on an issue.

Photo: Science



Federal laws and regulations

Congress enacts laws.

Agencies promulgate rules and regulations, which add detail to laws. Agencies follow the process required under the Administrative Procedures Act (APA). The APA prescribes a “notice and comment” process in which the public can provide input to agencies via submitting comments and speaking at hearings.

State environmental health role

States have roles in federal laws, like developing state implementation plans under the Clean Air Act.

They also have specific responsibilities in areas including disease surveillance, emergency preparedness, brownfields, and food safety.

State environmental health role, cont'd

Some states have laws that go beyond federal protections. Examples:

- State of Washington OSHA: Its requirements go beyond those of federal OSHA.
- California Proposition 65: It requires warning labels on items that could cause cancer or birth defects.

This will be the main focus of these lectures.

Discussion questions

What are the pros and cons of environmental health policies being made at the federal level versus the state level?

Give an example of a federal environmental health law or regulation that falls short of providing robust health protection.

- What is the nature of the shortcoming?*
- What could be the reason for this?*


YEAR	ACTION
2016	U.S. EPA plans to ban chlorpyrifos in agriculture.
2017	U.S. EPA reverses this plan.
2018	Hawaii bans chlorpyrifos and requires evaluation of pesticide drift at three schools.
2018	Court reverses U.S. EPA and bans chlorpyrifos nationally.
2019	Appeals court tells U.S. EPA to <u>make a decision</u> . U.S. EPA: No ban. California bans chlorpyrifos. Other states do the same or consider it.
2021	U.S. EPA bans use of chlorpyrifos on food crops.
2023	Court overturns ban.
2024	U.S. EPA proposes to restrict chlorpyrifos, excepting 11 food crops.

Chlorpyrifos as an example of laws flip-flopping between federal and state levels


Chlorpyrifos is an insecticide used in agricultural that is linked with neurodevelopmental problems in children.

What about local government?

Functions include lead concerns, vector-borne disease, indoor air quality.



Local governments can also try out new programs and policies, which can influence state policies.



Takoma Park, Maryland enacted an ordinance banning cosmetic use of pesticides. Advocates used that success to pass a similar law in Montgomery County, MD, in which Takoma Park is located.

Environment-health fragmentation

1920s: The split starts




During the Progressive era, conservationists successfully pushed for the federal government to increase its role in managing natural resources. Sanitary efforts were based in cities and more diffuse.

1970s: The environmental movement grows

Congress passes laws including the Clean Air Act, Clean Water Act, and hazardous waste laws, and establishes the U.S. Environmental Protection Agency. Public health fails to develop a similar, broad-based movement.

Photo: Zinn Education Project





Consolidation at environmental agencies

When the EPA was established, programs at federal health agencies that addressed areas like air and drinking water quality were moved to EPA.

The consolidation was meant to strengthen environmental health protection. Instead, it reduced attention to the public health aspects of environmental issues.

This pattern was replicated in states.

The Core Functions of Environmental Health and Protection

Regulatory Functions

1. Permitting, Monitoring, Enforcement, Registration, and Licensing
2. Recordkeeping, Reporting, and Developing Inventories
3. Remediation and Emergency Response
4. Laboratory Support
5. Standard Setting, Litigation, and Administration

Public Health Functions

6. Health Surveillance and Epidemiology
7. Health Risk Assessment, Toxicology, and Applied Research
8. Communication, Education, Training, and Consultation

Environmental and health agency functions

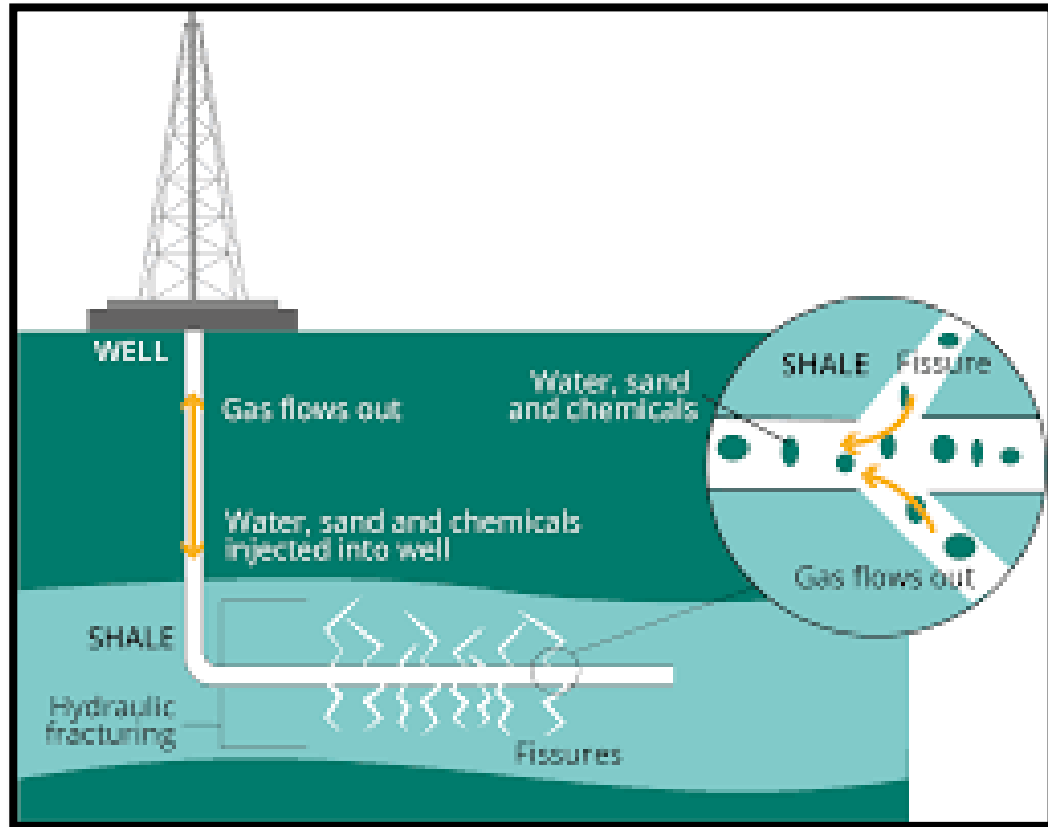
SOURCE: BURKE, SHALAUTA,
TRAN AND STERN, "THE
ENVIRONMENTAL WEB"

State environmental health structure

Due to this split, environmental health programs are now housed at a range of state agencies, such as:

- environment and natural resources
- agriculture
- labor
- health

An environmental agency might not have expertise in or prioritize health aspects of its work, while a public health agency may lack understanding of impacts of pollution and toxics on health.



Challenges created by silo-ing of environment and health

Consider hydraulic fracturing. In an example state, regulations are developed by the natural resource agency – but does it have expertise about potential toxic air and water emissions to nearby residents?

Graphic: European Environmental Agency

Additional contributors to slowing of federal environmental health protections

- Partisan divisions. For example:
- Clean Air Act Amendments of 1970: Passed 374-1 in the House and 73-0 by the Senate, signed by President Nixon
 - Inflation Reduction Act of 2022 (included support for renewable energy to address climate change): Passed the House 220-207 and the Senate 51-50, signed by President Biden

Additional contributors

State environmental agencies that have roles in carrying out federal laws tend to have more regulatory authority and funding than state public health agencies.

Industry influence often leads to watering down of federal environmental health protections.

Discussion questions

Describe how environment-health fragmentation might play out in a situation of a public library using cleaning products that are causing occupants to get headaches.

Questions:

- Who might be responsible for addressing this problem?*
- What knowledge and training might they have or lack?*
- Who do you think should be involved in order to resolve the issue?*

Enter the States

Pre-emption exemption: California waiver

California has historically led the states on environmental health protection. It was the only recipient of a waiver under the Clean Air Act that allows it to set motor vehicle emission standards more protective than federal standards. Seventeen states and D.C. have adopted California's standards.

Photo of EV charging infrastructure: CalMatters



Why do states enact protections?

- Culture: Some have a culture of environmental health protection.
- Wealthier states tend to spend more on environmental protection.
- Economy: Contributors to the state's economy have an impact.
- Politics: Democrats support environmental laws more often, but conservative states pass environmental laws that use framing like incentives instead of mandates. It is not just a “red state/blue state” dynamic.

Discussion question

What are the impacts of different states having differing state environmental health policies? Use California's emission standards as an example.

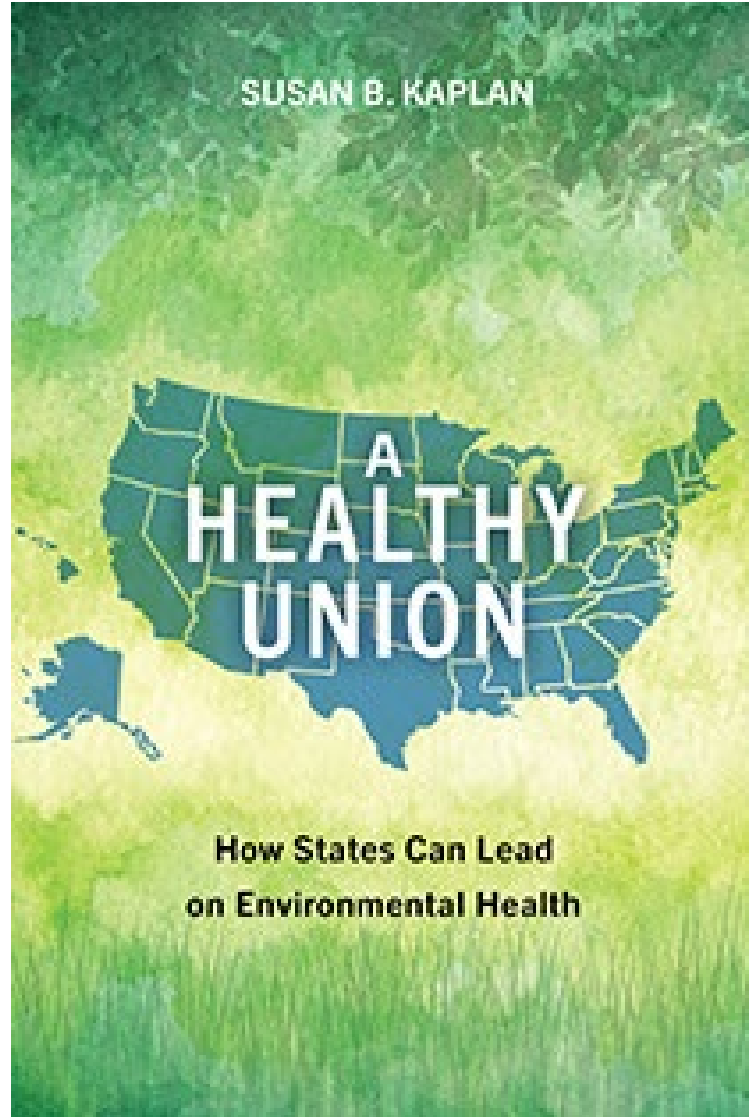
How States Can Protect Environmental Health: Part 2

NAME OF COURSE:

DATE:

Learning objectives

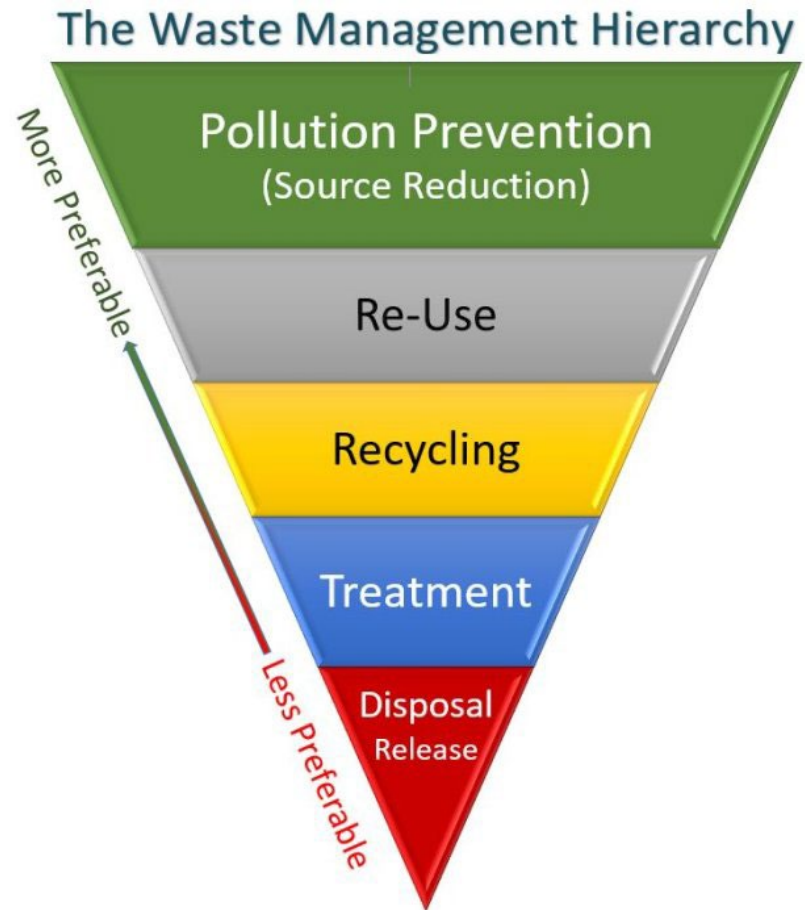
1. Describe several successful state environmental health policies.
2. Explain how the model state policies originated and the main contributors to their success.
3. Define the role of the federal government in a public health situation such as the COVID-19 pandemic.
4. Debate the pros and cons of regional environmental health solutions as opposed to single state environmental health policies.



Assigned text

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Partnerships and technical assistance: Massachusetts and Texas



Pollution Prevention

Upstream prevention of pollution, as opposed to cleaning it up later

Aligns with the precautionary principle, in which the burden of proving a chemical or item is safe is shifted to the proponents of an activity.

Both the Massachusetts Toxics Use Reduction Act and Texas's school pesticide law aim to reduce pollution upstream.

Graphic: U.S. EPA

Discussion questions

What are some examples of programs that clean up pollution after the fact?

What are the benefits of preventing pollution to begin with?

Massachusetts Toxics Use Reduction Act

Industrial facilities that manufacture, process, or otherwise use toxic chemicals included on a state list must report their chemical use and carry out toxics use reduction planning.

Planning involves reviewing how and for what purpose a business uses toxic chemicals and identifying ways to switch to safer products or processes.

Photo: TURI



Massachusetts TURA

Three state entities implement the law:

- The Toxics Use Reduction Institute at the University of Massachusetts Lowell carries out research and provides education and training.
- The Office of Technical Assistance and Technology visits facilities to provide assistance and evaluates benefits to industry.
- The Department of Environmental Protection oversees reporting and planning.

With the state, industry works to change products and processes to reduce use of toxic chemicals.

Discussion questions

TURA requires companies to report their use of hazardous chemicals rather than their releases of chemical pollutants,” the latter being the approach taken by most environmental health laws. Why is this significant?

How does MA TURA differ from traditional “command and control” environmental laws? What do you see as the upsides/downsides of TURA compared with command and control?

Texas school pesticide law



In 1991, Texas passed one of the first laws in the country requiring all public schools to implement Integrated Pest Management.



Every school must adopt an IPM policy and develop a written IPM plan. Every district must appoint an IPM coordinator, who receives regular training.



The law emphasizes analysis and recordkeeping. Schools must get permission before using a “yellow” or “red” product.

Keys to success



Partnership of industry, state agencies, university experts



Comprehensive education, information and in-person tech assistance



Combination of carrot and stick



Dependable funding source that is independent of government

Environmental health education

Lack of environmental and occupational health education

Only a few hours required for medical students

Reduction in environmental health content for public health students

Impacts:

- Difficulty in getting diagnosis
- Less input/advocacy for protective policies
- Reduced knowledge in agencies

Environmental-occupational health relationship

Many overlaps of worker and community exposures.

- Example: ethylene oxide case. Concern about worker exposure but venting to outside caused breast cancer cases in community.

Regulation:

- often different laws or agencies (OSHA / EPA)
- but sometimes the same (OSHA / EPA under the Toxic Substances Control Act)

Photo: University of Washington



New York clinics

- Diagnose and treat patients
- Carry out preventive/educational activities, like trainings on safe workplace practices
- Refer patients/families to local resources as needed
- Look for triggers of illness in workplaces, schools, and communities
- Support protective policies

Community action

Particular vulnerability to pollution



Pregnant women

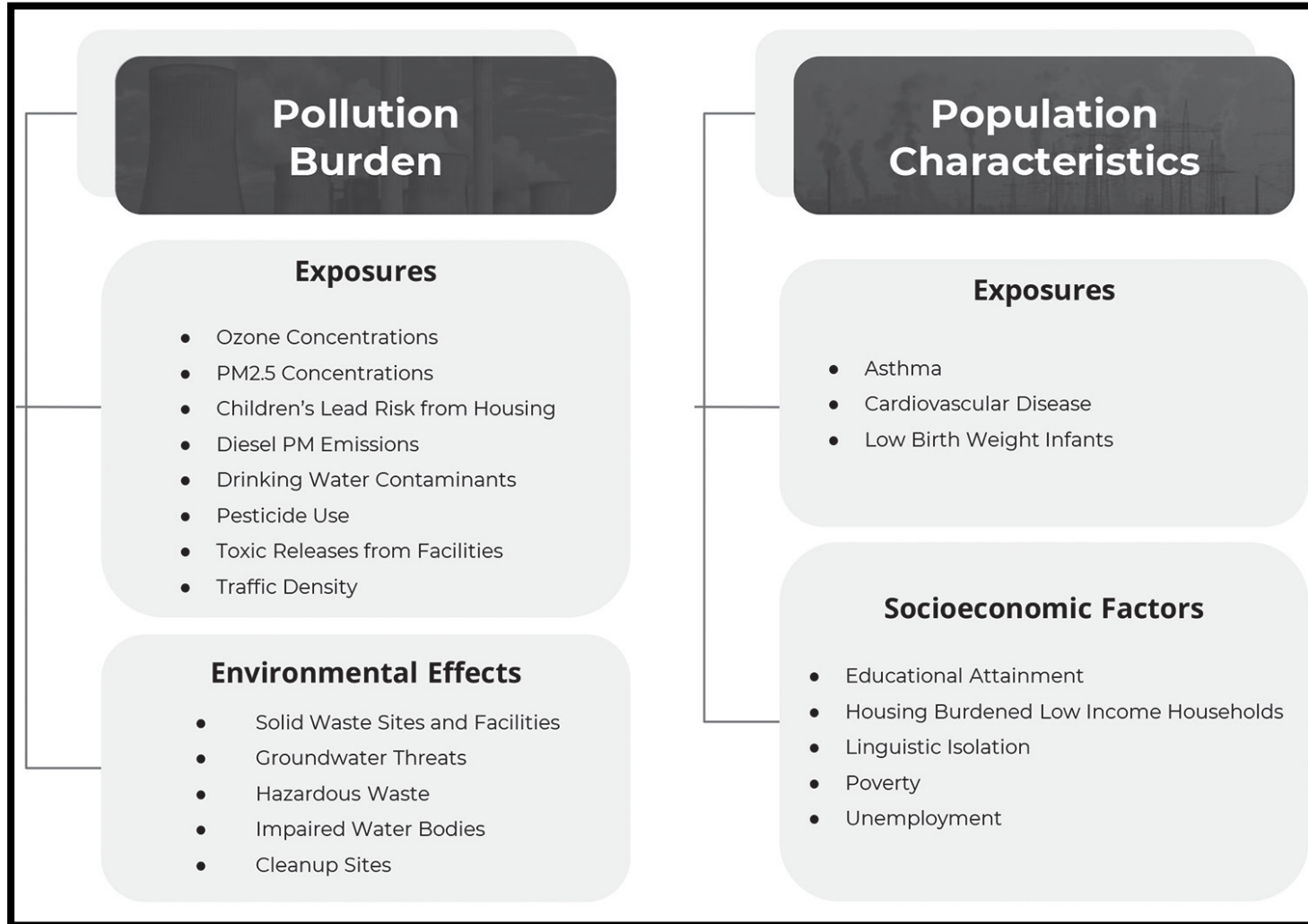
Children

Environmental Justice communities

Those with pre-existing illness

Elderly

Photo: CDC



Cal EnviroScreen 4.0 indicators

AB 617: California Air Protection Program

Environmental Justice communities are exposed to more air pollution.

Law enacted in 2017 requires the state to:

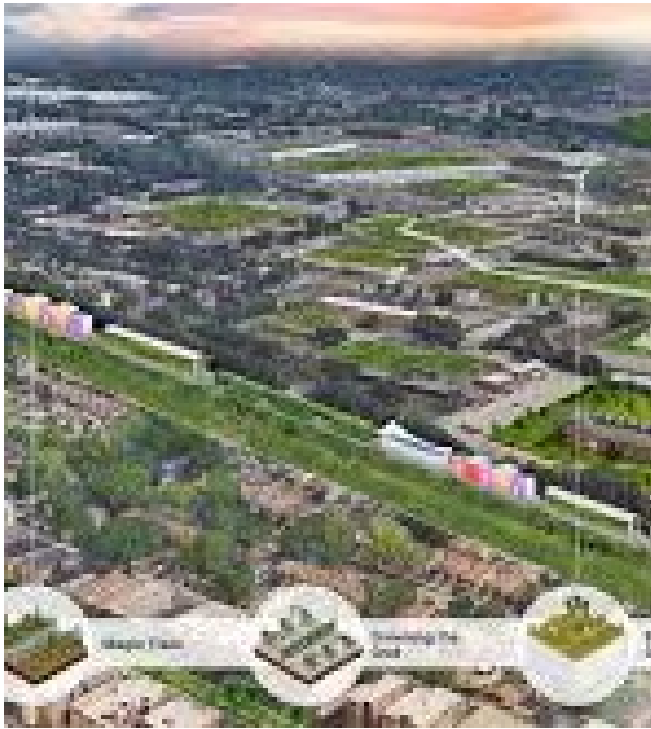
- develop a strategy to reduce air pollution in highly impacted areas
- increase air quality monitoring in these locations
- select locations for emission reduction plans
- support these communications with funds and technical assistance
- for areas that do not meet standards, implement “best available retrofit control technology”

Discussion questions

Describe cumulative impacts assessment. How does CIA represent a new and different approach to protection from toxics and pollution?

Why is local air monitoring important?

More ideas for California air protection



Address industrial sectors rather than just areas of elevated pollution

More focus on land use through partnerships with cities and counties

Involve additional state agencies that impact air pollution (“Health in All Policies”)

Photo: UIC College of Urban Planning and Public Affairs

Collaboration across agencies

The traditional “siloed” approach



The transportation department focuses on building roads and other infrastructure.



The agriculture department focuses on growing food.



Are they also thinking about health impacts of their actions?

Health in All Policies

Tennessee Livability Collaborative:

- Staff of 24 state agencies, departments and commissions meet bi-monthly to learn about each other's initiatives.

Benefits:

- Reduce duplication. For example, TN collaborative developed a set of livability indicators with East Tennessee State University's Center for Rural Health Research, which merged its own health care access indicators project with the collaborative to eliminate duplication.
- Increase efficiency, innovation, health benefits.

Challenges to HiAP approach

Demonstrating to agency staff that it is worthwhile AND not extra work

Lack of person dedicated to this effort (in TN and some other states)

In many cases, lack of dedicated funding -- creativity needed to address this

Lack of data sharing

Discussion question



How have Tennessee and Colorado overcome the challenges identified on the previous slide?

The need for federal guidance

COVID-19 mitigation in schools

State and local government are responsible for investigating disease outbreaks, implementing public health police powers, and indoor air quality.

The federal government gave confusing and unclear communication about:

- how COVID spread (surfaces vs. air)
- transmission – often gave data too broad to be useful in different settings
- most effective mitigation measures
- how best to spend the ESSER funds

Discussion question

What could the federal government do better in The next pandemic?



Graphic: US EPA

Regional solutions

Regional Greenhouse Gas Initiative

Cap-and-trade system to reduce carbon dioxide emissions

An overall cap on a pollutant is set, and each participant can buy and sell within their allowance.

This is a market-based mechanism rather than mandate.

Funds from sales of allowances go to participating states, which invest them locally to support clean energy.

Deregulation helped by opening up markets to new businesses.

RGGI successes



The large number of participating states helped prevent “leakage,” or states buying less expensive but likely dirtier energy (like from coal plants) from non-RGGI states.



Auctions of allowances raised money to support more clean energy options.



Reduced CO2 emissions. Made dirtier energy more expensive and supported development of clean energy.



A co-benefit: reduced air pollution like PM

Southeast Regional Partnership for Planning and Sustainability (SERPPAS)

An “unconventional” partnership of federal and state military, environmental and natural resources agencies and more in the Southeast.

Different parties could each achieve their goals by working together, not opposing each other.

Example: the “woodpecker wars” at Fort Bragg.

“Woodpecker Wars” keys to success

Group came together as the parties understood that each party depended on the others to meet their goals.

Woodpeckers require zones of forest; partner identified parcels between military bases, purchased and protected them along with the Army and U.S. Fish and Wildlife Service.



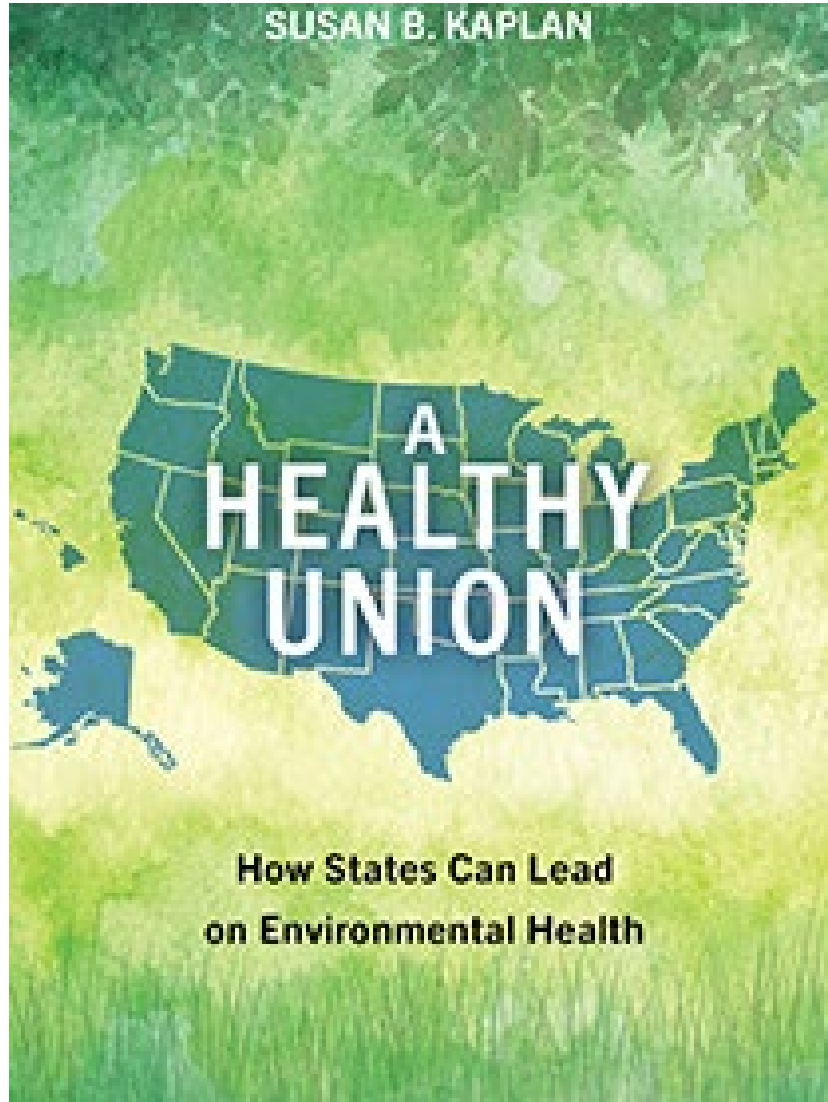
How States Can Protect Environmental Health: Part 3

NAME OF COURSE:

DATE:

Learning objectives

1. Describe policy solutions for enacting and implementing environmental health policies.
2. Identify steps for successfully advocating for an environmental health policy.



Assigned text

For classes addressing this topic, read the book *A Healthy Union: How States Can Lead on Environmental Health*, by Susan Kaplan, published by Island Press, November 2025, <https://islandpress.org/books/healthy-union#desc>.

Policy solutions for improved environmental health protection

Increase environmental health education

Start early – even preschool

Critical in university public health programs, which have reduced this requirement, and medical schools, which only provide a few hours.

Photo: USDA



Discussion question

Give one example of how environmental health education helped a policy move forward.



Carry out expansive economic analyses

These should account for a broad range of potential costs and benefits – to families, the health care system, and taxpayers. This can help make the case for both enacting a policy and continuing it over time.

Discussion questions

How was such an economic analysis useful in making the case for the New York clinics?

If a hazardous disinfectant used in a classroom causes a child with asthma to wheeze, what are some potential categories of economic costs?

Expand government- university- industry partnerships

Government agencies implement and enforce a policy.

Partnering with universities can add knowledge and resources. Public university extension programs bring knowledge to a state's communities.

Industry often has the on-the-ground knowledge about how to change a manufacturing process or switch to a safer product.

Discussion question

How does the Texas school IPM program utilize a government-university-industry partnership?



Local Governments
for Sustainability



**BIG CITIES
HEALTH COALITION**

Take local action

Working on an environmental health issue locally can provide data and lessons learned for an effort on a state level.

End state pre-emption of local policymaking

This is a growing concern in public health.

The National League of Cities has described the sometimes-hostile relationship between city and state governments, which may hold different views on an issue.

Concerned citizens should pressure their state representatives to vote against pre-emption measures.

Increase agency collaboration



Health in All Policies

Many government departments that are not considered “health” nevertheless carry out activities and make decisions that affect environmental health.

Discussion question

Parents voice concern about diesel vehicles driving by a school and emitting toxic air pollution. What agencies might have a role in addressing this issue?



Photo: Pinterest

Expand policy surveillance and legal epidemiology

How do policies impact public health? This is often unknown. Two mechanisms that can help answer this question:

- Policy surveillance: systematically tracking public health laws
- Legal epidemiology: studying how laws affect public health outcomes

Re-fund decimated state public health agencies

Public health agencies are grossly underfunded relative to health care. Their work is often not noticed because it prevents problems. Then when a public health crisis arises, staff and funds are inadequate to address the issue.

Spending on health care is rising—the American Medical Association reports that it grew by 4.1 percent in 2022—and public health spending has fallen.

Advocating for environmental health policy

Initial steps



Check whether a policy already exists. Do research or call the local or state public health or environmental agency. Check with relevant advocacy organizations about any efforts to date.



Sometimes there is a policy, but it is not being implemented or enforced; if so, that should be the focus.



Where there is not a policy, look to other states that have implemented policies and the lessons learned.

Build a coalition

While one or two people can be dismissed as outliers, a group is harder to ignore.

It often isn't necessary to create a group from scratch. Look for existing organizations that can serve as a launchpad for advocating on your issue.

Reach out to a broad range of stakeholders who might support a proposed policy.

Identify a champion

This is someone positioned to make the change you are seeking. Strong champions can be found in many different quarters. They could be state legislators or school nurses, for example.

Photo: CAI-bay-sen



Garner media and public attention on the issue

- It helps to start with a story and a protagonist.

- Contact local media, write op-eds, post about the issue on social media, reach out to policymakers.

- Communicate both the health concerns associated with the issue and the benefits of the solution you are advocating.

- Resources can include policy statements from professional organizations like the American Academy of Pediatrics and American Public Health Association.

Discussion question

Identify a local or state environmental health issue on which the class would like to take action.

How might you:

- 1. Build a coalition?*
- 2. Identify a champion?*
- 3. Garner media and public attention on the issue?*