Invisible, but Not Inevitable:

Tackling Radon Exposure to End Lung Cancer Now

Khadijah A. Mitchell, PhD, MS

Assistant Professor of Cancer Prevention and Control

FOX CHASE CANCER CENTER
TEMPLE HEALTH

Game Plan

- **Opening Kickoff**
  - Mitchell Laboratory Interventions
- **First Quarter: The Opponent**
  - Lung Cancer and Lung Cancer Health Disparities
- **Second Quarter: The Players**
  - Radon and the Radon Health Equity Workgroup (RHEW)
- **Halftime: Review the Prevention Playbook**
  - The CDC + EPA + RHEW Radon Risk Reduction Blueprints
- **Third Quarter: The Offensive Strategy**
  - RHEW's PA CARES Radon Library Lending Program
- **Fourth Quarter: The Defensive Strategy**
  - Policy
- **End Zone Celebration**
  - Test. Fix. Save a Life. Tell a Friend.
- **Postgame Press Conference**
  - Q & A

Opening Kickoff

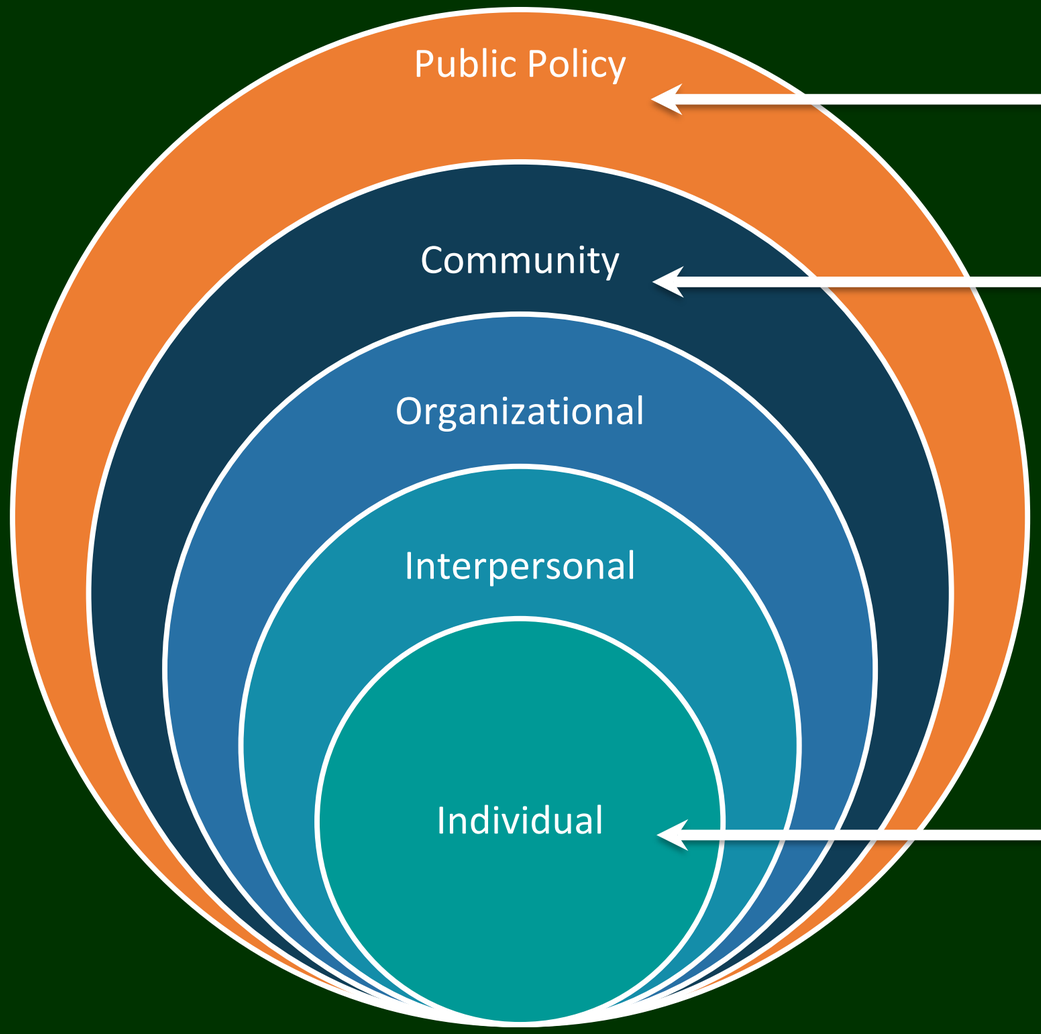
Mitchell Laboratory Interventions

“An ounce of prevention is worth a pound of cure.”

Benjamin Franklin

Mitchell Laboratory Interventions

Targeting Lung Cancer Prevention and Treatment



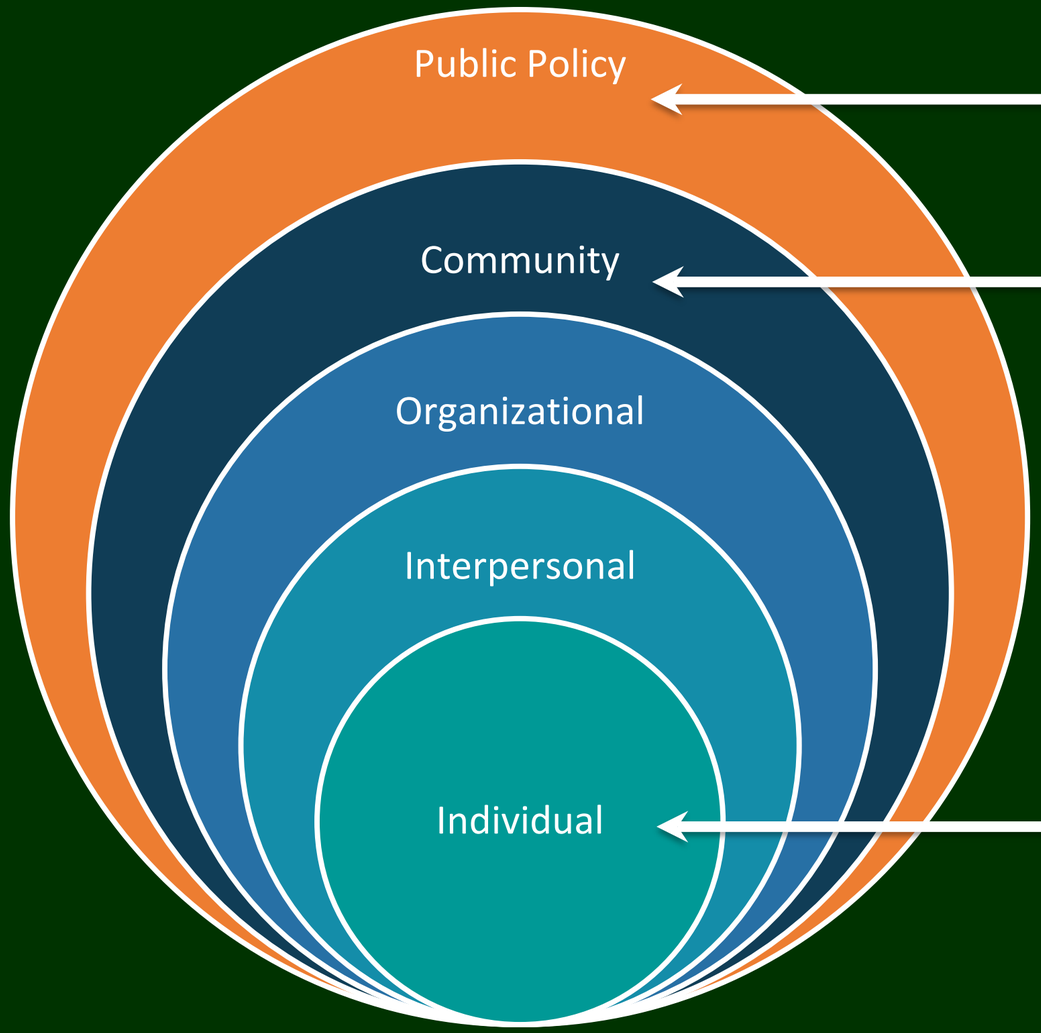
Cancer Prevention and Control (CPC) Policy:
Work with the Pennsylvania Department of Health (PA DoH) to help frame CPC objectives.

"Bench to the Block"
Community Engagement Research Lab:
Increase knowledge about cancer prevention, diagnosis, prognosis, and treatment options in high-risk populations.

"Bench to the Bedside"
Cancer Genetics Research Lab:
Increase knowledge about population differences in genetics for precision prevention and precision medicine purposes (biology, environment, and behavior).

Mitchell Laboratory Interventions

Targeting Lung Cancer Prevention and Treatment



Cancer Prevention and Control (CPC) Policy:
PA DoH Office of Health Equity Advisor
- Radon Health Equity Workgroup Chair
- Racial/Ethnic Minorities Committee Co-Chair
- Pennsylvania Cancer Coalition

“Bench to the Block”
Community Enaggement Research Lab:
Radon risk reduction for high-risk populations
- Racial and ethnic minorities, environmental justice area residents, rural area residents, lower-income neighborhoods

“Bench to the Bedside”
Cancer Genetics Research Lab:
Genetic biomarkers linked to radon exposure
- Precision Prevention:
Communities (High-risk populations)
- Precision Medicine:
Clinics (High-risk lung cancer patients)

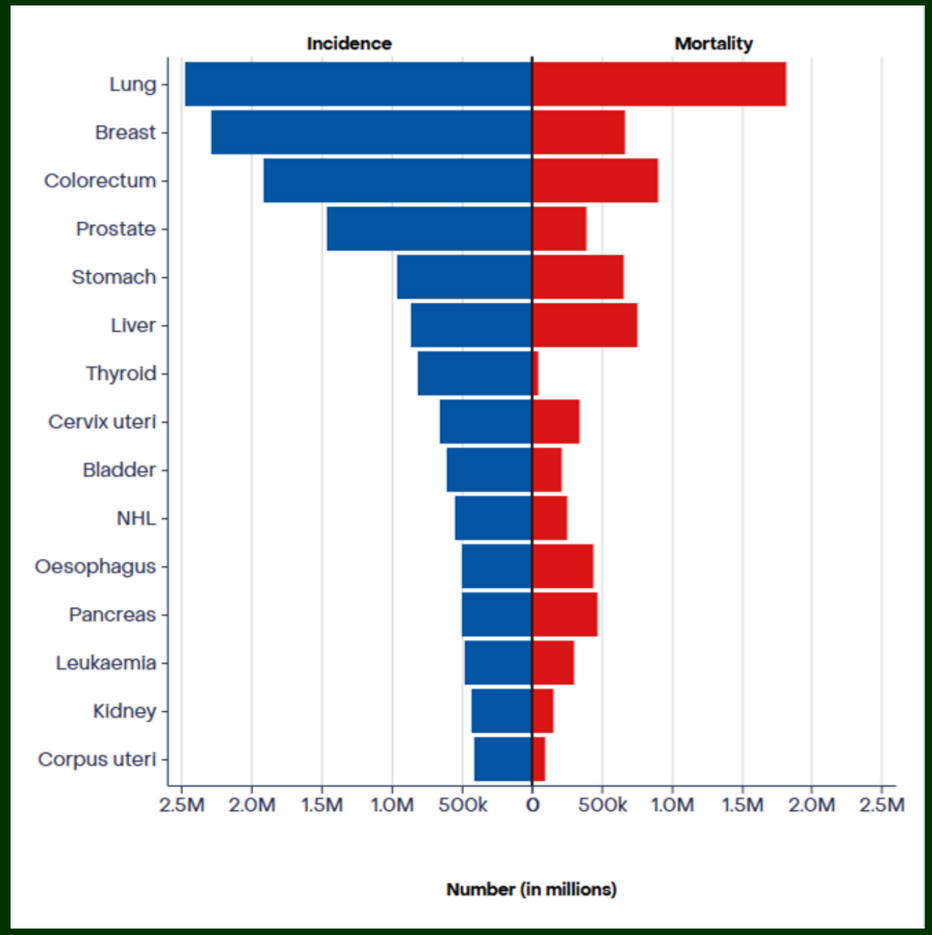
First Quarter: The Opponent

Lung Cancer and Lung Cancer Health Disparities

Lung Cancer

Global Incidence and Mortality

Lung cancer is the most commonly diagnosed cancer around the world, and the leading cause of cancer-related death.

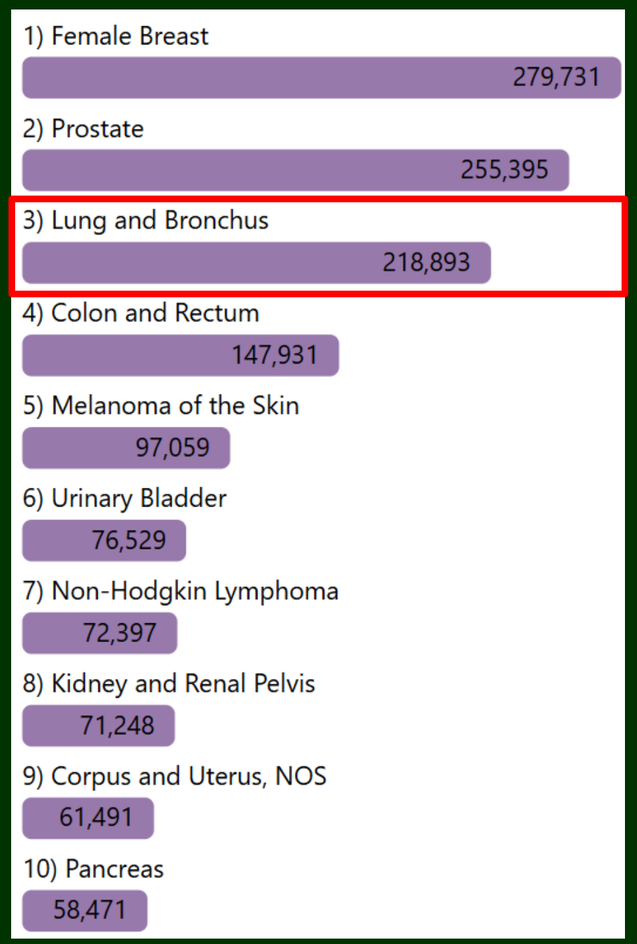


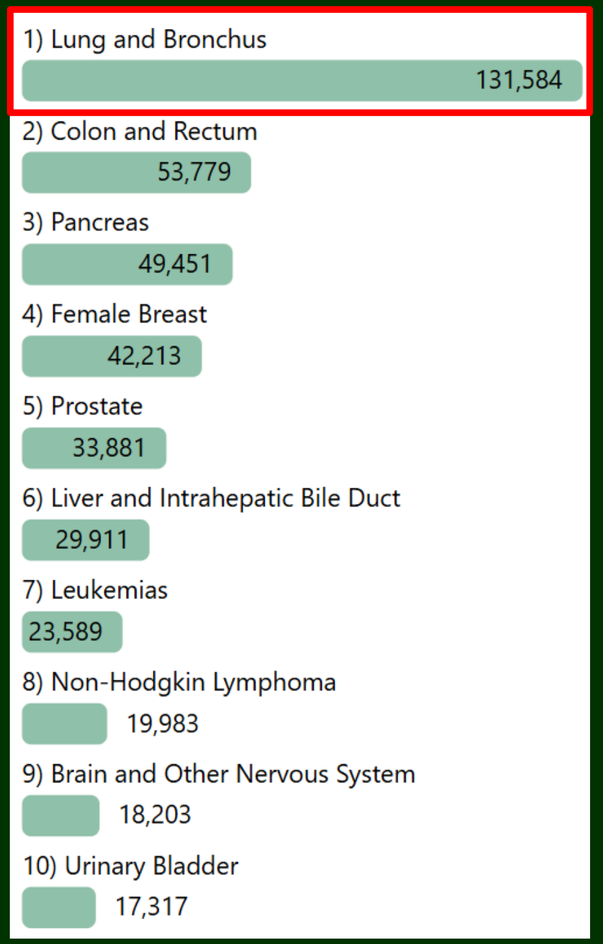
WHO IARC, GLOBOCAN 2022 v1.1. Cancer Today, 2025

Lung Cancer

Incidence and Mortality in the United States

Lung cancer is the third most commonly diagnosed cancer around the country, and the leading cause of cancer-related death.



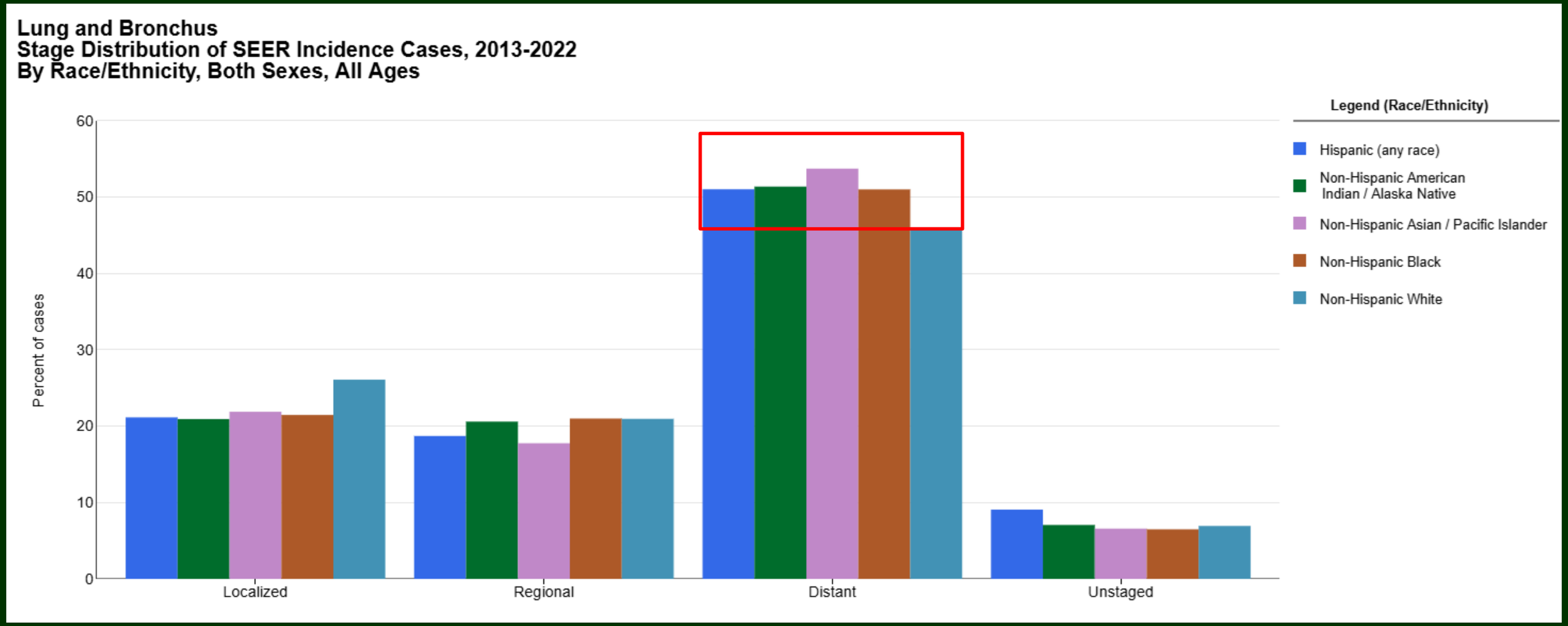


CDC, USCS Data Visualization Tool, 2025

Lung Cancer Health Disparities

Population Trends in Lung Cancer Incidence: Race/Ethnicity

All racial and ethnic minorities are diagnosed with more advanced lung cancer cases when compared to their non-Hispanic White counterparts.

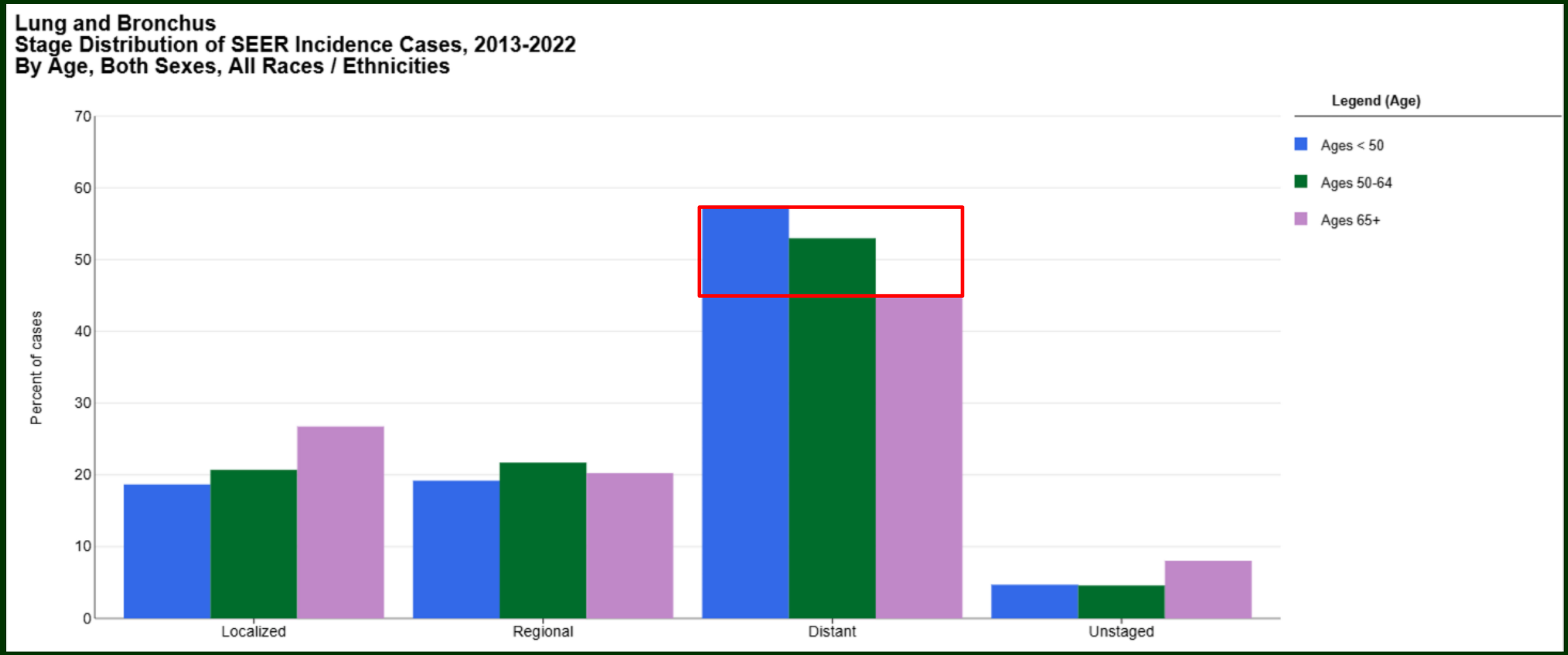


NCI, SEER*Explorer, 2025

Lung Cancer Health Disparities

Population Trends in Lung Cancer Incidence: Age

Younger Americans are diagnosed with more advanced lung cancer cases when compared to persons 65+.

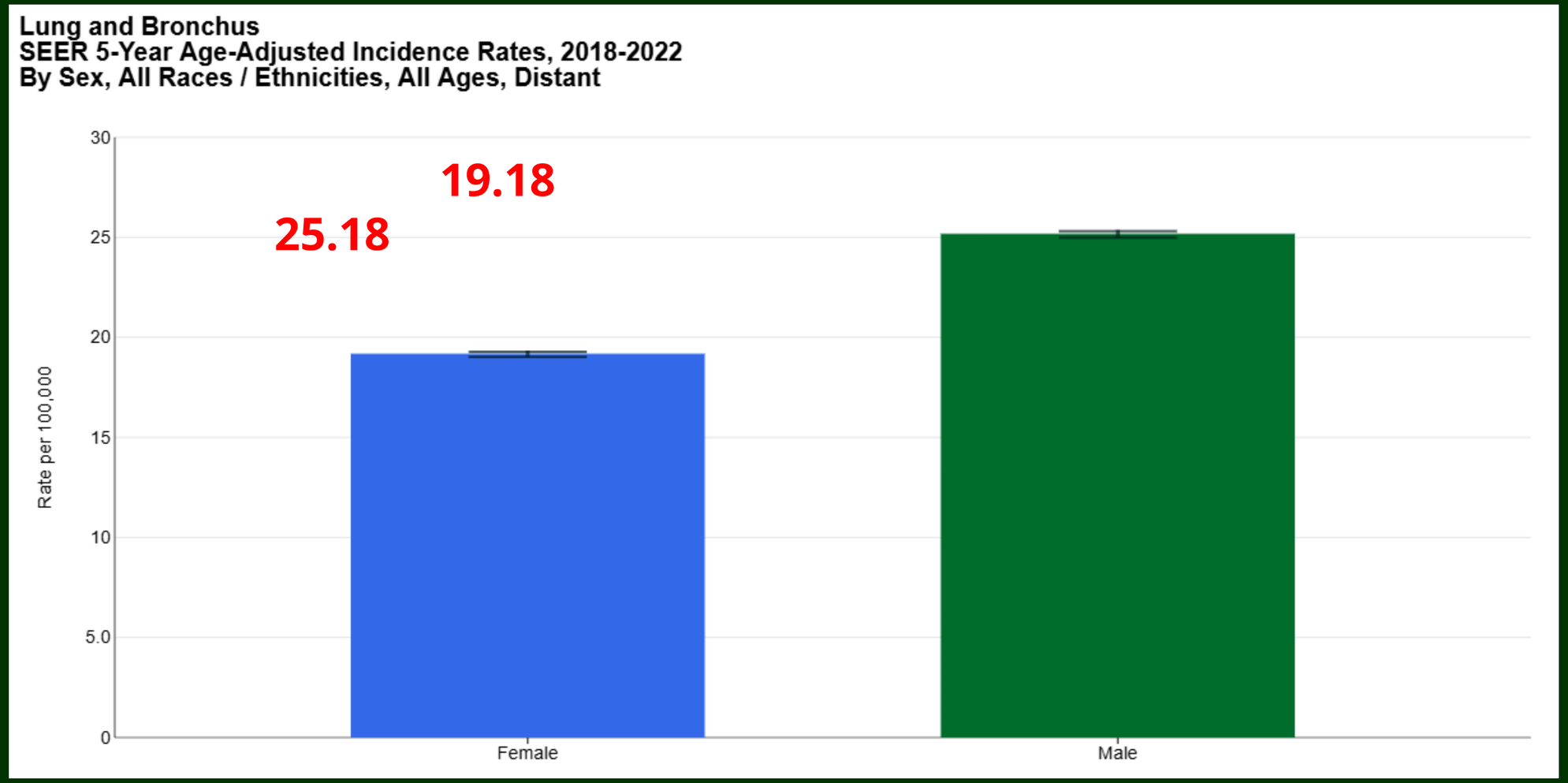


NCI, SEER*Explorer, 2025

Lung Cancer Health Disparities

Population Trends in Lung Cancer Incidence: Sex

Males have higher advanced lung cancer incidence rates than females.

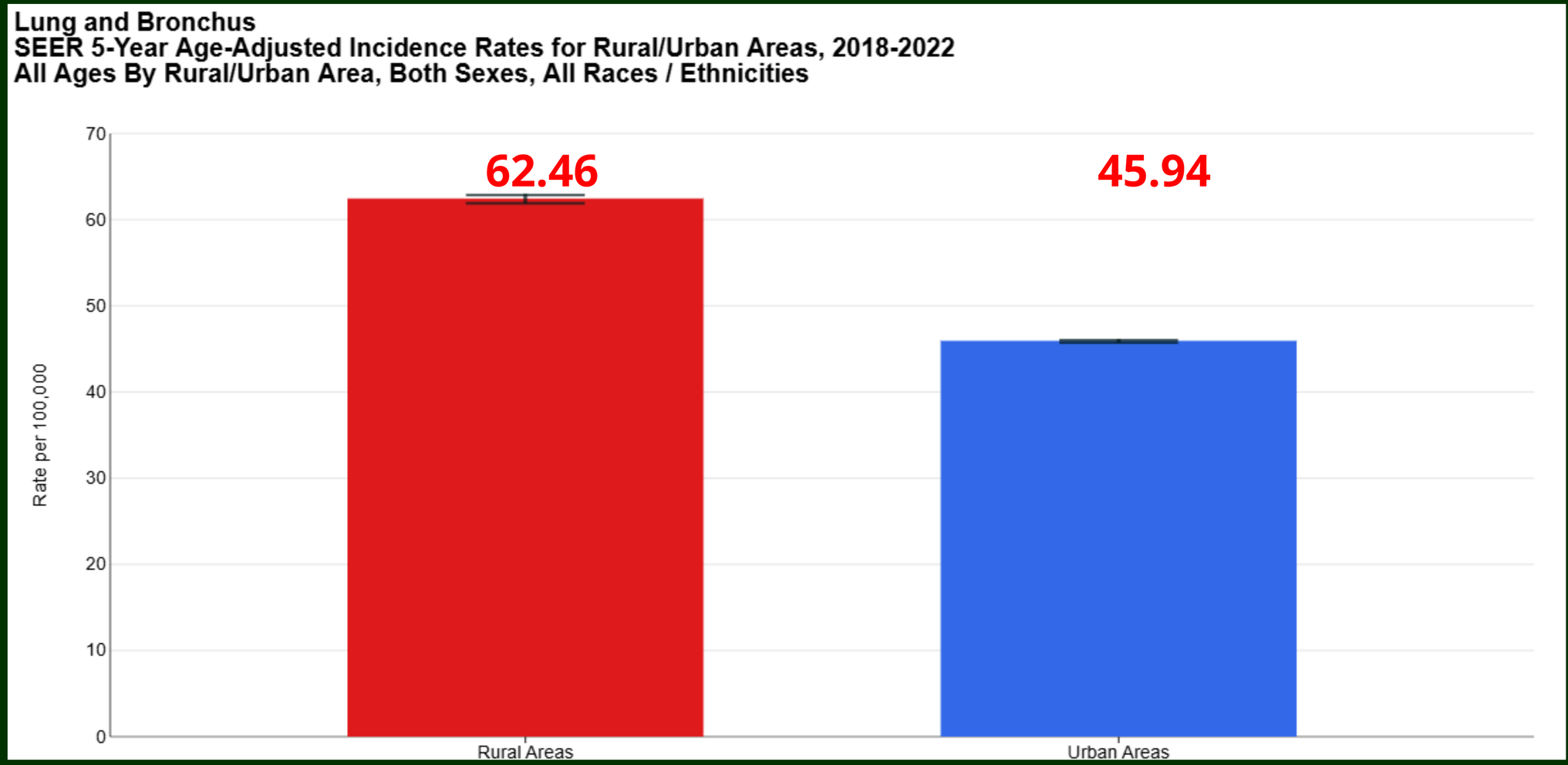


NCI, SEER*Explorer, 2025

Lung Cancer Health Disparities

Population Trends in Lung Cancer Incidence: Geography

Rural residents have higher lung cancer incidence rates compared to their urban counterparts.

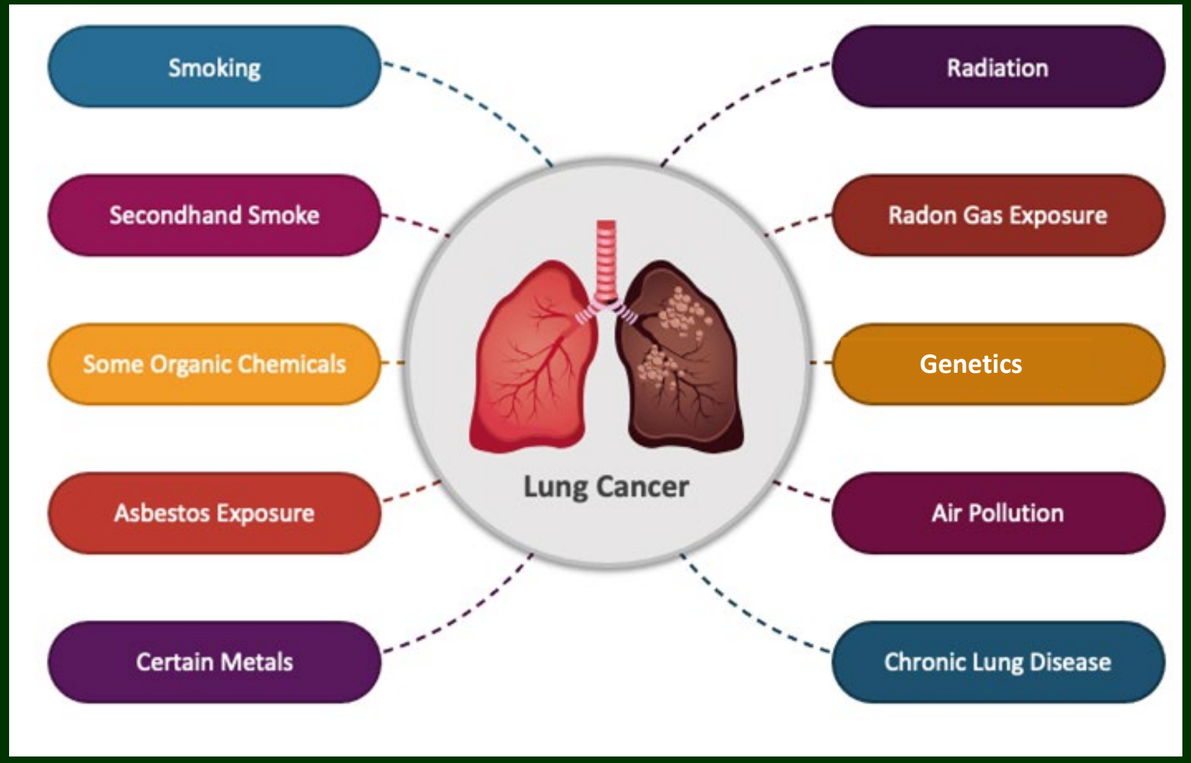


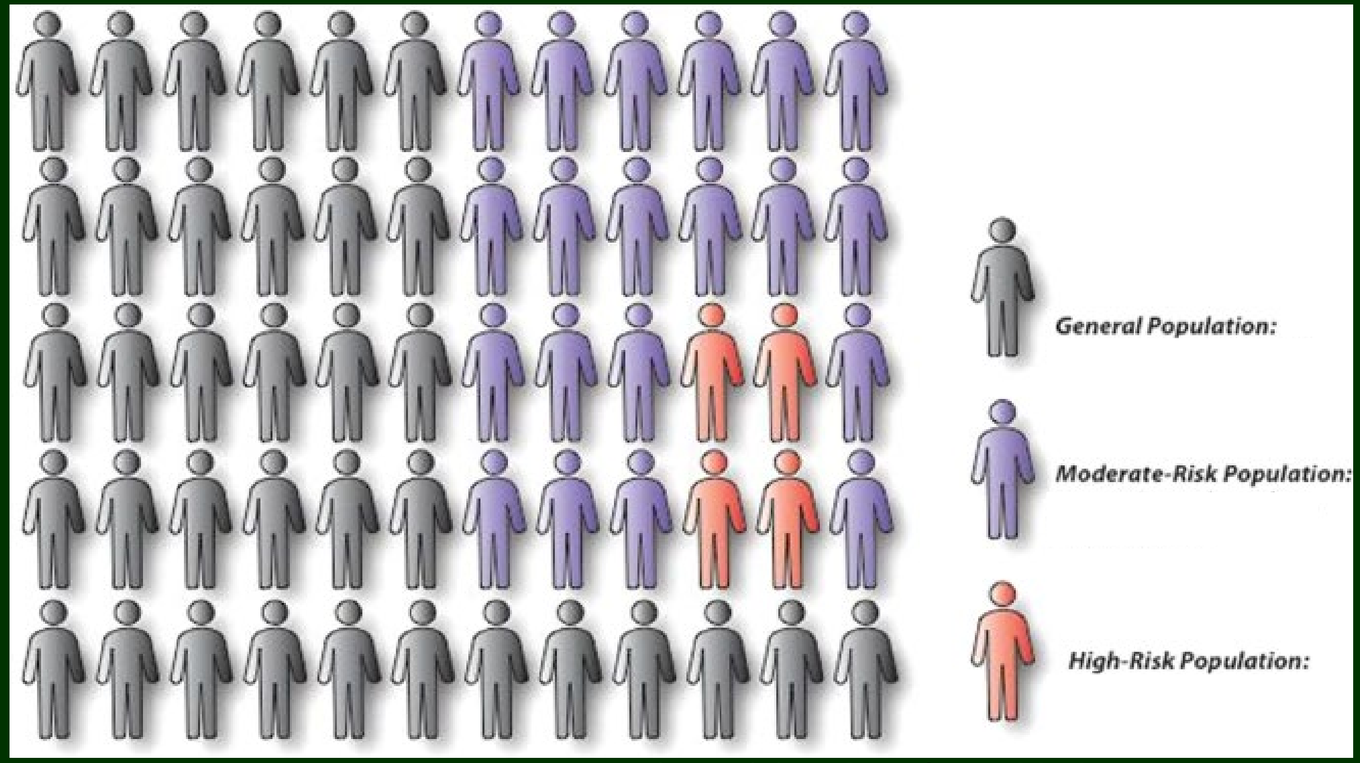
NCI, SEER*Explorer, 2025

What could be driving these population differences in lung cancer?

Lung Cancer Risk Factors

Lung cancer risk is influenced by a mix of behavioral, environmental, and biological risk factors (and their interactions).





Loomans-Kropp HA, npj Precision Oncology, 2019

Second Quarter: The Players

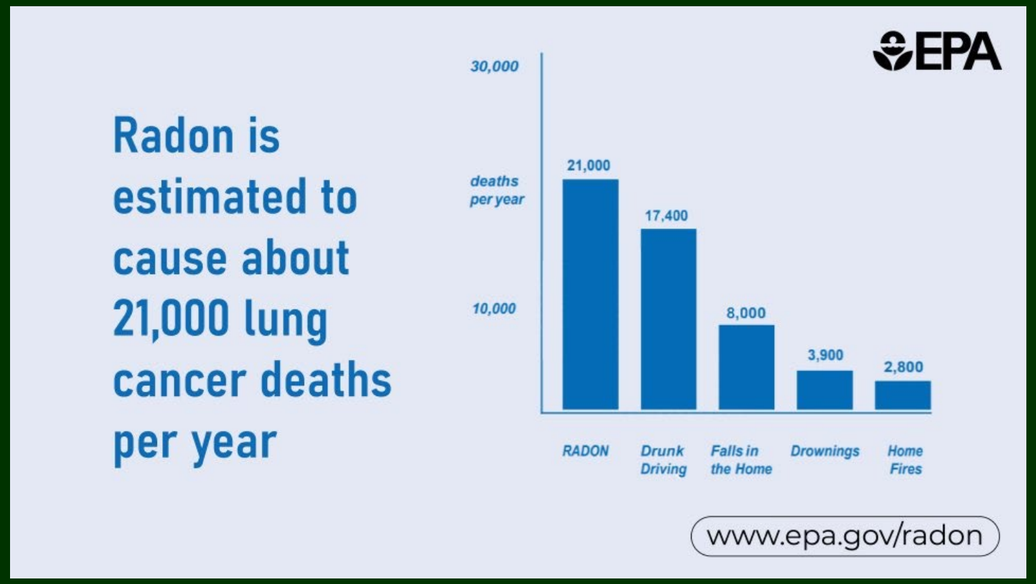
Radon and the Radon Health Equity Workgroup (RHEW)

RADON

Lung Cancer's Invisible Player

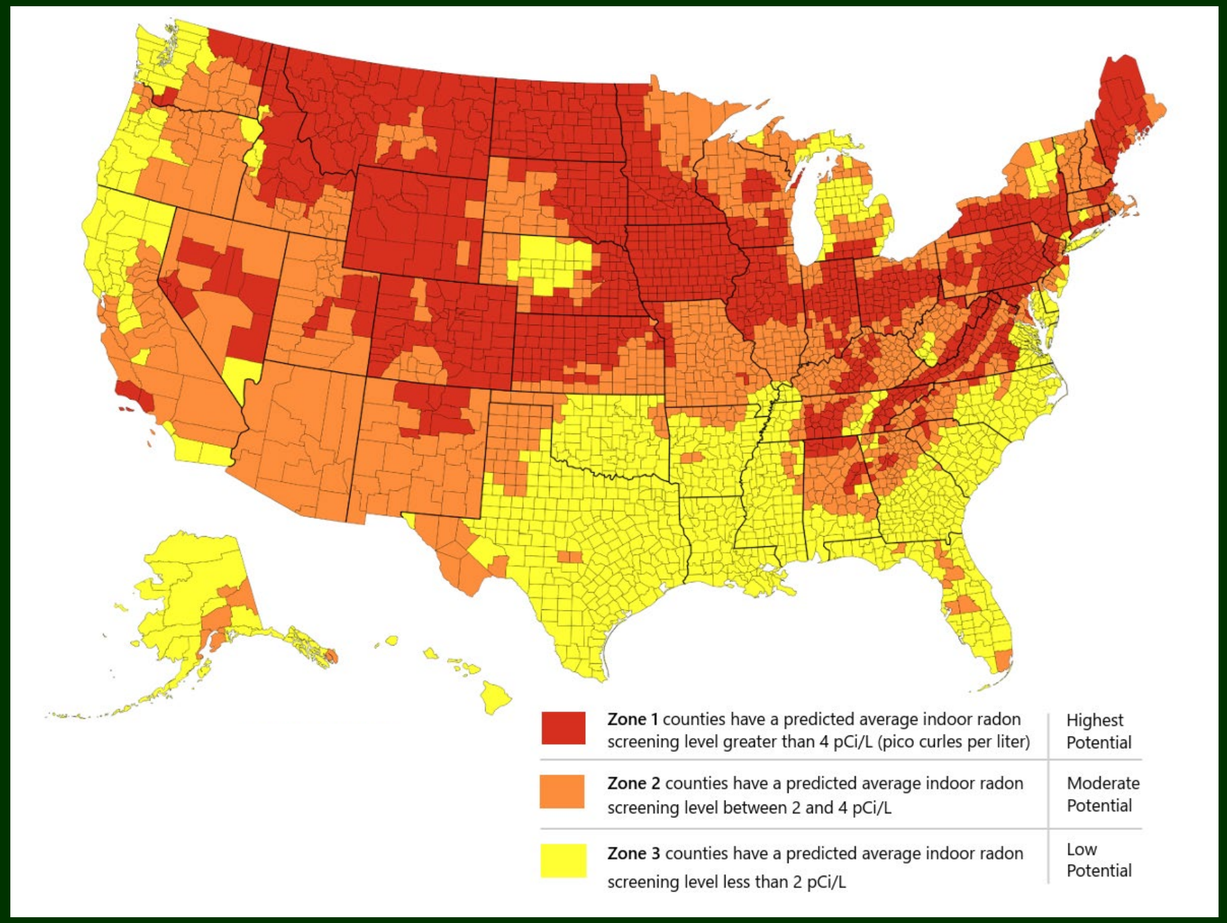
Radon is the 2nd leading risk factor for developing lung cancer.

One of every 15 American homes has radon levels above the recommended safety level of 4 pCi/L.



https://www.epa.gov/perspectives/keeping-radon-your-radar

- Causes between 3–14% of all lung cancers.
- Never smokers: Radon is the leading cause.
- Smokers: Radon is the 2nd leading cause.
  - Synergistic with smoking
  - 25 times higher risk than non-smokers

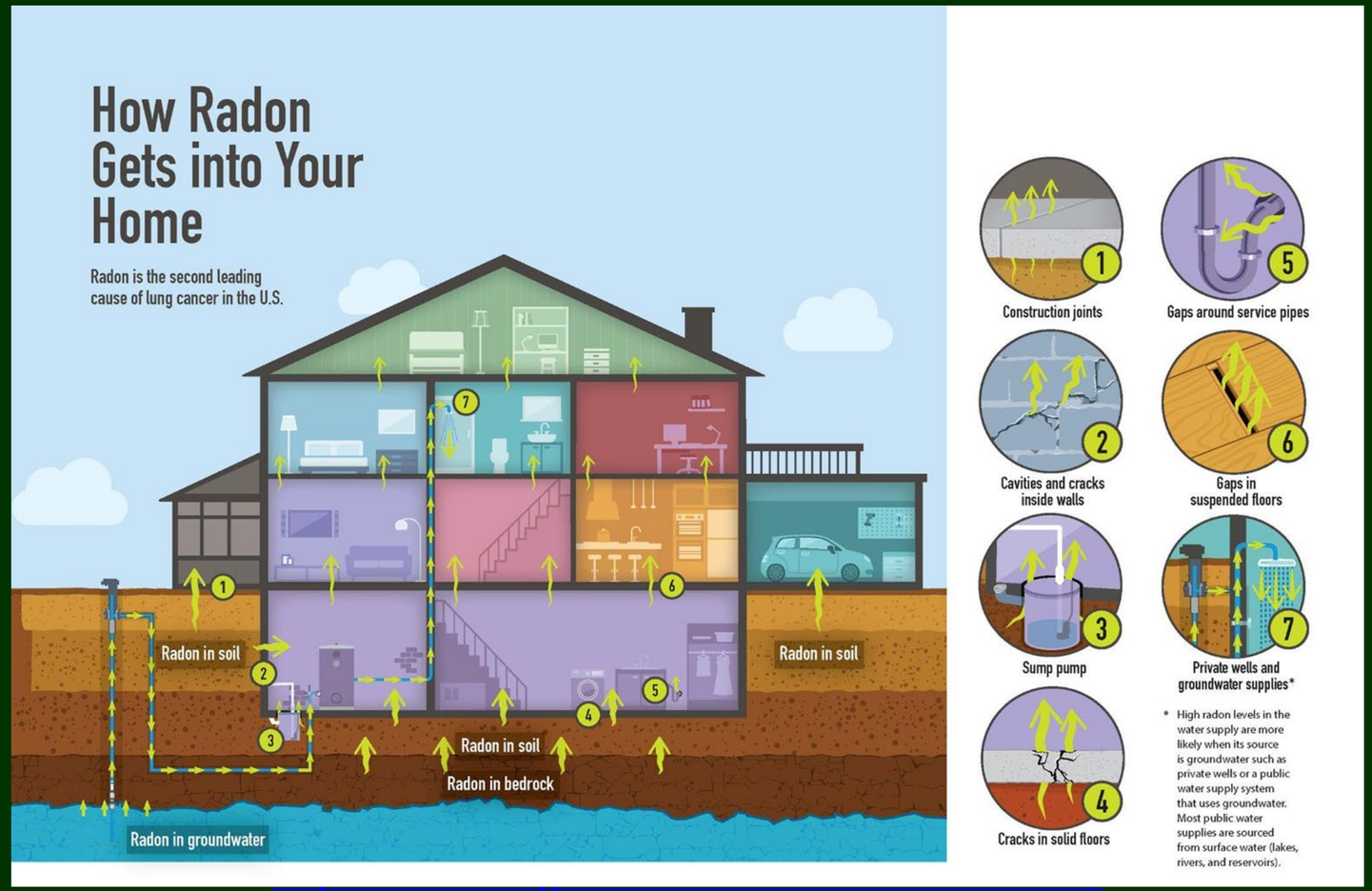


WHO, 2024; US EPA, 2024; US CDC, 2023; US NCI, 2011

RADON

Lung Cancer's Invisible Player

Radon is an invisible threat in your home.



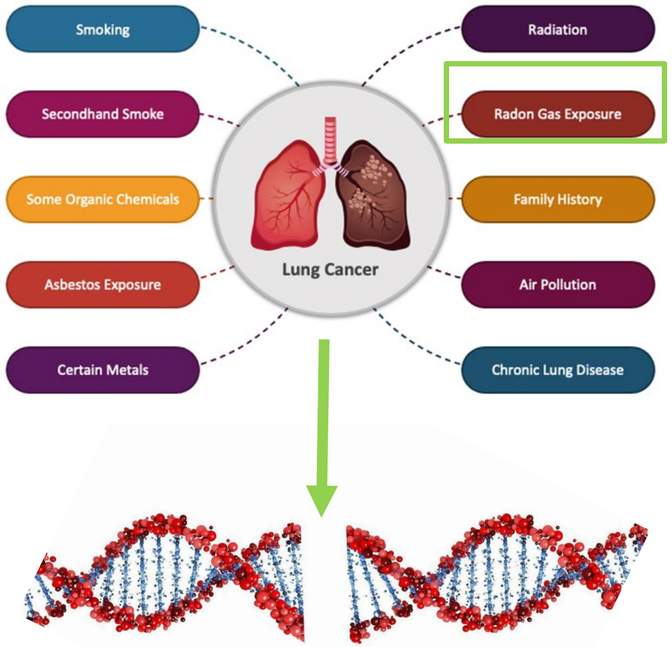
https://www.cdc.gov/radon/about/radon-home.html

- Radon is a naturally occurring odorless, colorless, and tasteless radioactive gas.
- Radon gas escapes easily from the ground into the air.
  - Outdoors: Quickly dilutes to very low concentrations.
  - Indoors: Concentrate in enclosed spaces.
    - It can get into your home through many entry points.
- Radon decays and produces further radioactive particles.
  - As we breathe, the particles are deposited on the cells lining the airways, where they can damage DNA.

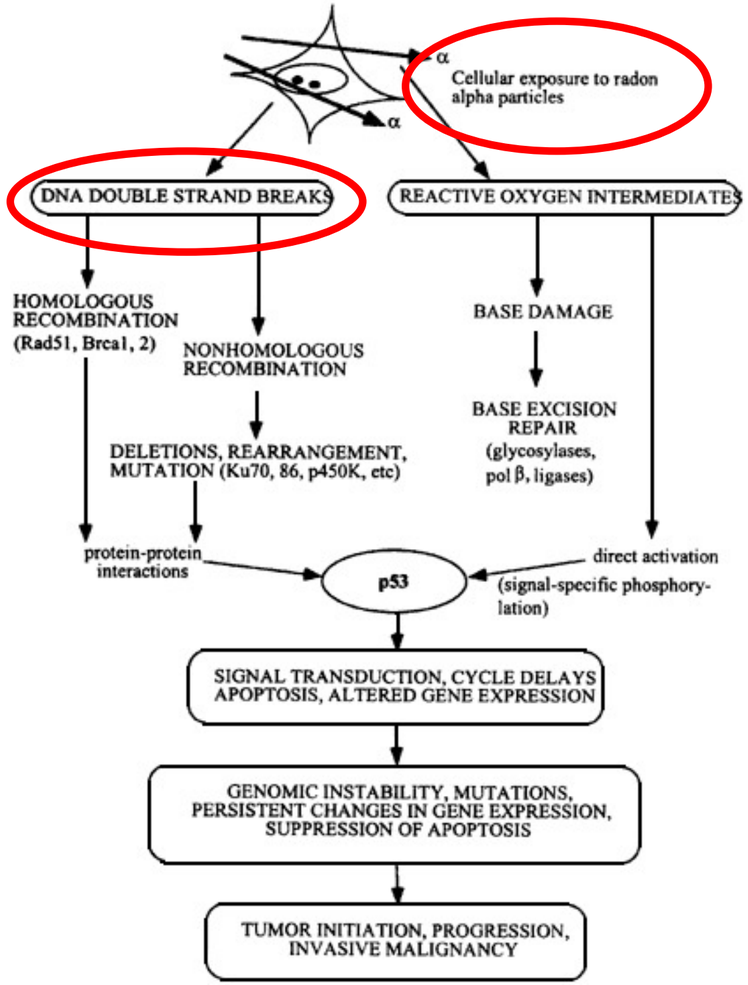
THE SCIENCE BEHIND THE PLAY

Genetic Biomarker Discovery: Population Differences in DNA Repair

Why do some people get hit harder by radon?



DNA double-strand breaks (DSBs) are the most severe type of DNA damage.



Risk Assessment of Radon in Drinking Water, National Academies Press, 1999

RADON HEALTH EQUITY WORKGROUP

My Team Roster

Coach (Chair)
Dr. Khadijah A. Mitchell

EDUCATION

TESTING
MITIGATION

RESEARCH

RADON
HEALTH
EQUITY
WORKGROUP

RADON HEALTH EQUITY WORKGROUP

My Team Roster

- **History**
  The Radon Health Equity Workgroup (RHEW) started in October 2023 as a subcommittee of the PA DoH OHE HEAT REM Committee.

- **Vision**
  To promote radon health equity for all Pennsylvanians.

- **Mission**
  To eliminate health disparities caused by radon in racial and ethnic minority communities through risk reduction education and awareness, testing, mitigation, and research in communities and clinics.

- **Strategic approach**
  Build a multi-sector statewide professional alliance with non-profit, industry, government, and academic leaders working together to promote lung cancer prevention and control through radon risk reduction.

RADON HEALTH EQUITY WORKGROUP

My Team Roster: Multi-sector Radon Professionals

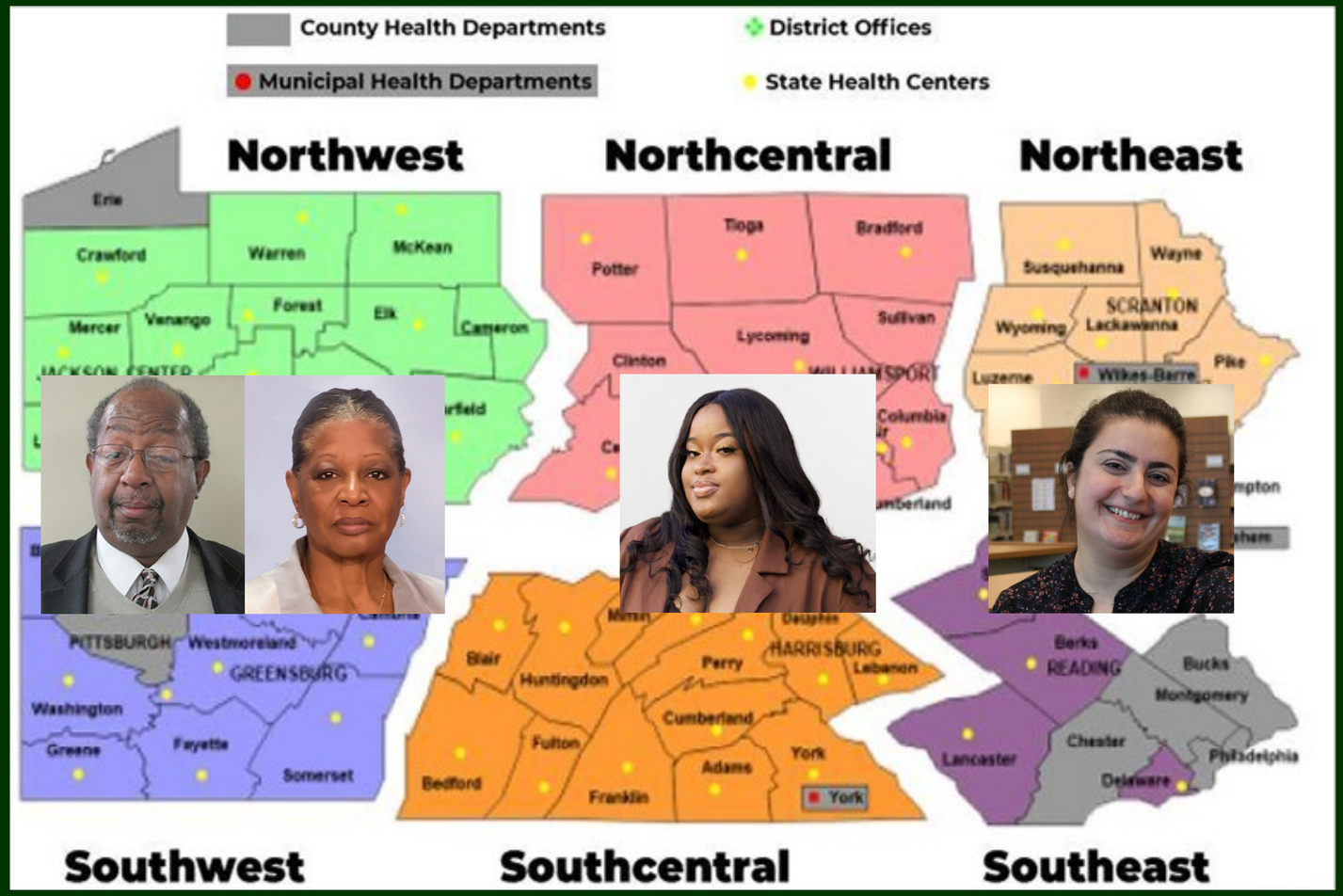
Quarterbacks (Regional Co-Chairs)

Nathaniel L. Burden, Jr. (Industry)
Indoor Environments Association

Jacquelyn E. Nixon (Nonprofit)
Citizens for Radioactive Radon Reduction

Mia Ray (Academia-Research)
Penn State University College of Medicine

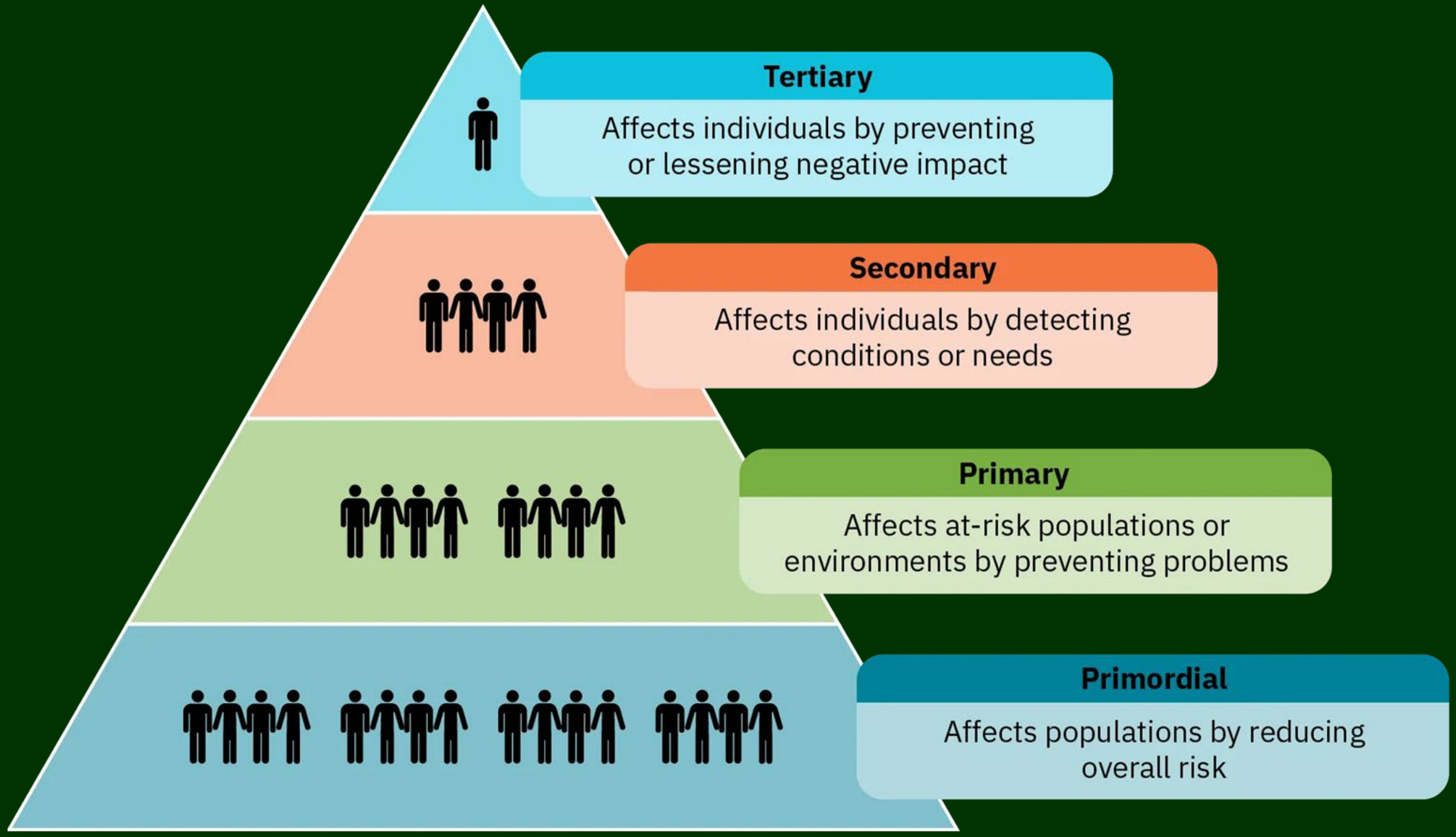
Dr. Rana Sakr (Academia-Practitioner)
West Chester University



Halftime: Review the Prevention Playbook

The CDC + EPA + RHEW Radon Risk Reduction Blueprints

PREVENTION ZONES



https://openstax.org/books/population-health/pages/2-5-levels-of-prevention

THE CDC RADON RISK REDUCTION BLUEPRINT

State Comprehensive Cancer Control (CCC) Plans

SUMMARY OF OBJECTIVES

GOAL
HEALTH EQUITY

PROMOTE Health Equity as it Relates to Cancer Control Across the Continuum

1. Increase access to regular and quality healthcare.
2. Increase collaborations among all critical stakeholders to reduce the burden of cancer.

GOAL
PRIMARY PREVENTION

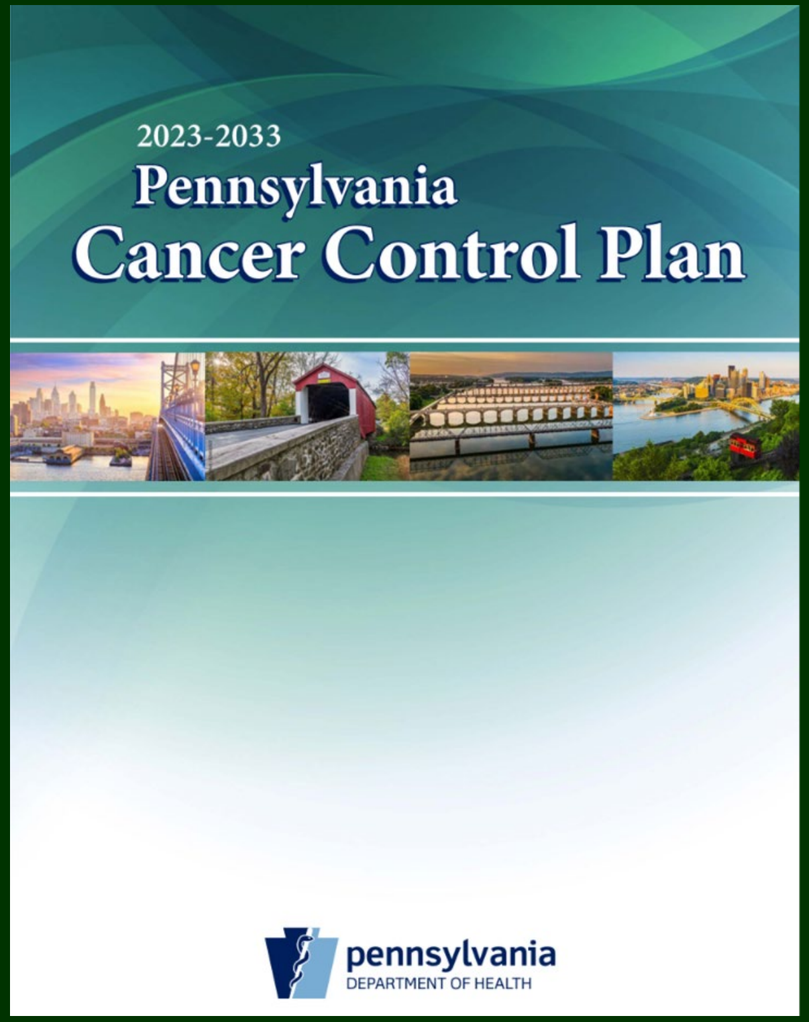
PREVENT Cancer from Occurring

1. Increase the percentage of Indiana residents at a healthful weight.
2. Decrease exposure to tobacco and secondhand smoke.
3. Reduce exposure to UV rays from natural and artificial sources.
4. Increase completion rates of vaccines that have been shown to reduce cancer.
5. Reduce radon and environmental exposures.

https://indianacancer.org/iccp-report/

THE CDC RADON RISK REDUCTION BLUEPRINT

State Comprehensive Cancer Control (CCC) Plans



GOAL 2 **PREVENT CANCER**

The most effective way to fight or reduce cancer is to prevent it from occurring in the first place. The World Health Organization (WHO) considers cancer prevention to be the most cost-effective long-term strategy for cancer control. Research suggests that cancer prevention efforts during early life and reducing harmful exposures of infants, young children, and adolescents can reduce their chances of getting cancer in the future. It is critical to build commitment as a foundation for any meaningful public health initiative, including safe, stable, nurturing relationships and environments for all children.

OBJECTIVE 2:1

Strengthen public protection from environmental carcinogens and cancer risk factors by 2033

HEALTH EQUITY FOCUS

Children and Adolescents, Rural, Racial and Ethnic Minorities, Low SES, Hi-risk occupations

STRATEGIES

- Educate the public by identifying and disseminating data sources and tools on environmental carcinogen exposure risks and safe alternatives
- Educate Pennsylvanians about safe drinking water, potential water carcinogenic contaminants, well water testing, certified water testing laboratories and available resources
- Increase and build public awareness of the effects of environmental lung carcinogens to increase demand for radon testing and availability of resources

https://www.pacancercoalition.org/about-us/pa-cancer-control-plan

THE EPA RADON RISK REDUCTION BLUEPRINT

The National Radon Action Plan

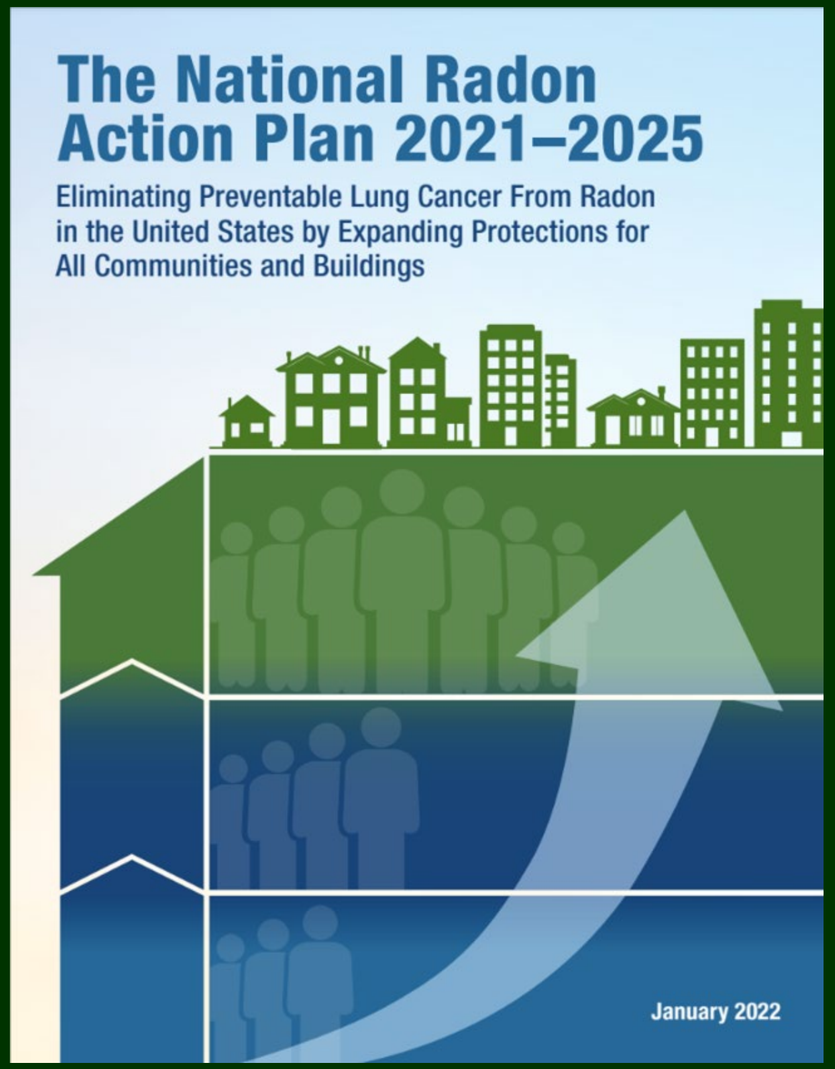


TABLE 1. NRAP | 2021–25: STRATEGIES FOR EXPANDING PROTECTIONS FOR *ALL BUILDINGS*

GOAL AREA	NRAP STRATEGIES, 2021–25	OUTCOMES WE SEEK
Increase Awareness of Radon Risk and Control Strategies	4.1 Promote integration of radon into coordinated messaging to decision-makers about health risks in housing, schools and workplaces.	Decision-makers with responsibility for occupant health in housing, schools and workplaces include radon risk reduction in their policies and practices.
	4.2 Promote radon awareness through nontraditional radon stakeholders—including clinical, health equity, social service and faith-based organizations—through consistent outreach using targeted materials.	Nontraditional radon stakeholders educate and equip their constituents to take radon risk-reduction action.
	4.3 Tailor effective radon messaging to underserved racial, ethnic and low-income populations.	Culturally competent information about radon risk reduction is available to underserved racial, ethnic and low-income groups.

https://www.epa.gov/radon/national-radon-action-plan-strategy-saving-lives

THE RHEW RADON RISK REDUCTION BLUEPRINT

Radon Health Equity Lung Cancer Prevention Framework

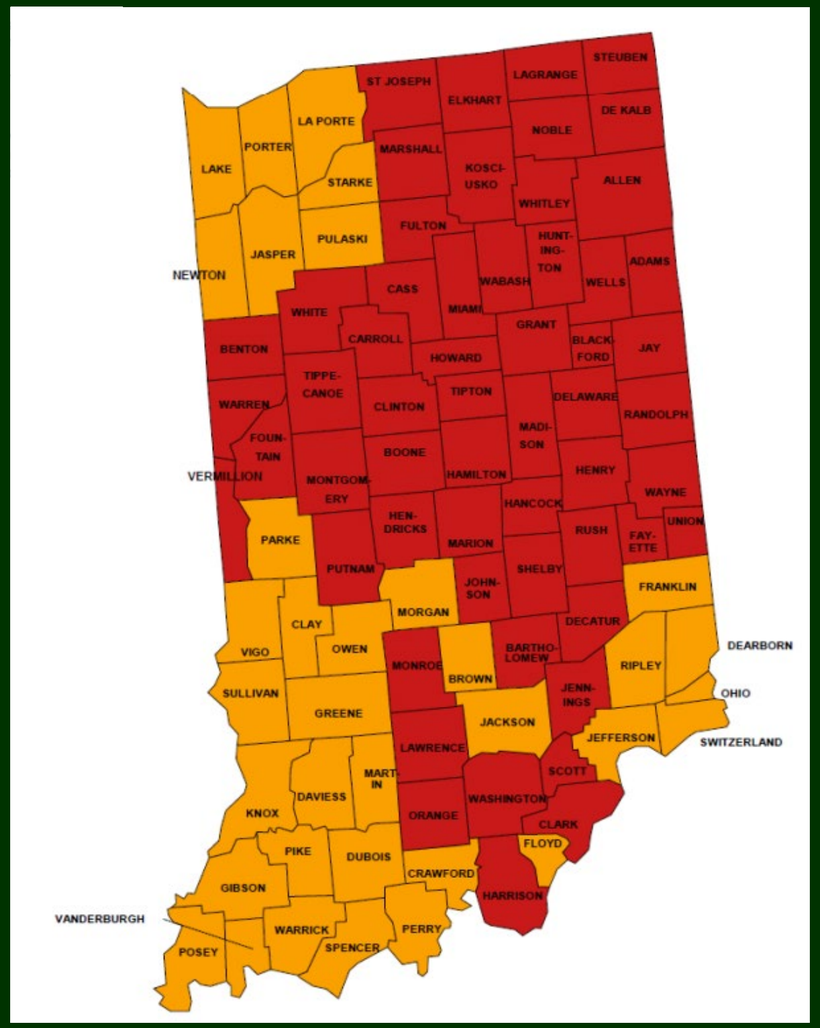
Disease Stage:	Underlying	Susceptible (Risk/Protective Factors)	Pre-clinical	Clinical	Post-clinical (Recovery/Disability/Death)
	Primordial Prevention	**Primary Prevention**	**Secondary Prevention**		**Tertiary Prevention**
	• Alter structural determinants that establish radon risk factors	• Reduce individual and community radon exposures that lead to lung cancer	• Early detection of lung cancer in smokers and never smokers		• Avoid further harm and deterioration due to a lung cancer diagnosis
Determinants of Health:	Political	Social, Behavioral, & Environmental	Healthcare Services		Biological
Target populations:	Healthy populations	High risk populations	High risk populations Patients with early disease		Patients with disease Recovering individuals Lung cancer survivors
Actionable solutions:	Radon policies	Radon education and awareness, testing, and mitigation interventions	Lung cancer screening guidelines to include smoking and radon exposure		Identifying novel genomic biomarkers of radon exposure

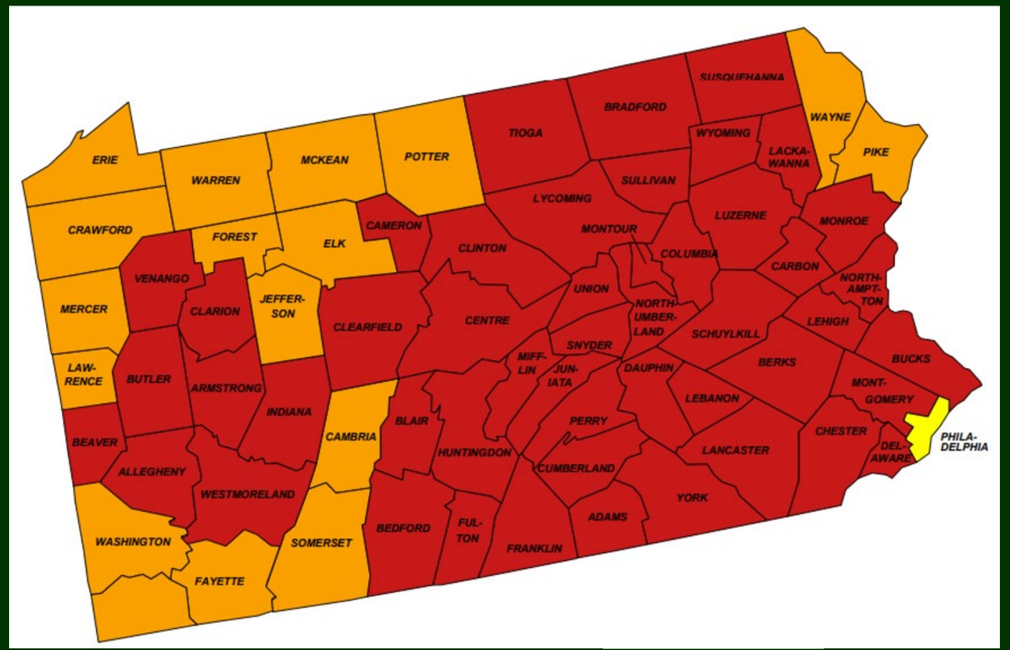
Third Quarter: The Offensive Strategy

RHEW's PA CARES Radon Library Lending Program

HOME FIELD ADVANTAGE

1 of every 3 (33%) homes in Indiana and 2 of every 5 (40%) of homes in Pennsylvania have high radon levels.





What do the colors mean?

Color	Zone	Description
	Zone 1 (red zones)	Highest potential Counties have a predicted average indoor screening level > (Greater) than 4 pCi/L (picocuries per liter) (150 Bq/m3 (becquerels per meter cubed))
	Zone 2 (orange zones)	Moderate potential Counties have a predicted average screening level ≥ (Greater than and equal to) 2 pCi/L (75 Bq/m3) and ≤ (less than and equal to) 4 pCi/L (150 Bq/m3)
	Zone 3 (yellow zones)	Low potential Counties have a predicted average indoor screening level < (Less than) 2 pCi/L (75 Bq/m3)

https://www.epa.gov/radon/epa-maps-radon-zones-and-supporting-documents-state

RADON TESTING DISPARITIES

Some states have high radon levels and low radon testing rates.

Table 1: State-level summary data. Note: Hawaii and Mississippi are excluded due to lack of data.

State	Rank	Weighted Average Smoothed Testing Disparity	Estimated Mean Radon Level	Housing Units	Radon Tests (10 years)	Radon Tests per 1,000 Housing Units
South Dakota	1	16.4	8.5	401,862	6,275	15.6
Montana	2	12.6	6.7	519,935	9,893	19.0
North Dakota	3	12.5	6.9	380,173	6,607	17.4
Ohio	4	11.5	6.5	5,232,869	98,840	18.9
Pennsylvania	5	10.8	7.3	5,732,628	203,045	35.4
Maine	6	10.4	5.6	750,939	11,825	15.7
Kentucky	7	10.2	5.4	2,006,358	28,793	14.4
Indiana	8	9.9	5.0	2,921,032	43,148	14.8
Alaska	9	9.5	3.3	319,854	830	2.6
New Mexico	10	9.3	3.5	948,473	3,721	3.9
Idaho	11	9.3	5.4	751,105	12,961	17.3
Wisconsin	12	9.2	5.7	2,725,296	68,104	25.0
New Hampshire	13	9.1	5.5	642,315	15,608	24.3
Texas	14	9.0	2.8	11,283,353	4,615	0.4
Wyoming	15	9.0	5.6	280,291	7,638	27.3
Utah	16	8.8	5.3	1,133,521	28,342	25.0
Iowa	17	8.6	7.1	1,418,626	95,245	67.1
Colorado	18	8.4	5.8	2,464,164	96,367	39.1
West Virginia	19	8.3	3.9	894,956	10,061	11.2
Tennessee	20	8.0	3.9	3,028,213	31,066	10.3
Nebraska	21	7.8	6.0	851,227	42,782	50.3
Arkansas	22	7.8	2.4	1,389,129	668	0.5
Missouri	23	7.4	4.0	2,819,383	58,525	20.8
Illinois	24	7.2	4.1	5,388,066	108,909	20.2
Oklahoma	25	7.0	2.1	1,749,464	814	0.5
Arizona	26	7.0	2.4	3,075,981	3,589	1.2
Virginia	27	6.9	3.4	3,562,143	53,199	14.9
Connecticut	28	6.8	3.8	1,524,992	25,572	16.8
Minnesota	29	6.1	4.7	2,477,753	130,912	52.8
Alabama	30	5.9	2.3	2,284,847	12,569	5.5
Georgia	31	5.9	2.6	4,378,391	30,152	6.9
Washington	32	5.8	2.2	3,195,004	8,201	2.6
California	33	5.7	1.8	14,366,336	9,415	0.7
New York	34	5.7	2.6	8,404,381	97,145	11.6
Maryland	35	5.7	3.2	2,470,316	47,941	19.4
Florida	36	5.6	2.1	9,673,682	53,794	5.6
Oregon	37	5.6	2.8	1,808,465	23,951	13.2
Vermont	38	5.4	3.4	339,439	10,600	31.2
Michigan	39	5.1	3.1	4,629,611	114,407	24.7
Nevada	40	4.6	2.1	1,285,684	10,930	8.5
District of Columbia	41	4.1	1.9	322,793	2,126	6.6
North Carolina	42	4.1	2.2	4,747,943	73,139	15.4
Delaware	43	3.8	2.2	443,781	12,214	27.5
Kansas	44	3.7	4.1	1,288,401	88,584	68.8
Louisiana	45	3.7	1.0	2,089,777	499	0.2
Rhode Island	46	3.6	3.4	470,168	37,874	80.6
Massachusetts	47	3.6	3.2	2,928,732	234,152	79.9
South Carolina	48	3.5	1.7	2,351,286	26,481	11.3
New Jersey	49	1.2	1.8	3,641,812	1,234,094	338.9

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Illinois	24	7.2	4.1	5,388,066	108,909	20.2
Oklahoma	25	7.0	2.1	1,749,464	814	0.5
Arizona	26	7.0	2.4	3,075,981	3,589	1.2
Virginia	27	6.9	3.4	3,562,143	53,199	14.9
Connecticut	28	6.8	3.8	1,524,992	25,572	16.8
Minnesota	29	6.1	4.7	2,477,753	130,912	52.8
Alabama	30	5.9	2.3	2,284,847	12,569	5.5
Georgia	31	5.9	2.6	4,378,391	30,152	6.9
Washington	32	5.8	2.2	3,195,004	8,201	2.6
California	33	5.7	1.8	14,366,336	9,415	0.7
New York	34	5.7	2.6	8,404,381	97,145	11.6
Maryland	35	5.7	3.2	2,470,316	47,941	19.4
Florida	36	5.6	2.1	9,673,682	53,794	5.6
Oregon	37	5.6	2.8	1,808,465	23,951	13.2
Vermont	38	5.4	3.4	339,439	10,600	31.2
Michigan	39	5.1	3.1	4,629,611	114,407	24.7
Nevada	40	4.6	2.1	1,285,684	10,930	8.5
District of Columbia	41	4.1	1.9	322,793	2,126	6.6
North Carolina	42	4.1	2.2	4,747,943	73,139	15.4
Delaware	43	3.8	2.2	443,781	12,214	27.5
Kansas	44	3.7	4.1	1,288,401	88,584	68.8
Louisiana	45	3.7	1.0	2,089,777	499	0.2
Rhode Island	46	3.6	3.4	470,168	37,874	80.6
Massachusetts	47	3.6	3.2	2,928,732	234,152	79.9
South Carolina	48	3.5	1.7	2,351,286	26,481	11.3
New Jersey	49	1.2	1.8	3,641,812	1,234,094	338.9

American Lung Association, Radon Testing Disparities, 2022

RADON TESTING DISPARITIES

Some communities are significantly less likely to test their homes for radon (e.g. racial and ethnic minorities, lower-income individuals, and renters).

	Radon Screening	
	% (95% CI)	POR (95% CI)
Gender		
Male	44.9 (43.0-46.9)	1.05 (0.95-1.17)
Female	43.7 (42.0-45.5)	…
Age, y		
18-34	38.2 (34.9-41.4)	0.96 (0.82-1.13)
35-64	49.1 (47.7-50.7)	**1.50 (1.34-1.68)**
>65	39.1 (37.0-41.3)	…
Race/ethnicity		
White, non-Hispanic	46.9 (45.4-48.4)	…
Black, non-Hispanic	33.2 (29.8-36.7)	**0.56 (0.48-0.67)**
Asian, non-Hispanic	52.5 (46.0-59.0)	1.25 (0.96-1.63)
AI/AN, non-Hispanic	39.4 (23.1-55.7)	0.74 (0.37-1.46)
Hispanic	38.8 (35.2-42.4)	**0.72 (0.61-0.84)**
Other, non-Hispanic	42.6 (33.0-51.9)	0.84 (0.57-1.23)
Education		
Less than high school	33.3 (28.7-37.9)	…
High school graduate	39.3 (28.7-37.9)	**1.30 (1.04-1.62)**
College graduate or higher	55.9 (54.0-57.8)	**2.54 (2.03-3.17)**
Household income		
<$50 000	33.0 (31.0-35.1)	…
≥$50 000	52.8 (51.0-54.6)	**2.26 (2.01-2.55)**
Own or rent home		
Own	49.8 (48.3-51.4)	**2.47 (2.18-2.81)**
Rent	28.7 (26.4-30.9)	…
Other	33.5 (27.6-39.4)	1.25 (0.94-1.67)
Relationship status		
In a relationship	50.8 (49.7-52.4)	**1.90 (1.70-2.12)**
Single	35.2 (33.2-37.2)	…

Gleason JA, Journal of Public Health Management and Practice, 2021

PA CARES

PennsylvaniA Community Access to Radon Health Equity Solutions (PA CARES)

Purpose

- PA CARES is a lung cancer prevention study that provides community-based radon risk reduction through education and awareness, testing, mitigation, and research in high-risk communities across PA.

Goals

- Goal 1: Increase education and awareness of radon and lung cancer risk in high-risk communities.
- Goal 2: Navigate high-risk communities with historically high radon levels and low testing rates to free or reduced cost radon testing resources.
- Goal 3: Navigate high-risk communities with historically high radon levels and low mitigation rates to free or reduced cost radon mitigation resources.
- Goal 4: Research and discover radon exposure biomarkers in high-risk community members.

PA CARES RADON LIBRARY LENDING PROGRAM

PennsylvaniA Community Access to Radon Health Equity Solutions (PA CARES)

Radon Library Lending Program

Goal 2

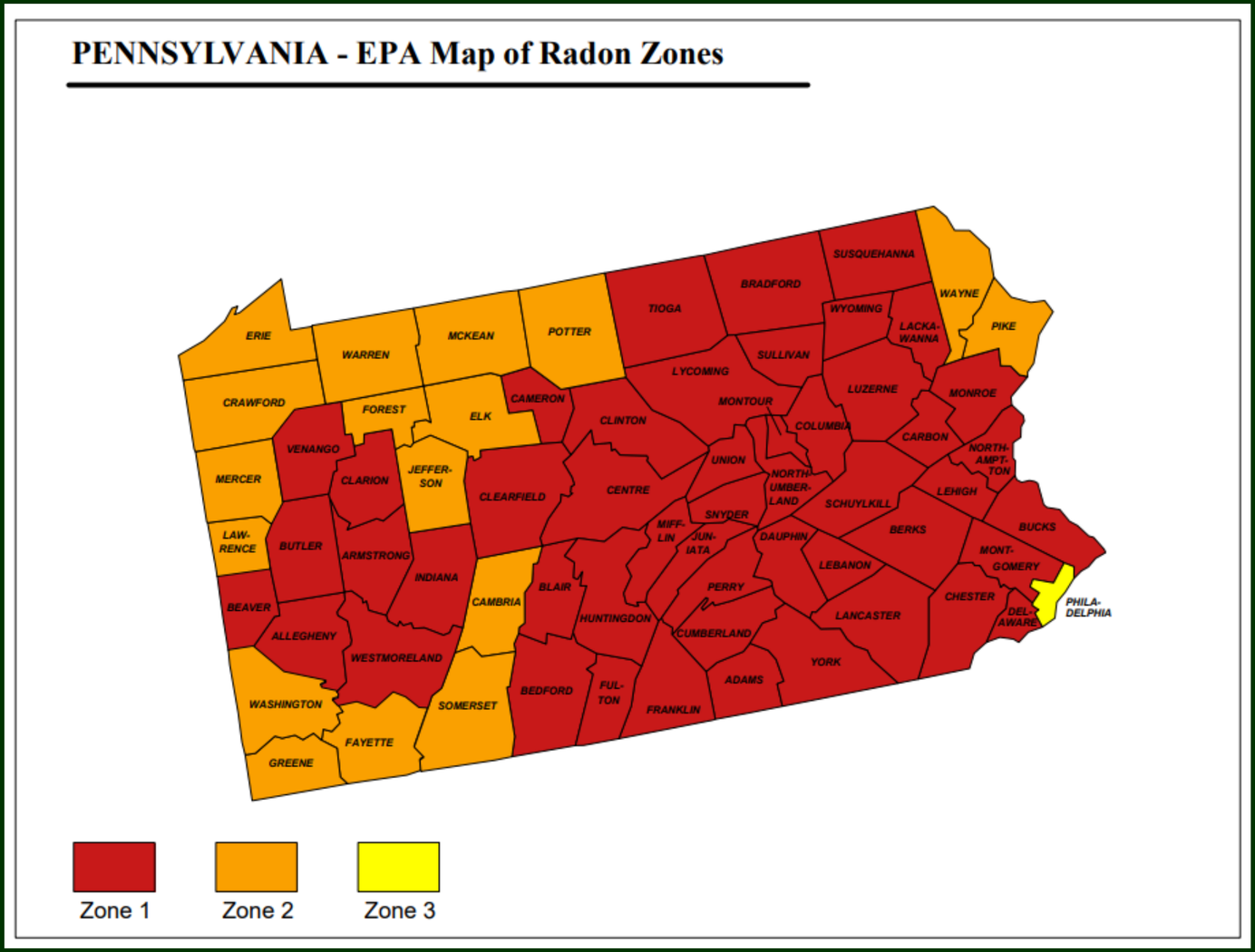
- Navigate high-risk communities with historically high radon levels and low testing rates to free or reduced cost radon testing resources.
  - PA CARES Radon Library Lending Program

Program Aims

- Aim 1: Identify high-risk communities with historically high radon levels, low testing rates, and in environmental justice areas.
- Aim 2: Partner with local libraries to pilot a community-based radon library lending program.
- Aim 3: Launch a statewide community-based radon library lending program.

PA CARES RADON LIBRARY LENDING PROGRAM

Program Aim 1: Identify high-risk communities across Pennsylvania.

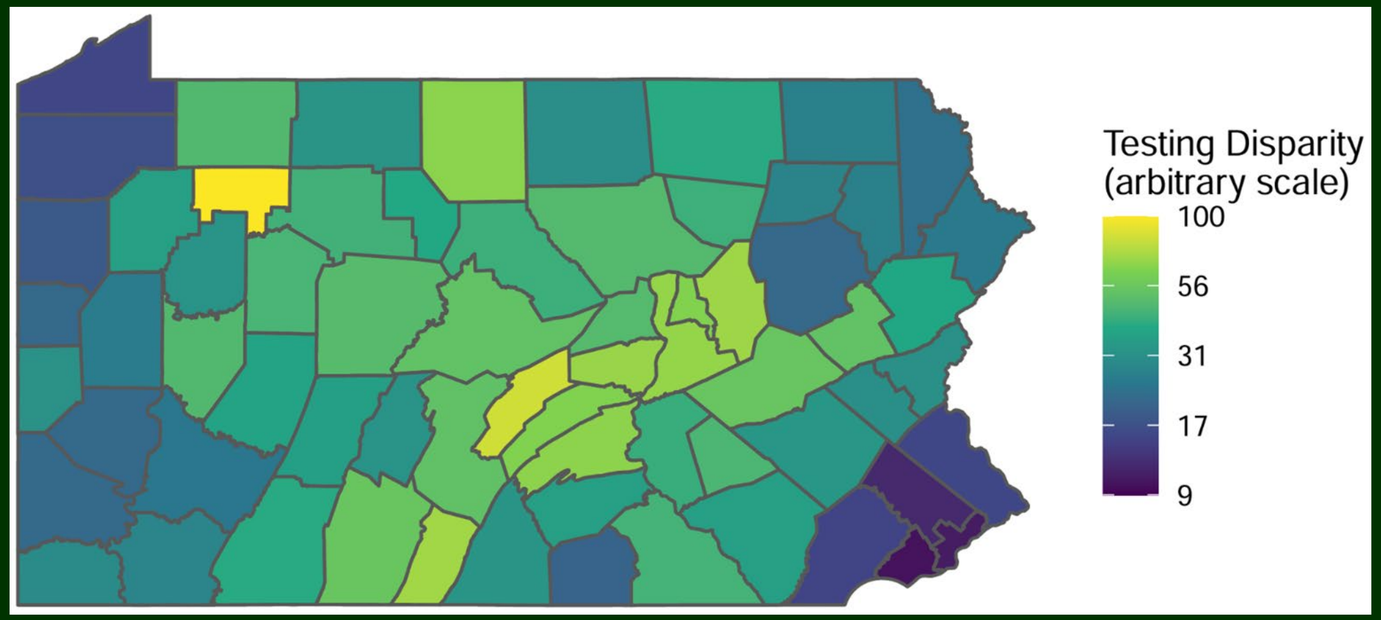


- Criterion 1: High Radon Area
  - Zone 1 (≥ 4 pCi/L)
- Criterion 2: High ALA Radon Testing Disparity Score
  - PA average radon level: 7.3 pCi/L
  - PA radon testing disparity score: 10.8
- Criterion 3: Environmental Justice Area

Pennsylvania Department of Environmental Protection, 2025; US EPA, 2025

PA CARES RADON LIBRARY LENDING PROGRAM

Program Aim 1: Identify high-risk communities across Pennsylvania.



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American Lung Association, Radon Testing Disparities, 2022

PA CARES RADON LIBRARY LENDING PROGRAM

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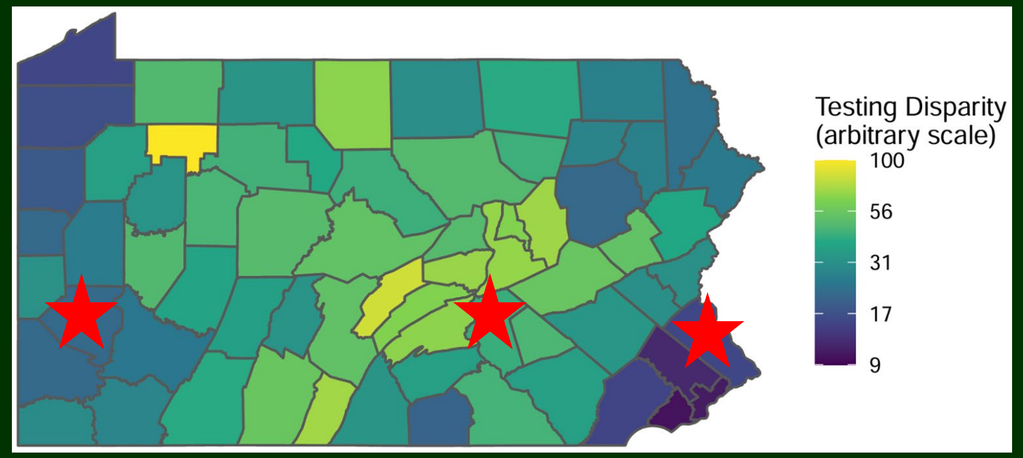


Western PA: Allegheny County (Pittsburgh Metro Area)

Average radon level: 5.7

Radon testing disparity score: 21.1

Central PA: Dauphin County (Harrisburg Metro Area)

Average radon level: 11.9

Radon testing disparity score: 41.9

Eastern PA: Bucks County (Philadelpia Metro Area)

Average radon level: 4.7

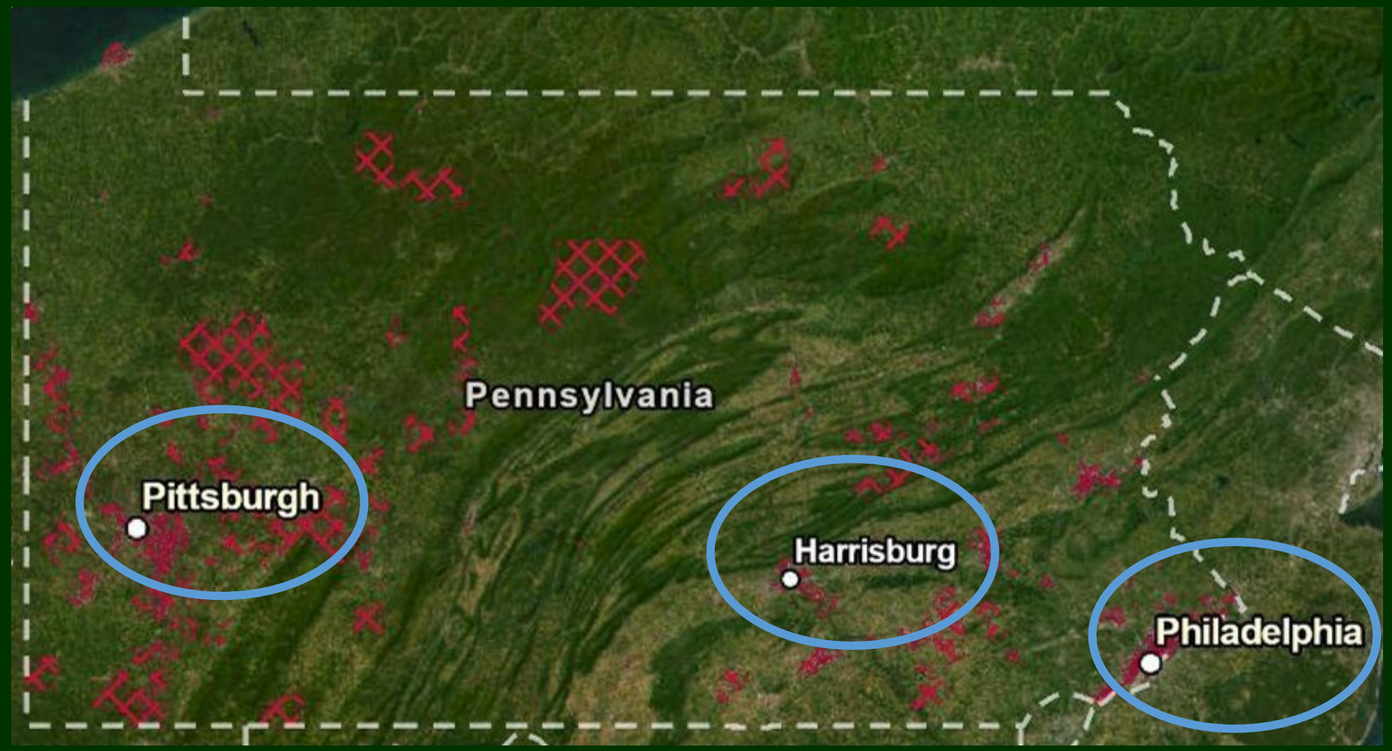
Radon testing disparity score: 15.5

If testing shows radon levels ≥ 4 pCi/L in the home, the risk of developing lung cancer is higher and action should be taken to mitigate. If an area has a radon testing disparity score of ≥ 10.8 (higher than the state average), more radon testing needs to happen.

American Lung Association, Radon Testing Disparities, 2022

PA CARES RADON LIBRARY LENDING PROGRAM

Program Aim 1: Identify high-risk communities across Pennsylvania.



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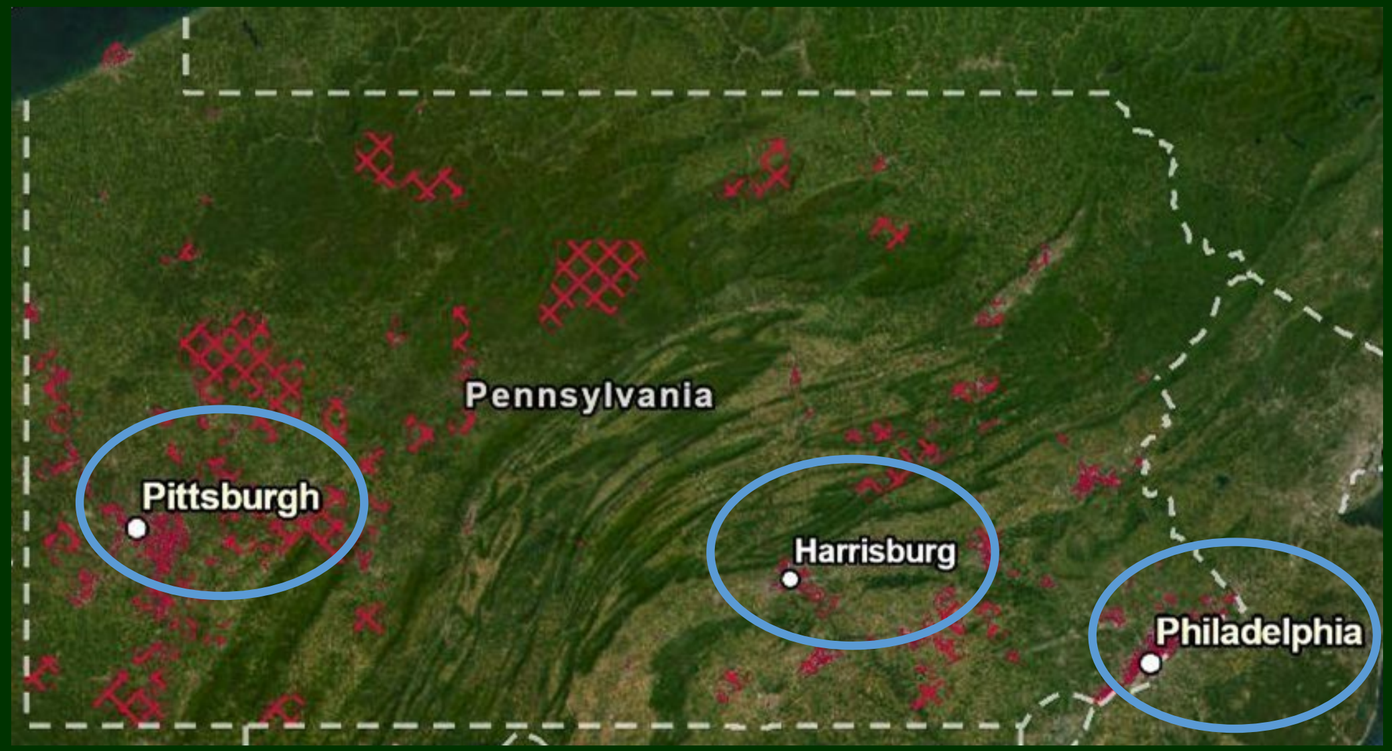
PA CARES RADON LIBRARY LENDING PROGRAM

Program Aim 1: Identify high-risk communities across Pennsylvania.



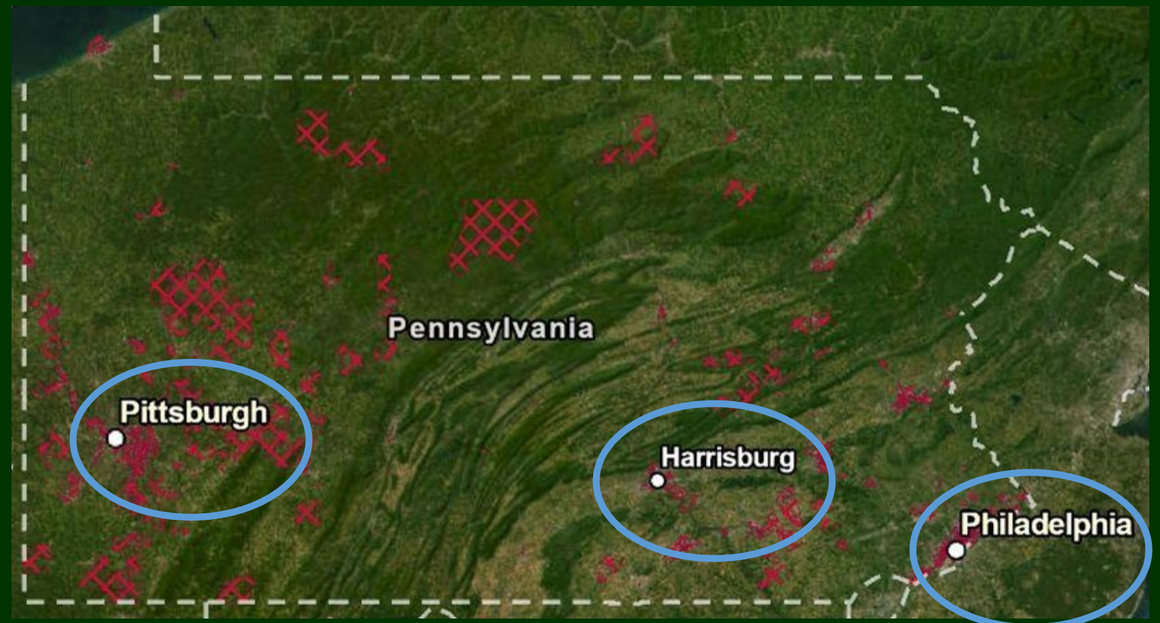
- Criterion 3: Environmental Justice Area

The Pennsylvania Department of Environmental Protection definition of an EJ area includes an EJ score of > 80% based on > 30 environmental, health, and socioeconomic indicators, including:

- Environmental pollution burden: PM2.5
- Sensitive health population: Cancer
- Socioeconomic population: Race, low-income, poverty

PA CARES RADON LIBRARY LENDING PROGRAM

Program Aim 1: Identify high-risk communities across Pennsylvania.



- Criterion 3: Environmental Justice Area

Western PA: Allegheny County (Pittsburgh Metro Area)

- Average radon level: 5.7
- Radon testing disparity score: 21.1
- Target environmental justice areas: 40 zip codes

Central PA: Dauphin County (Harrisburg Metro Area)

- Average radon level: 11.9
- Radon testing disparity score: 41.9
- Target environmental justice areas: 11 zip codes

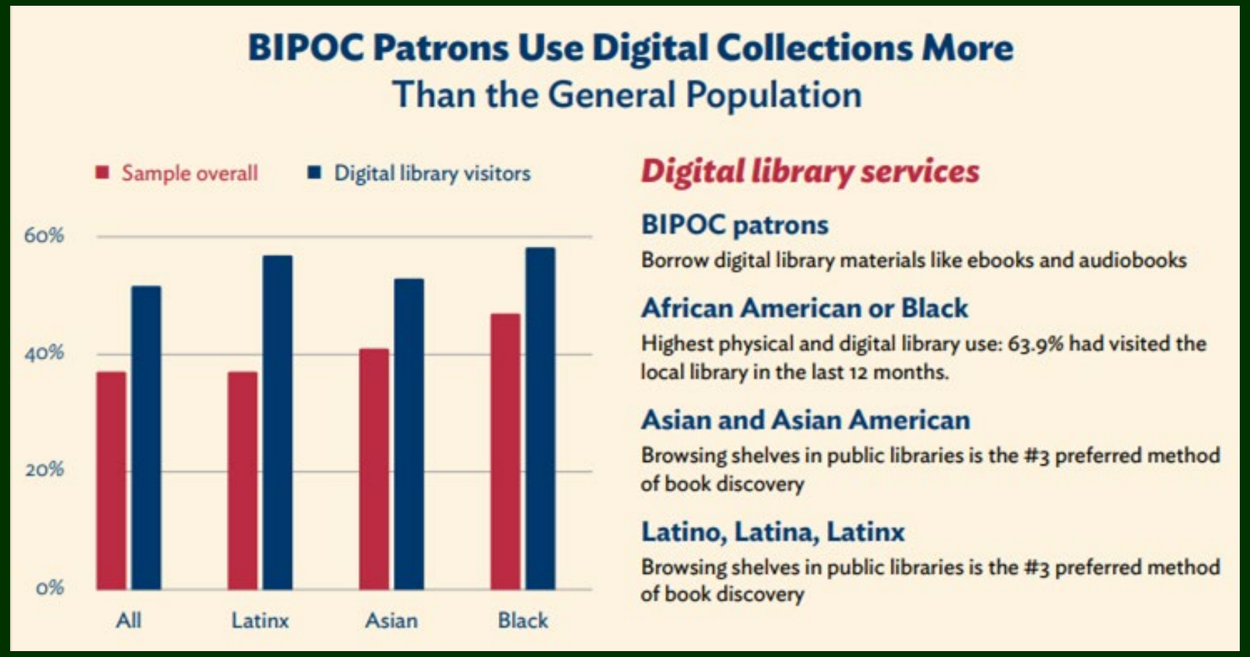
Eastern PA: Bucks County (Philadelpia Metro Area)

- Average radon level: 4.7
- Radon testing disparity score: 15.5
- Target environmental justice areas: 6 zip codes

Communities in high radon and environmental justice areas, with high radon testing disparities, are ideal sites for community-based radon testing.

TRUST IN HIGH-RISK COMMUNITIES

Some high-risk communities have high rates of medical mistrust and often lack access to preventive healthcare.



Partner with public libraries because they:

- are a trusted source of information.
  - REM (Black and Hispanic) and lower-income Americans are more likely to trust public libraries because they:
    - Have a positive impact on their lives and communities.
    - Provide a safe space.
    - Meet individual and public health needs.
      - Provide intensive support for those experiencing health challenges (e.g. mental illness, loneliness, substance use disorders).
- bridge the digital divide (including telehealth initiatives).

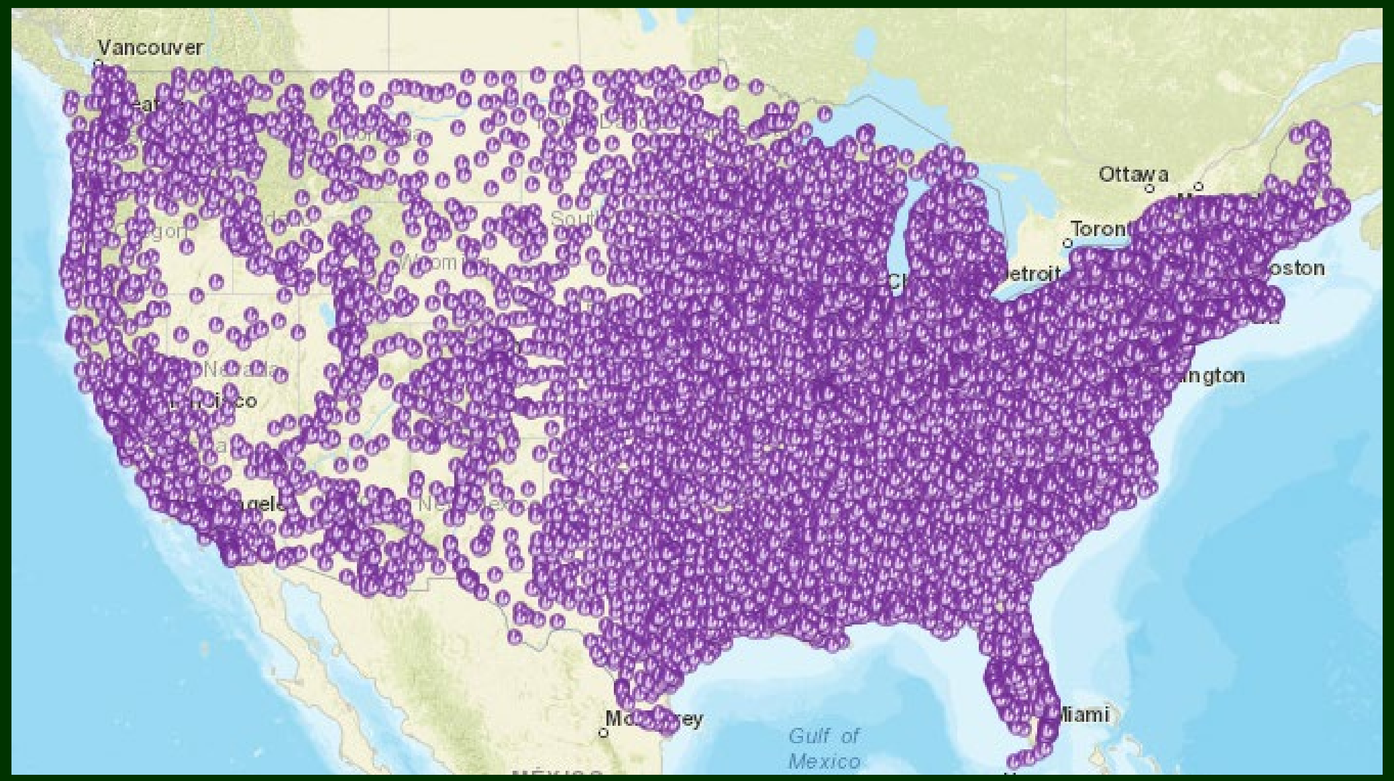
Simon MA, American Journal of Public Health, 2021; American Library Association, 2024; Public Library Association, 2023

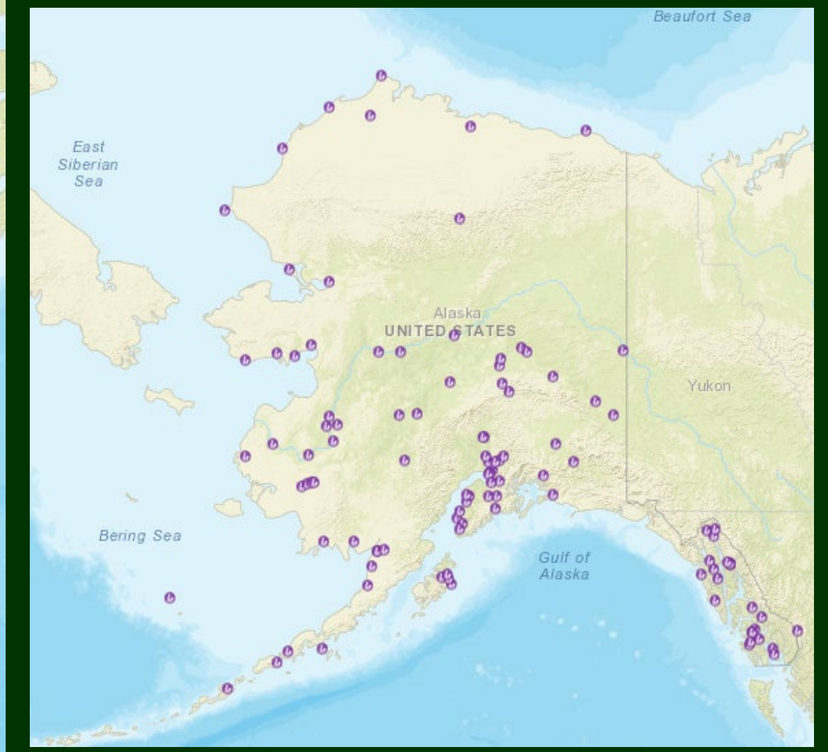
ACCESS IN HIGH-RISK COMMUNITIES

Some high-risk communities have high rates of medical mistrust and often lack access to preventive healthcare.

Partner with public libraries because they have few barriers to access.

- 96% of the US population lives in a public library service area.





Simon MA, American Journal of Public Health, 2021; American Library Association, 2024; Public Library Association, 2023

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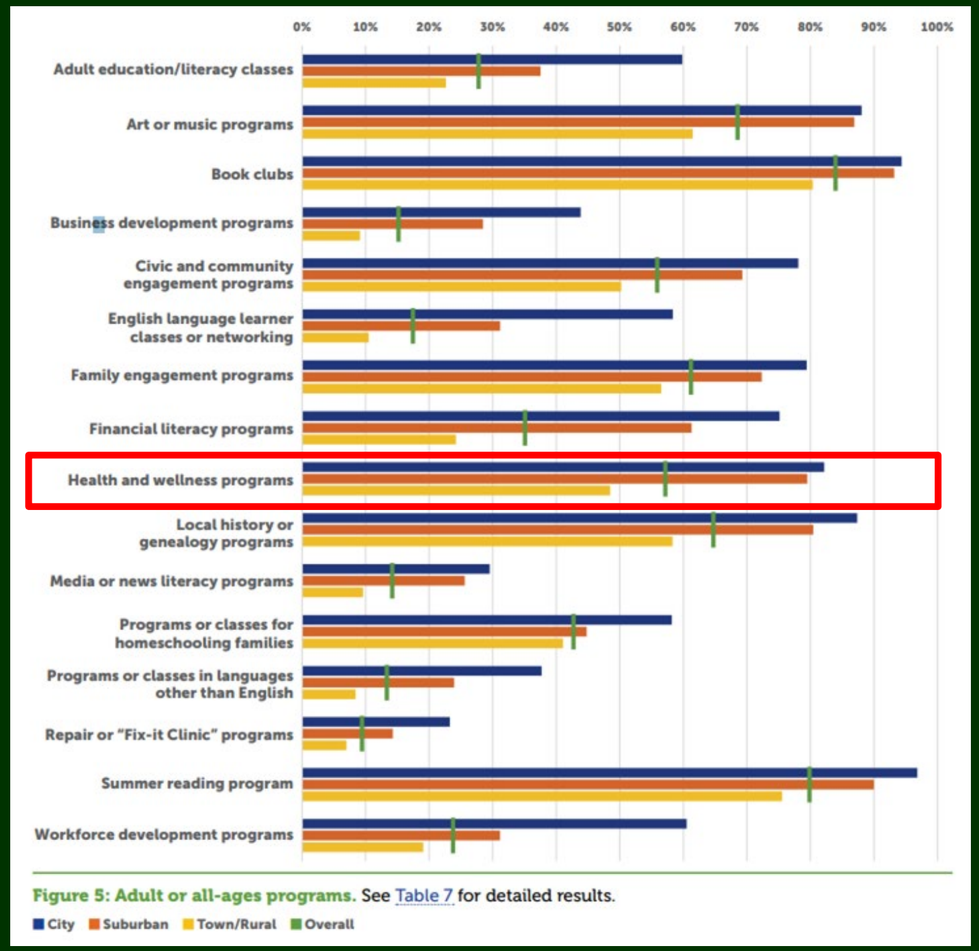


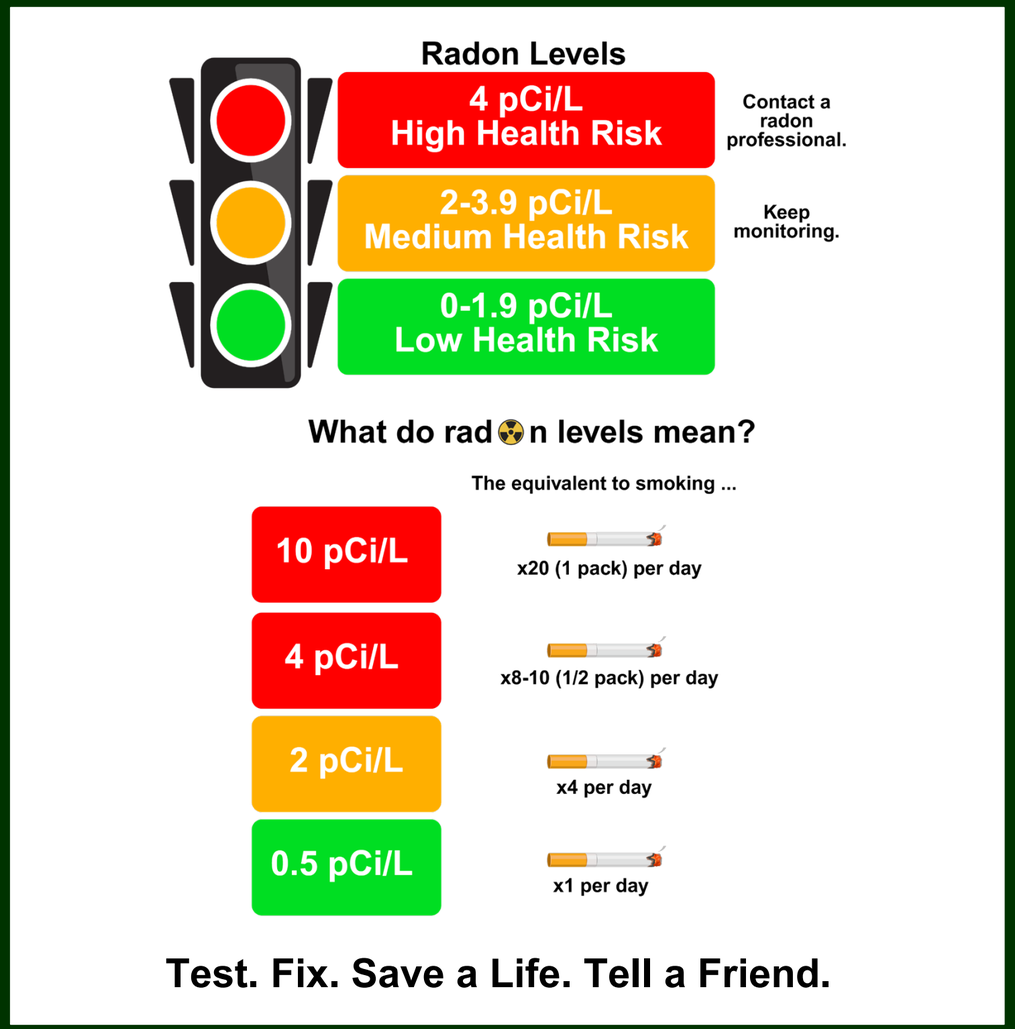
Partner with public libraries because they are emerging sites for:

- public health and wellness programs.
- health equity programs.
- cancer interventions (via telehealth initiatives).

Simon MA, American Journal of Public Health, 2021; American Library Association, 2024; Public Library Association, 2023

PA CARES RADON LIBRARY LENDING PROGRAM

Program Aim 2: Partner with local libraries to pilot a community-based radon library lending program.



Radon Test Kit Contents (3 kits per library)

A digital radon detector

Low-tech support sheet

A laminated handout with:

- step-by-step instructions with pictures.
- a phone number to voluntarily share radon levels by text with our research study to help others in the community.

High-tech support card

A laminated card with a QR code linking to:

- step-by-step instructional videos.
- a website to voluntarily share radon levels with our research study to help others in the community.
- educational materials and resources.
- RHEW social media pages.

PA CARES RADON LIBRARY LENDING PROGRAM

Program Aim 3: Partner with local libraries to launch a statewide community-based radon library lending program.

A Place for Nonprofits and Community Based Organizations

Welcome to the PA Navigate Community Engagement Hub.

Here you will find support for onboarding, ongoing training, technical assistance, and resources for nonprofits and Community Based Organizations (CBOs).

PA NAVIGATE
linking patients to community resources

Looking for help utilizing the PA Navigate system in your organization? We are here to help!
Powered by Community Action Association of Pennsylvania, we are here to help with onboarding, ongoing training, and resources. Our Community Engagement Team is dedicated to the support of organizations in PA Navigate— from claiming your listings, to utilizing PA Navigate's free tools for social and community service organizations, we are here to help you get the most for the communities you serve.

https://pa-navigate.org/

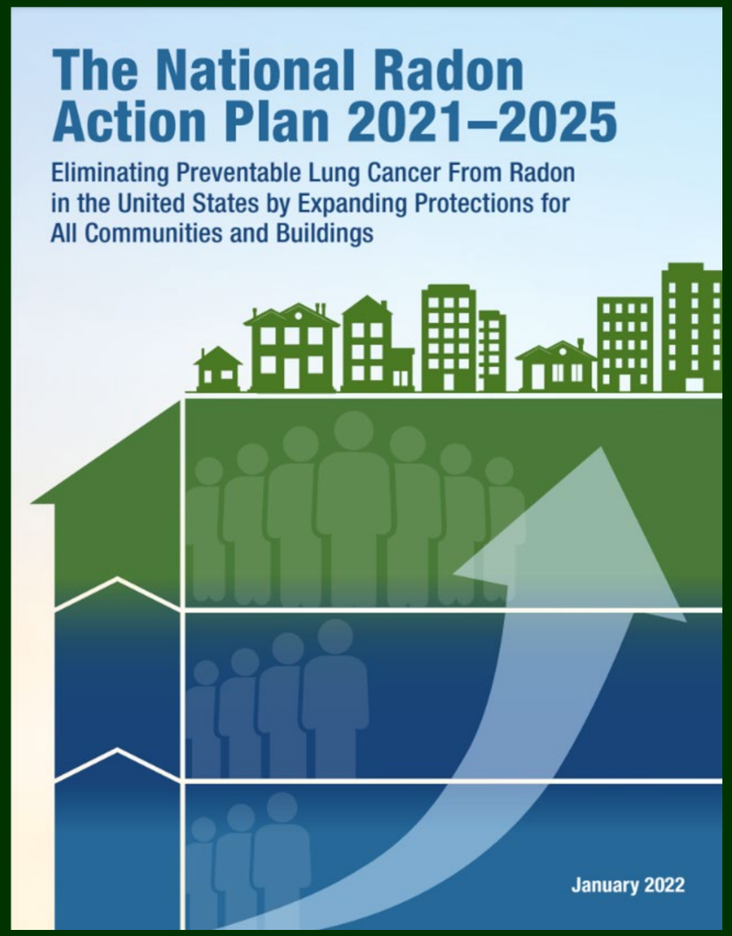
Fourth Quarter: The Defensive Strategy

Policy

NATIONAL POLICY

The National Radon Action Plan

There are no federal laws mandating radon testing in any building type (e.g. residential housing, schools, daycares, or workplaces).



https://www.epa.gov/radon/national-radon-action-plan-strategy-saving-lives

STATE POLICY

Enacted Radon Statutes/Regulations in Indiana

ENVIRONMENTAL LAW INSTITUTE

DATABASE OF STATE INDOOR AIR QUALITY LAWS

DATABASE EXCERPT: RADON LAWS

Spring 2025

IN	**Indiana Code §§ 16-41-38-1--10**
	Requires the state to establish a certification program for persons engaged in radon testing and abatement, and provides for reciprocity. Requires the state to adopt rules requiring training and education as conditions for certification, as well as continuing education and biennial reexamination. Regulations adopted under the law (410 Ind. Admin. Code 5.1-1-1 et seq.) establish certification requirements. Law also requires the state to use any relevant standards or requirements concerning radon gas established by the U.S. EPA.

IN	**Indiana Code §§ 32-21-5-1--12**
	Requires sellers of property containing up to four dwelling units to complete a Seller's Residential Real Estate Sales Disclosure form. Rules adopted under the law (876 Ind. Admin. Code 9-1-2) establish the disclosure form, which requires sellers to disclose knowledge of hazardous conditions on the property, including radon gas, mold, other biological contaminants, lead paint, asbestos insulation, methane gas, PCBs, and toxic materials, as well as moisture or water problems. (See Form 46234 at: http://www.in.gov/iara/webfile/formsdiv/index.html.)

https://www.eli.org/buildings/database-state-indoor-air-quality-laws

STATE POLICY

Enacted Radon Statutes/Regulations in Pennsylvania

ENVIRONMENTAL LAW INSTITUTE

DATABASE OF STATE INDOOR AIR QUALITY LAWS

DATABASE EXCERPT: RADON LAWS

Spring 2025

PA	**Pennsylvania Statutes, tit. 35, §§ 7501--7504**
	Directs the Department of Environmental Resources to implement a radon demonstration project in which the agency develops and implements methods for radon remediation and installs such systems in occupied residential buildings with the permission of the owners. Requires the Department to advise homeowners, in areas affected by high radon concentrations, of ways to avoid unscrupulous or unqualified contractors. Authorizes the Pennsylvania Housing Finance Agency to establish a low-interest loan program to finance home improvements designed to prevent radon infiltration and accumulation in residences.

PA	**Pennsylvania Statutes, tit. 63, §§ 2001 et seq.**
	Requires the Department of Environmental Resources to establish and carry out a certification program for persons who test for, mitigate, or safeguard a building from the presence of radon gas. Prohibits individuals from providing these radon services unless certified under the program. Requires certified radon testers to provide test results to the Department and provides for confidentiality of the information. Regulations adopted under the law (25 Pa. Admin. Code 240) establish the certification program.

PA	**Pennsylvania Statutes, tit. 68, §§ 7301 et seq.**
	Requires sellers of residential real property to complete and deliver to buyers a Seller's Property Disclosure Statement. Requires the State Real Estate Commission to create the disclosure statement. The disclosure statement adopted by state regulation (49 Pa. Admin. Code 35.335a) requires sellers to disclose knowledge of the presence of and/or testing for hazardous substances on the property, including radon, urea-formaldehyde foam insulation, PCBs, lead paint, and asbestos.

https://www.eli.org/buildings/database-state-indoor-air-quality-laws

STATE POLICY

Radon in Schools Workgroup

2025-2026 Legislative Goals: Pass House Bill HB 289 / Senate Bill SB 760

WOMEN for a Healthy ENVIRONMENT

RADON in Schools Workgroup

House Bill 289

2025-2026 REGULAR SESSION

An Act amending the act of March 10, 1949 (P.L.30, No.14), known as the Public School Code of 1949, in grounds and buildings, providing for radon testing.

Co-Sponsorship Memo

Radon Testing in Schools

Prime Sponsor

Representative Tim Briggs
D House District 149

Co-Sponsors

Rep. Jason Ortitay
R House District 46

Rep. Jose Giral
D House District 180

Rep. Carol Hill-Evans
D House District 95

Rep. Chris Pielli
D House District 156

Rep. Jim Haddock
D House District 118

Rep. Robert Freeman
D House District 136

Rep. Jeanne McNeill
D House District 133

Rep. Benjamin Sanchez
D House District 153

Senate Bill 760

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Radon Testing in Schools

Prime Sponsor

Senator Devlin Robinson
R Senate District 37

Co-Sponsors

Sen. Camera Bartolotta
R Senate District 46

Sen. Art Haywood
D Senate District 4

Sen. John Kane
D Senate District 9

Sen. Wayne Fontana
D Senate District 42

Sen. Judith Schwank
D Senate District 11

Sen. Tracy Pennycuick
R Senate District 24

Sen. Jay Costa
D Senate District 43

Sen. Nick Miller
D Senate District 14

https://www.palegis.us/legislation/bills/2025/sb760 ; https://www.palegis.us/legislation/bills/2025/hb289

CLINICAL POLICY

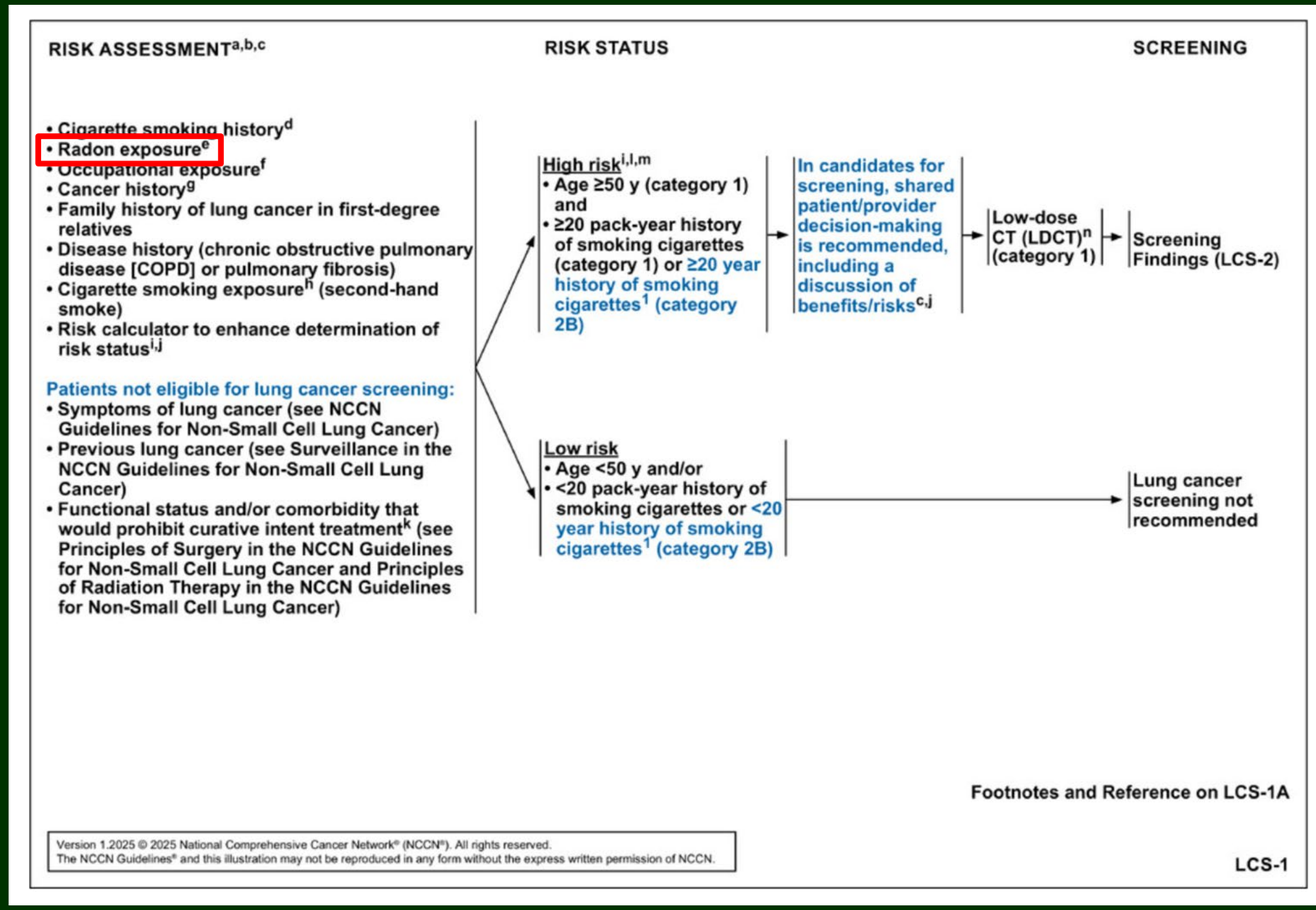
CLINICAL GUIDELINES + INSURANCE COVERAGE

Table 1. Lung cancer screening guidelines.

Clinical Practice Guideline	Age Range (Years)	Smoking pack-year history	Years since quit smoking	Additional Risk Factors Included
US Preventive Services Task Force (USPSTF)	50-80	≥ 20	Quit ≤ 15	No
American Cancer Society (ACS)	50-80	≥ 20	None	No
National Comprehensive Cancer Network (NCCN)	≥50	≥ 20	Varies	Yes (includes radon)

CLINICAL POLICY

CLINICAL GUIDELINES + INSURANCE COVERAGE



https://jnccn.org/view/journals/jnccn/23/1/article-e250002.xml

End Zone Celebration

Test. Fix. Save a Life. Tell a Friend.

END ZONE CELEBRATION

Test. Fix. Save a Life. Tell a Friend.

Radon is invisible, but not inevitable. When we play as one team, we can end lung cancer now!

Postgame Press Conference

Q & A

POSTGAME PRESS CONFERENCE

Q & A

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@Dr. Dij Lab

@DrDijLab

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Mitchell Laboratory

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- Alexis Nsafoah
- Andrew Aigboeghian, MS
- Arslie Louis-Jacques, BS
- Ferrah Reid
- Kirstyn Acheampong
- Mia Ray, BS
- Michael Malak
- Moses Kamita, PhD
- Musinu Zakari, PhD
- Shamirah Johnson, MS

RHEW Partners

RADON HEALTH EQUITY WORKGROUP

EDUCATION

TESTING MITIGATION

RESEARCH