SECTION #7

Appalachian Culture and Community

- Being a Sojourner in Appalachia Presentation
  By Reggie Robinson and Janice Wright

- The Voice of The Community
  By Beverly Stringer

- Appalachian Translational Research Network: Appalachia & Appalachian Health: Quick Facts

- Executive Summary of Analysis of Mental Health and Substance Abuse Disparities & Access to Treatment Services in the Appalachian Region
  Authors: Z. Zhang, Ph.D.; A. Infante, MPA; M. Meit, MA, MPH; and N. English, MS

- Executive Summary of Health Disparities in Appalachia
  Prepared by: PDA, Inc., The Cecil G. Sheps Center for Health Services Research, and Appalachian Regional Commission

- Appalachia: Where Place Matters in Health
  Authors: B. Behringer, MPH and G. Friedell, MD

Public Health Prevent. Promote. Protect. Canton City Health District
THRIVE CANTON - STARK COUNTY EVERY CHILD DESERVES TO CELEBRATE THEIR FIRST BIRTHDAY
EVERY BABY MATTERS OEI OHIO INSTITUTE FOR EQUITY IN BIRTH OUTCOMES
FUNDED BY SAMHSA
STARK COUNTY Mental Health & Addiction Recovery StarkMHAR.org

Being a Sojourner in Appalachia

Acquiring Cultural Humility

PRESENTERS

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AGENDA

- **Part 1: Defining Culture**
- **Part 2: Discovering Appalachian Culture**
- **Part 3: Developing Skills in Cultural Humility**

THE DEFINITION OF CULTURE

THE "I/ME " THE "YOU/ME" AND THE "I/YOU/ME"

WHY THIS TOPIC IN 2017?

- Cultural Competence is the "buzzword" in the worlds of public health and health care
- Focus has been on "underserved populations"- how to provide accessible and appropriate care and services (deficit model)
- Culture is a broad concept
- Competence is vaguely defined

Begs the question – Can one be truly culturally competent?
Hunt, 2005

THE ISSUE

- Cultural incompetence exists under various guises
- Contributes to health disparities between majority and minority groups
- Individuals who have experienced racism and discrimination develop a distrust for the healthcare system
- Armstrong,et al, 2008

CULTURE AND CO-CULTURE

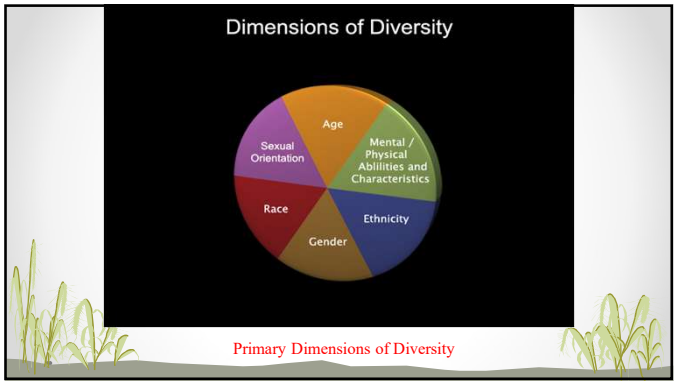
- **Culture** unique combination of rituals, beliefs, ways of thinking and ways of behaving
- **Co-Culture:** exists within the larger dominant culture but differs from the dominant culture in some significant characteristic.

THE MEANING OF CULTURE

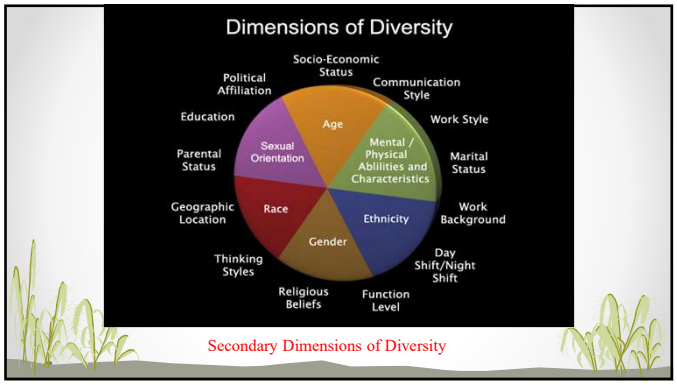
- We are all multicultural beings
- The saliency of cultural markers vary from person to person
- The saliency of cultural markers is largely situational
- The saliency of cultural markers can change over time
- Aspects of co-cultural identity are typically more salient than those associated with dominant group status

Culture is the sharing of knowledge, customs, food, language and rituals among a group of people.
Orbe,2010

THE CULTURAL PYRAMID



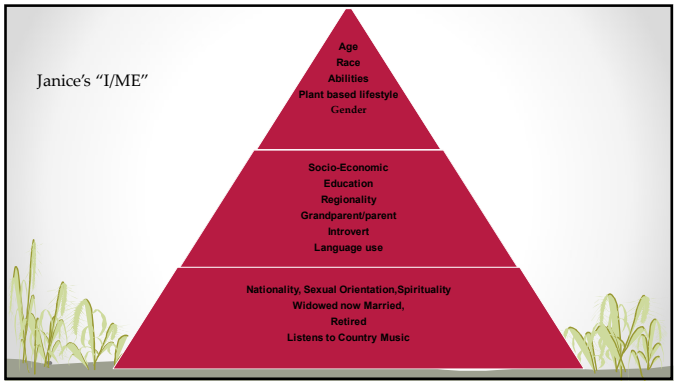
Primary Dimensions of Diversity

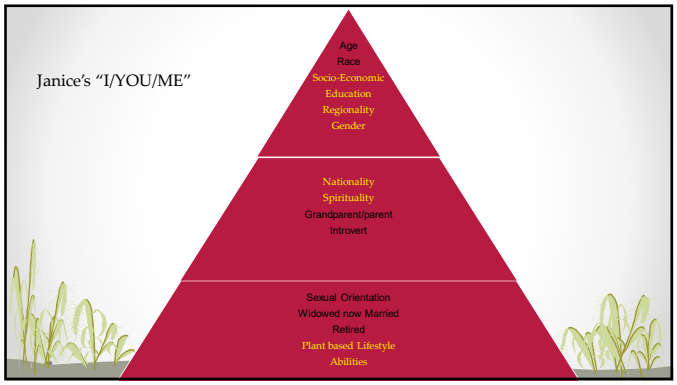


Secondary Dimensions of Diversity

ASPECTS OF CULTURE

Nationality
Regionality
Age
Urban/Suburban/Rural
Socioeconomic level
Educational experience
Religion/Spirituality
Family rituals/history
Sexual Orientation/Gender Identity
Abilities
Race
Ethnicity
Dependent vs Independent


Janice's "I/ME"
Age
Race
Abilities
Plant based lifestyle
Gender
Socio-Economic
Education
Regionality
Grandparent/parent
Introvert
Language use
Nationality, Sexual Orientation,Spirituality
Widowed now Married,
Retired
Listens to Country Music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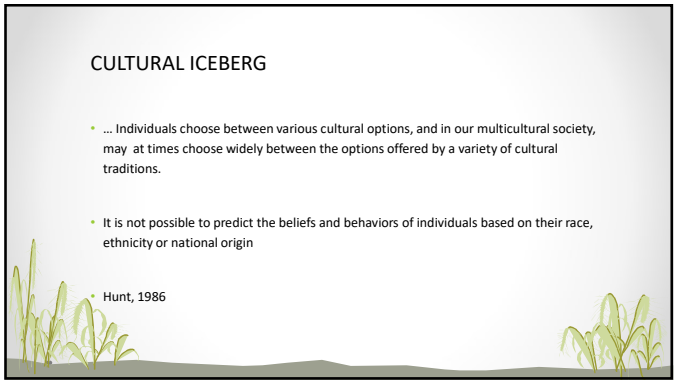
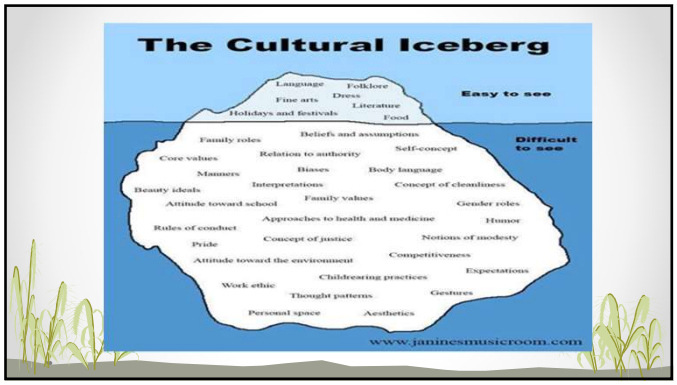

CULTURAL ICEBERG
• … Individuals choose between various cultural options, and in our multicultural society, may at times choose widely between the options offered by a variety of cultural traditions.
• It is not possible to predict the beliefs and behaviors of individuals based on their race, ethnicity or national origin
• Hunt, 1986



THE YOU/ME

- How do others see you?
- How do you know?
- Do we ever ask?

PLUCKED FROM THE HEADLINES

- Melungeons from the Appalachian region

CUTURAL ASPECTS TO CONSIDER

- **Assimilation** – attempts to fit into the dominant culture
- **Accommodation** – keeping one's co-cultural identity while striving for positive relationships with the dominant culture
- **Separation** – when the marginalized group relates as exclusively as possible with its own group and as little as possible with the dominant group
- **Co Opting Culture** - the process by which a group subsumes or assimilates a smaller or weaker group with related interests; or, similarly, the process by which one group gains converts from another group by attempting to replicate the aspects that they find appealing without adopting the full program or ideals.

CULTURAL IDENTITY

Actually the most important part of culture… is that which is hidden and internal but governs the behavior encounter .

- **Hall, 1976**

Cultural Proficiency Continuum

National Center for **Cultural Competence** (NCCC). Cultural Competence Continuum. Adapted from *Toward A Culturally Competent System of Care, Volume 1*, Cross et al.

Cultural Proficiency	**Systems and organizations hold cultures in high esteem, as a foundation to guide all of their endeavors**
Cultural Competence	**Systems and organizations that demonstrate an acceptance and respect for cultural differences**
Cultural Pre-competence	**Awareness within systems and organizations of their strengths and areas for growth to respond effectively to CLD groups**
Cultural Blindness	**Expressed philosophy of viewing and treating all people the same**
Cultural Incapacity	**Lack of capacity of systems and organizations to respond to effectively to the needs ,interests and preferences of CLD groups**
Cultural Destructiveness	**Attitudes, patterns, practices and structures within organizations and systems that are destructive to a CLD group**

WHAT IS "CULTURAL COMPETENCY?"

- **CULTURAL COMPETENCY** acknowledges that, while people develop a more or less automatic depth of understanding of the subject positions and cultures into which we are born and socialized, achieving something like that depth of understanding of other subject positions and other cultures is far more difficult, but not impossible.
- The process of gaining depth of understanding of subject positions and cultures other than your own is the process of gaining *various degrees* of CULTURAL COMPETENCY

CULTURAL PROFICIENCY

- Esteeming culture
- Knowing how to learn about individual and organizational culture
- Interacting effectively in a variety of cultural environments

✓

CULTURE HUMILITY

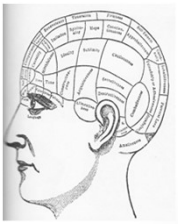
- Is a lifelong process of self-reflection and self-critique
- Is best defined not as a discrete end point but as a commitment and active engagement in a lifelong process that individuals enter into on an ongoing basis with patients communities, colleagues and with themselves.
- Tervalon and Murray-Garcia, 1998

CULTURAL HUMILITY

- One on one open dialogue
- Flexibility
- Compromise
- Commitment to self-evaluation and critique
- Development of self-awareness and respect for differences
- Redressing power imbalances
- Development of mutually beneficial and non paternalistic partnerships with communities

LEVELS OF MINDFULNESS

- Unconscious incompetence
- Conscious incompetence
- Conscious competence
- Unconscious competence



UNCONSCIOUS BIAS*

- Our brains unconsciously make decisions on what feels safe, likeable, valuable, and competent.
- "We make decisions largely in a way that is designed to confirm beliefs that we already have."
- Unconscious beliefs impact the way we perceive others, perceive ourselves, and as such influence our organizations.

*www.cookross.com Dr. Howard Ross

DISCOVERING CULTURE

JUST WHO AM I TALKING TO ?

WHAT DO YOU THINK OF WHEN WE SAY "RURAL" or "APPALACHIA"?

How much do you know?

- **Appalachian Culture Quiz**

- **Knowledge is culturally based**
- **Knowledge is cumulative**
- **Collectively we can achieve much more than we can individually**

SHARING INFORMATION : THE I/YOU/ME

- **We can learn new information that is culturally different from what we already know**
- **It is our responsible to share correct /factual information**
- **If we do not know – then ask someone who does**

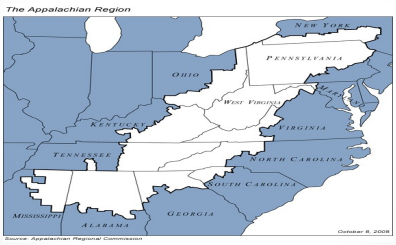
Are They the Same?

Rural Appalachia

Does Appalachian only mean White?

- African-Americans made up more than 10 percent of the region's population by 1860, with Appalachia's ethnic profile shifting dramatically as multiracial families boomed. (Later, those with blended Scots-Irish, Native American and African-American roots would come to be known as Melungeons.)
- The term "Affrilachia" — a portmanteau of "African" and "Appalachian" coined by Kentucky poet laureate Frank X Walker — has brought together a loose collective of multiracial artists previously excluded from conversations about what it means to be an Appalachian. The word is now an entry in the Oxford American Dictionary, second edition. In 2005, as Simon has noted, Appalachian State University professor Fred Hay successfully petitioned the Library of Congress to change the definition of Appalachians from "Mountain Whites" to "Appalachians (People)."

Does Appalachian only mean Poor?



THE CULTURE OF RURAL OHIO

Myths :

1. All rural counties are Appalachian
2. Rural families live on farms
3. Rural poverty looks like urban poverty
4. People in rural areas who are poor live off of government welfare
5. Rural poor tend to be single mothers and their children
6. Homelessness is an urban problem
7. Rural does not mean homogeneous

Realities:

1. Only 32 counties are in the Appalachian region
2. Only 7.6 of rural employment is farming - nationwide
3. Rural poverty = white two adult household
4. Participation in social services is lower in rural areas
5. 42.3% are husband-wife family configurations
6. Difficult to count -living with family members or at camping facilities.
7. Traditions and customs vary from small town to small town or small community to small community

CULTURAL IDENTITY OF THE SCOTS-IRISH THAT SETTLED IN APPALACHIA (JAMES WEBB, BORN FIGHTING)

- **Individualistic (self-reliant)**
- **Egalitarianism (everyone equal)**
- **Stubbornness**
- **Toughness**
- **Mistrusted any form of aristocracy**
- **Patriotic,**
- **Shaped by thousands of years of fighting (heavily Scots-Irish WV ranked first, second or third in military casualties in every U.S. war in 20th century).**
- **Culture founded on guns (NRA)**

CORE APPALACHIAN VALUES (KEEFE, 2005)

- Independence
- Individualism
- Egalitarianism and Personalism
- Familism
- A Religious Worldview
- Neighborliness
- Love of the Land and Place
- Avoidance of Conflict

THE ETHIC OF NEUTRALITY (HICKS)

- One must mind his or her own business
- One must not call attention to oneself
- One must not assume authority over another
- One must avoid argument and seek agreement

SYNTHESIZING RURAL CULTURE

Barriers

- ★ Lack of accessibility
- ★ Greater poverty
- ★ Older populations
- ★ Lack of privacy
- ★ Denial
- ★ Isolation
- ★ Stigma
- ★ Conservatism
- ★ Value placed on local control
- ★ Distrust of outsiders

Bridges

- Self-reliance
- Conservatism
- Distrust of outsiders
- Strong religious beliefs
- Strong work orientation
- Emphasis on family
- Individualism

HEALTH DISPARITIES IN RURAL COMMUNITIES

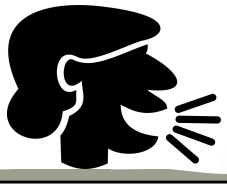
- Broad range of health disparities
- Higher rates of premature births in rural communities
- More likely to stigmatize mental illness
- Mental illness may be underdiagnosed and inadequately treated

HEALTH DISPARITIES IN RURAL COMMUNITIES

- Health disparities experienced by rural Americans are complicated by a number of factors. One factor is that rural areas often lack the resources for adequate healthcare and prevention services.
- Another complication arises from the fact that rural social networks may be close-knit and highly stratified, with distinct groups of insiders and outsiders.

Language Disparities in Areas of Poverty

- Language is the foundation of all communication
- Without adequate and appropriate language individuals are not able to request, comment, survive in their environment or any other environment
- Individuals must be able to "code-switch" – use different language forms in different situations



Understand the Use of Language Bridges out of Poverty,2001

Type of Language Register	Example
Frozen	Language that is always the same – The Lord's Prayer
Formal	Standard sentence syntax for work and school. Has complete sentences and specific word choice
Consultative	Formal register when used in conversation. Discourse pattern not as direct
Casual	Language used among friends, family. 400 – 800 word vocabulary.
Intimate	Language used between close friends, lovers, twins.

Language in Children : ages 1 to 4

Meaningful Differences in the Everyday Experiences of Young American Children,

Number of Words Exposed to	Economic Group	Affirmations	Prohibitions
13 million words	Welfare	1 for every	2
26 million words	Working class	2 for every	1
45 million words	Professional	6 for every	1

Hidden Rules – Bridges out of Poverty,2001

	Poverty	Middle Class	Wealth
Education	Valued and revered as abstract not a reality	Crucial for climbing the success ladder and becoming successful	Necessary tradition for making and maintaining connections
Language	Casual register – language is all about survival	Formal register- Language is about negotiation	Formal register – Language is about networking

COUNSELOR CHARACTERISTICS

Shipley, 2006

- Spontaneity
- *Flexibility*
- Concentration
- Openness
- Honesty
- *Emotional Stability*
- *Trustworthiness*
- *Self-awareness*
- *Belief in people's abilities to change*
- Commitment to people
- *Cultural competence (humility)*
- Knowledge and wisdom
- Good communication skills – know the language differences
- Academic and clinical competence

RAPPORT- THE I/You/Me

Shipley, 2006

- Study information about the client and the community in which the person resides
- Use internal frame of reference to view the client's background
- Adopt the client's internal frame of reference – know and acknowledge hidden rules

KEYS TO WORKING EFFECTIVELY WITH APPALACHIAN TRAUMA SURVIVORS

- Empathy- not deficit model – what are the resources
- Able to talk openly
- Self-awareness
- Flexible
- Willingness to learn from survivors
- Able to treat survivor as equal
- Good listener

Resources (Bridges out of Poverty, 2001)

Resources	Very Low ------- High Enough 1 2 3 4 5	Planning
Financial		
Emotional		
Mental		
Spiritual		
Physical		
Support systems		
Knowledge of middle-class hidden rules		
Role models		

APPROACHING COUNSELING WITH PEOPLE IN THE APPALACHIAN CULTURE

- Familiarize self with various aspects of the culture
- Make self accessible
- Adopt flexible services
- Involve who identify with the culture in the system of services
- Use action-oriented, crisis models of intervention

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THE APPALACHIAN INHERITANCE: A CULTURALLY TRANSMITTED TRAUMATIC STRESS SYNDROME? (CATTELL-GORDON,)

- "The roots of the principal problem of the poor lie outside of the individual and the culture."
- A culture of contradictions:
  - Warm and hospitable, yet suspicious of outsiders
  - Proud of their independence, yet uncertain about their sense of identity
  - Determined to fight injustice, but often submissive and alienated in the face of exploitation
  - Resourceful people, but when trouble comes they can become depressed, filled with rage, helpless, anxious and fearful.

A CHANGING ENVIRONMENT

- Young continue to leave
- Population aging
- Housing stock deteriorating
- Increase in service jobs/loss of manufacturing jobs
- Still lower levels of education attainment, more poverty and higher unemployment, etc.
- Oil/Gas Industry: the Great Panacea
  - Hiring local workforce?
  - The New Millionaires
  - The land poor stay poor
  - Environmental Concerns

Internet in Appalachia
Columbus Dispatch June, 2016

- Availability v.s. Adoption of Internet
- Availability has reached 100% in the state
- Appalachian adoption is 68%
- Non-Appalachian adoption is 78%

Reasons for lack of adoption

1. Cost
2. Lack of skills
3. Relevance

SUBSTANCE ABUSE IN APPALACHIA (DUNN, BEHRINGER & BOWERS)

- Major health concern in Appalachia
- Alcohol most abused drug in Appalachia
- Cigarette smoking more prevalent among rural Appalachians
- 31.5% Appalachian Ohio versus 26.1% non-Appalachian Ohio
- Incidence and death rates from cancer higher
- Higher use of smokeless tobacco
- Nonmedical use of prescription drugs, particularly painkillers higher in Appalachia

SUBSTANCE ABUSE IN APPALACHIA (CONTINUED)

- Oxycontin is the most widely abused prescription drug in Central Appalachia
- More than 340 individuals died from overdoses related to synthetic narcotics in eastern kentucky in a 16-month period
- 485 people died in Kentucky in 2008 from overdoses of prescription drugs, including methadone, oxycodone, morphine and fentanyl.
- Methamphetamine abuse on the rise in Appalachia
- 20 to 30% of rural meth labs discovered because of fires and explosions resulting in burns and death.

IMPACT ON COMMUNITY

- **Drain on local economy**
- **Workforce weakened**
- **Treatment is costly and not always available**
- **Family stability compromised**
- **Increase in rural crime**

SUBSTANCE ABUSE IN SOUTHERN OHIO (CLEVELAND PLAIN DEALER, FEB. 26, 2011)

- **Portsmouth, Scioto County, public health commissioner declared public health emergency**
- **360% increase in accidental drug overdose deaths**
- **Highest hepatitis C rate in Ohio**
- **80 to 90% of the drug cases in the prosecutor's office involve prescription drugs and the most common is oxycontin**
- **64 babies (10 %) born with drugs in their system**
- **Break-ins and robberies have increased to pay for drug addiction**

SYNTHESIZING RURAL CULTURE

Barriers

- ★ Lack of accessibility
- ★ Greater poverty
- ★ Older populations
- ★ Lack of privacy
- ★ Denial
- ★ Isolation
- ★ Stigma
- ★ Conservatism
- ★ Value placed on local control
- ★ Distrust of outsiders

Bridges

- Self-reliance
- Conservatism
- Distrust of outsiders
- Strong religious beliefs
- Strong work orientation
- Emphasis on family
- Individualism

BARRIERS

- Community norms may be supportive of ATOD abuse.
- "Good drug/bad drug" attitudes: "Thank goodness the kids are JUST drinking/smoking weed."
- Finger pointing- If _____ (cops, parents, schools) were doing their job, we wouldn't have this problem.
- "We tried that already." "That will never work HERE."
- "You don't understand- you're not from here."

HEALTH DISPARITIES IN RURAL COMMUNITIES

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EFFECTIVE COMMUNICATION

- **Sensitivity**
- **Respect**
- **Empathy**
- **Objectivity**
- **Listening Skills**
- **Motivation**

WHAT ARE COMMUNITIES OF PRACTICE?

"They're groups of people informally bound together by shared expertise and passion for a joint enterprise…. A community of practice may or may not have an explicit agenda on a given week…. People in communities of practice share their experiences and knowledge in free-flowing, creative ways that foster new approaches to problems…. Communities of practice can drive strategy…solve problems, promote the spread of best practices, develop people's professional skills…."

Wenger and Snyder (2000)

WHAT ARE COMMUNITIES OF PRACTICE?

- **… self-generating social networks…**
- **… common context of meaning…**
- **… a recognizable bond among those involved**

Capra, 2002

DESIGNED AND EMERGENT STRUCTURES

Designed structures provide stability.

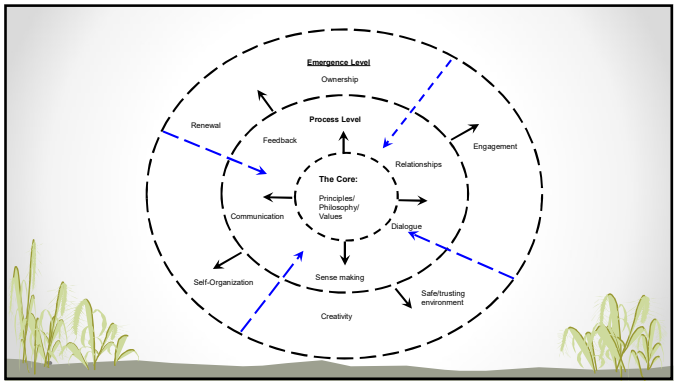
Emergent structures…provide novelty, creativity, and flexibility.

Capra, 2002

WHAT IS THE STRUCTURE OF A COMMUNITY OF PRACTICE?

"A community of practice can exist entirely within a unit or stretch across divisional boundaries. A community can be made up of tens or even hundreds of people…. Membership in a community of practice is self-selected."

Wenger & Snyder, pp. 141-142



LEADERSHIP ROLES IN COMMUNITIES OF PRACTICE

"Although communities of practice are fundamentally informal and self-organizing, they benefit from cultivation. Managers should…identify potential communities of practice…provide the infrastructure that will support such communities…[and] use nontraditional methods to assess the value of the communities of practice."

Wenger & Snyder, pp. 143-144.

CULTURAL CONSIDERATIONS: WHAT TO DO

- Respect client regardless of educational level
- Take strengths perspective
- Avoid teacher/student dynamics
- Appreciate rural humor
- Avoid ridicule and sarcasm
- Use stories, examples and metaphors

CULTURAL CONSIDERATIONS: WHAT NOT TO DO

- Use jargon and "educated words"
- Overwhelm clients with paperwork early on
- Stereotype and/or depersonalize clients trying to control or threaten
- Be humorless

PRACTICAL APPLICATION

Stages of Community Readiness

9. Community Ownership
Program(s) are an important part of the community.

8. Confirmation/ Expansion
Effective training and evaluation in place

7. Stabilization
Full awareness/implementation of program(s)

6. Initiation:
A program is being implemented

5. Preparation:
Preparing to take action on the issue

4. Preplanning:
Awareness of the issue

3. Vague awareness:
Recognition of the issue, however no plans to take action

2. Denial:
Belief that the problem does not exist within the community

1. No Awareness:
The community accepts the behavior as normative

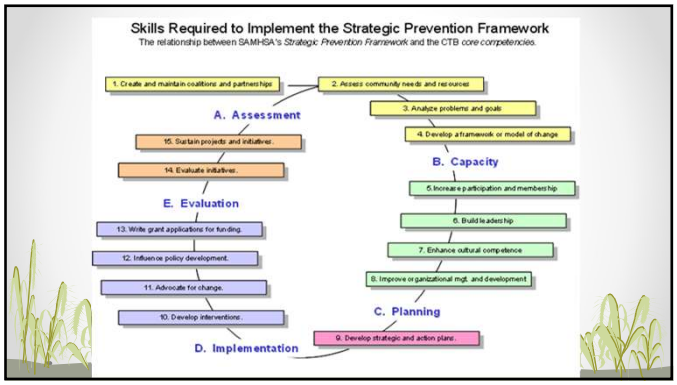
ASSESSING READINESS[14]		COMMUNITY ACTION
Readiness Stage	Community Response	Ideas
1. No awareness	Relative tolerance of drug abuse	Create motivation. Meet with community leaders involved with drug abuse prevention; use the media to identify and talk about the problem; encourage the community to see how it relates to community issues; begin pre-planning.
2. Denial	Not happening here, can't do anything about it	
3. Vague awareness	Awareness, but no motivation	
4. Pre-planning	Leaders aware, some motivation	
5. Preparation	Active energetic leadership and decision-making	Work together. Develop plans for prevention programming through coalitions and other community groups.
6. Initiation	Data used to support prevention actions	Identify and implement research-based programs.
7. Stabilization	Community generally supports existing program	Evaluate and improve ongoing programs.
8. Confirmation/ Expansion	Decision-makers support improving or expanding programs	Institutionalize and expand programs to reach more populations.
9. Professionalization	Knowledgeable of community drug problem; expect effective solutions	Put multi-component programs in place for all audiences.

PRACTICAL APPLICATION

- **For a wide-spread impact, rural prevention education should target many different venues including schools, community-based organizations, faith-based organizations, and health-care facilities.**
- **Make education programs congruent with cultural values and traditions.**
- **Identify assets and non-traditional resources the community can draw on.**
- **Rural prevention specialists have suggested sharing information in pre-existing social networks such as agricultural organizations, church auxiliaries, talking circles, platicas, parent-teacher associations, or bowling leagues.**

PRACTICAL APPLICATION

- **Involve the community in the assessment and planning---as a matter of fact, the entire SPF process!**
- **Don't just stick with the "usual suspects" as far as your planning team. Utilize members of the target audience as well as the not-so-obvious community leaders.**



CULTURALLY HUMBLE BEHAVIOR

- **Value diversity**
- **Assess one's own culture**
- **Manage the dynamics of difference**
- **Institutionalize cultural knowledge**
- **Adapt to diversity**

QUESTIONS


GRACIAS
THANK
YOU
ARIGATO
SHUKURIA
BOLZĪN
MERCĪ
BÍYAN
TASHAKKUR ATU
SUKSAMA
DANKSCHEEN
JUSPAZAR
GOZAIMASHITA
EFCHARISTO

Appalachian Translational Research Network

The Ohio State University

The Voice of The Community

Beverly Stringer, BSC
Community Engagement Coordinator of
ATRN/CE of SE Ohio
December 14, 2017

CTSA Clinical & Translational Science Awards

Accelerating Discoveries Toward Better Health

The Ohio State University Center for Clinical and Translational Science

Appalachian Translational Research Network

The Ohio State University

Key Features of Community Engagement

- Working collaboratively with the community
- Involves partnerships (groups, agencies, institutions or individuals)
- Identifying disparities
- Working on solutions together
- Being genuine

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Community Participation

- Being involved in discussions from beginning
- Community members know valuable information
- They have ideas/solutions
- Want to be a part of the process
- Improved relationships among stakeholders

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Community Empowerment

- Help individuals and groups gain greater control over their lives
- Help achieve important goals
- Outcome of community engagement
- Recognize the expertise all

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Become Knowledgeable About the Community

- Find out about the community health disparities
- Find out about the economics
- Trends
- Learn about their perceptions

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A Casual Conversation

- South East Ohio Community Engagement Advisory Board
- Determined they wanted to do something
- Invited others to present their efforts
- Collected Information
- Application for NIH Grant

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Community Engagement of Southeast Ohio

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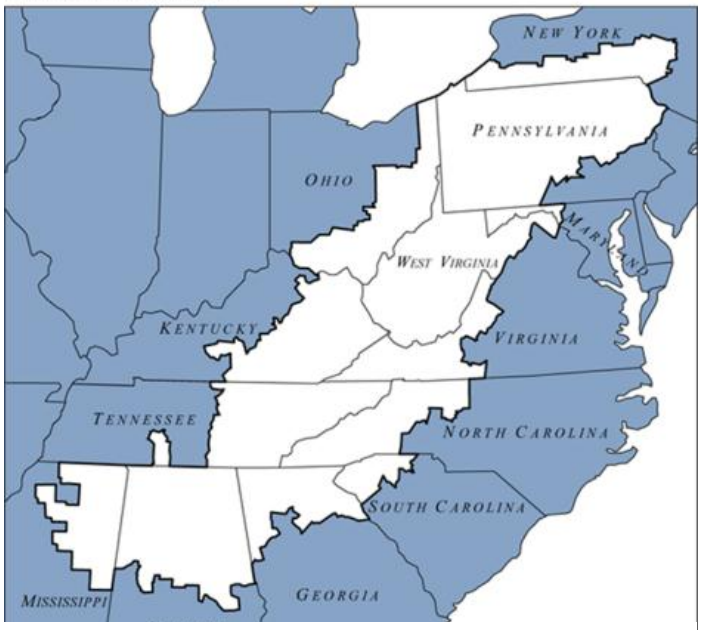
Appalachia & Appalachian Health: Quick Facts

The Appalachian region stretches from southern New York to northern Mississippi by way of the Appalachian Mountains, and includes all or part of 13 states: New York, Pennsylvania, Ohio, Maryland, West Virginia, Virginia, Kentucky, North Carolina, Tennessee, South Carolina, Georgia, Alabama, and Mississippi.[1]

The Appalachian Region



Retrieved from:
http://www.arc.gov/appalachian_region/MapofAppalachia.asp

Unique features include:

- A shared culture, with Appalachians reporting health as a valuable commodity[2] and self-reliance and traditional lifeways said to be of utmost importance[3]
- ~67% of Appalachian counties are rural[4] as compared to ~21% of U.S. counties[5]
- Poverty rates exceed national averages (15.4% v. 13.5%)[6]
- Appalachian residents face a disproportionately high amount of poor health:
  - More likely to report diabetes, heart disease, and stroke, particularly in distressed counties[7-8]
  - Death rates related to coronary heart disease exceed national averages by 15-21%[9]
  - Death rates related to stroke exhibit rate ratios of 1.1-1.3, with the general U.S. serving as the reference group[10]
  - Cancer death rates exceed national levels (166.7 per 100,000 population) in both rural Appalachia (176.3) and all of Appalachia (173.1)[11]
- Barriers to enhancement of health include:
  - Health professional shortage[12]
  - Less commercial health insurance coverage[13]
  - Fear, lack of knowledge, and distrust of the medical system[14]

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Executive Summary

Creating a Culture of Health in Appalachia: Disparities and Bright Spots is an innovative research initiative sponsored by the Robert Wood Johnson Foundation (RWJF) and the Appalachian Regional Commission (ARC) and administered by the Foundation for a Healthy Kentucky. This multi-part health research project will, in successive reports: measure population health and document disparities in health outcomes in the Appalachian Region compared to the United States as a whole, as well as disparities within the Appalachian Region; identify "Bright Spots," or communities that exhibit better-than-expected health outcomes given their resources; and explore a sample of the Bright Spot communities through in-depth, field-based case studies. Taken together, these reports will provide a basis for understanding and addressing health issues in the Appalachian Region. This research initiative aims to identify factors that support a Culture of Health in Appalachian communities and explore replicable activities, programs, or policies that encourage better-than-expected health outcomes that could translate into actions that other communities can replicate.

This first report, *Health Disparities in Appalachia*, measures population health in Appalachia and documents disparities between the Region and the nation as a whole, as well as disparities within the Appalachian Region.

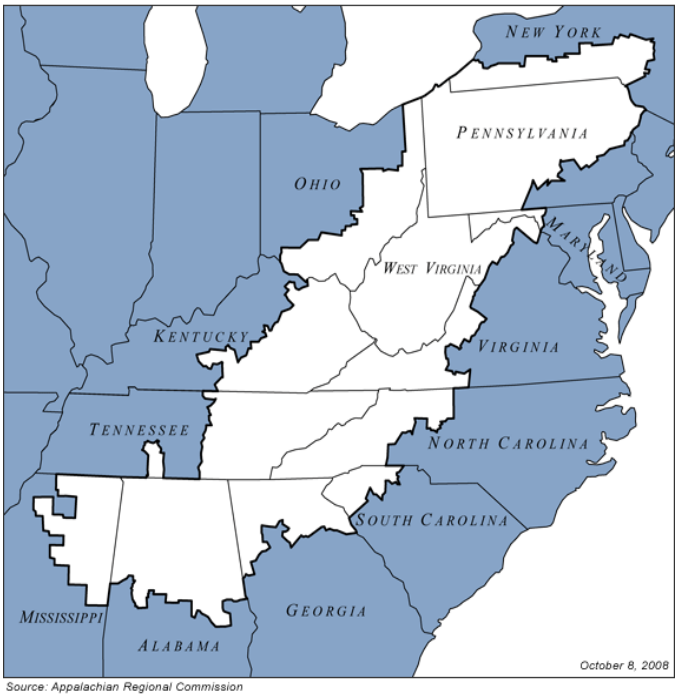
ABOUT THE APPALACHIAN REGION

The current boundary of the Appalachian Region includes all of West Virginia and parts of 12 other states: Alabama, Georgia, Kentucky, Maryland, Mississippi, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, and Virginia (see Figure 1). The Region covers 205,000 square miles and 420 counties, and is home to more than 25 million people. Forty-two percent of the Region's population is rural, compared with 20 percent of the nation's.

The Appalachian Region's economy, which was once highly dependent on extractive industries, has become more diversified in recent times and now includes larger shares of manufacturing and professional services, among other industries. Appalachia has made significant progress over the past five decades: its poverty rate, which was 31 percent in 1960, had fallen to 17.2 percent over the 2010–2014 period. The number of high-poverty counties in the Region (those with poverty rates more than 1.5 times the U.S. average) declined from 295 in 1960 to 91 over the 2010–2014 period.

Despite the progress made in the Region, many challenges remain, with Appalachian incomes, poverty rates, unemployment rates, and postsecondary education levels still lagging behind performance at the national level. In addition to these socioeconomic deficits, for many of the health drivers and outcomes discussed in this report, the Region performs poorly when compared to the nation as a whole. Progress in the socioeconomic and health spheres are often interrelated, if not interdependent, and much work remains.

Figure 1: Map of the Appalachian Region



Source: Appalachian Regional Commission

MEASURING HEALTH DISPARITIES IN THE APPALACHIAN REGION

A range of indicators are used in this report to measure population health in Appalachia and document health disparities between the Region and the nation as a whole. This report includes 41 measures of population health, organized into 9 domains: Mortality, Morbidity, Behavioral Health, Child Health, Community Characteristics, Lifestyle, Health Care Systems, Quality of Care, and Social Determinants. The domains reflect:

- Current health status: Mortality, Morbidity, and Behavioral Health;
- Generational health and health care: Child Health, Health Care Systems, and Quality of Care; and
- Risk factors and determinants of health: Lifestyle, Community Characteristics, and Social Determinants.

The indicators provide an overview of population health and include both health outcomes—such as specific measures of mortality and morbidity—and factors that drive or influence health outcomes—such as smoking prevalence, physical inactivity, and the supply of healthcare providers.

The data in this report are broken down by national quintiles, which are groups of data points that have been divided into five equal parts consisting of approximately the same number of counties in each. The quintiles are calculated from national datasets and are thus based on the national distributions for each measure. The first quintile represents data points in the 20th percentile and below, the second quintile represents data points between the 20th and 40th percentiles, and so on. If the Appalachian Region's distribution matched the national distribution, each quintile would contain 84 counties (20 percent of the

total counties in Appalachia). Organizing the data into quintiles provides insight into how county-level outcomes are distributed throughout the Region, and can also help answer the question as to whether outcomes in the Appalachian Region are proportional to the outcomes in the nation as a whole.

KEY FINDINGS

Of the 41 indicators examined in this report, the Region performs better than the nation overall on 8: HIV prevalence, travel time to work, excessive drinking, student-teacher ratio, chlamydia prevalence, percentage of the population under age 65 that is uninsured, diabetes monitoring among Medicare patients, and the social association rate.

For the remaining 33 indicators in this report, the performance in the Appalachian Region is worse than the performance in the United States as a whole. This report includes 7 of the 10 leading causes of death in the United States: heart disease, cancer, chronic obstructive pulmonary disease (COPD), injury, stroke, diabetes, and suicide—and the Appalachian Region has higher mortality rates than the nation for each. Mortality due to poisoning—which includes drug overdoses—is markedly higher in the Region than the nation as a whole.

The Appalachian Region's number of physically unhealthy days, mentally unhealthy days, and prevalence of depression are all higher than the national averages for these measures. Obesity, smoking, and physical inactivity—risk factors for a number of health outcomes—are all higher in Appalachia than in the nation overall. The Region also has lower supplies of healthcare professionals when compared to the United States as a whole, including primary care physicians, mental health providers, specialty physicians, and dentists. Lower household incomes and higher poverty rates—both social determinants of health—reflect worse living conditions in the Region than in the nation as a whole.

This report also examines the *changes* over the last 20 years in eight measures: heart disease mortality, cancer mortality, stroke mortality, infant mortality, the supply of primary care physicians, poverty rates, education levels, and years of potential life lost. Over the past two decades, the Appalachian Region has experienced improvements in seven of the eight measures. However, the progress made by the Region often comes up short when compared to the progress made by the United States overall, and indicates a widening gap in overall health between Appalachia and the nation as a whole.

Mortality

The measures in the Mortality domain examine cause-specific deaths within a population and also include a broad measure of premature mortality. There are seven measures of mortality included in this domain:

- Heart disease
- Cancer
- COPD
- Injury
- Stroke
- Diabetes
- Years of Potential Life Lost (YPLL)

Each measure of mortality in this domain is higher (worse) in the Appalachian Region than in the nation as a whole.

Every mortality indicator is higher in the Region than in the nation overall: heart disease is 17 percent higher; cancer is 10 percent higher; COPD is 27 percent higher; injury is 33 percent higher; stroke is 14 percent higher; and diabetes is 11 percent higher.

Considering death broadly, YPLL, a measure of premature mortality, is 25 percent higher in the Region than in the nation as a whole.

The Appalachian Region's rural counties have higher mortality rates than the Region's large metro counties for each of the indicators, signifying a stark rural-urban divide in the Region: heart disease is 27 percent higher; cancer is 15 percent higher; COPD is 55 percent higher; injury is 47 percent higher; stroke is 8 percent higher; and diabetes is 36 percent higher.

YPLL is 40 percent higher in rural Appalachian counties than in the Region's large metro counties.

The distributions of the Mortality indicators among national quintiles for Appalachian counties are shown in Table 1. Of the 420 counties in the Appalachian Region, 163 counties (39 percent) have COPD mortality rates in the worst-performing national quintile, while only 27 counties in the Region (6 percent) are in the best-performing national quintile. There are 158 counties (38 percent) in the worst-performing national quintiles for both heart disease and cancer mortality. Only 13 counties (3 percent) are in the best-performing quintile for YPLL. These distributions show that mortality rates are disproportionately higher throughout the Appalachian Region when compared to the nation as a whole.

Table 1: Distributions of Mortality Rates among National Quintiles for Appalachian Counties

Indicator	Best Quintile		2nd Best Quintile		Middle Quintile		2nd Worst Quintile		Worst Quintile	
	#	*Pct.*	#	*Pct.*	#	*Pct.*	#	*Pct.*	#	*Pct.*
Heart disease deaths	15	*4%*	56	*13%*	76	*18%*	115	*27%*	158	*38%*
Cancer deaths	29	*7%*	49	*12%*	83	*20%*	101	*24%*	158	*38%*
COPD deaths	27	*6%*	54	*13%*	83	*20%*	93	*22%*	163	*39%*
Injury deaths	28	*7%*	59	*14%*	80	*19%*	106	*25%*	147	*35%*
Stroke deaths	40	*10%*	69	*16%*	90	*21%*	111	*26%*	110	*26%*
Diabetes deaths	60	*14%*	70	*17%*	91	*22%*	100	*24%*	99	*24%*
YPLL	13	*3%*	63	*15%*	81	*19%*	105	*25%*	156	*37%*

Data source for authors' calculations shown above: Appalachian_Health_Disparities_Data.xlsx. The number of counties across all five quintiles for each indicator may not sum to 420 due to missing or suppressed values.

Morbidity

The indicators in the Morbidity domain explore the prevalence of disease and other health conditions. There are five indicators of morbidity in this report:

- Physically unhealthy days
- Mentally unhealthy days
- HIV prevalence
- Diabetes prevalence
- Obesity prevalence

With the exception of HIV rates, the outcomes in Appalachia for each of these measures is higher (worse) than in the nation as a whole.

Appalachian residents report 14 percent more physically unhealthy days and mentally unhealthy days than the nation as a whole. The diabetes prevalence rate in the Region (11.9 percent) is slightly higher than the nation overall (9.8 percent). Likewise, the prevalence of adult obesity is higher in Appalachia (31.0 percent) than in the United States as a whole (27.4 percent).

Residents of rural Appalachian counties have higher numbers of physically unhealthy days, higher numbers of mentally unhealthy days, higher diabetes prevalence, and a higher prevalence of obesity than residents of the Region's large metro counties. Residents living in rural counties in the Region report 24 percent more physically unhealthy days than those living in large metro counties and 10 percent more mentally unhealthy days. Residents of rural Appalachian counties are also more likely to be obese than those living in large metro counties (33.1 percent compared to 29.5 percent).

The distributions of the Morbidity indicators among national quintiles for Appalachian counties are shown in Table 2. Considering mentally unhealthy days, 210 counties (50 percent) are in the worst-performing national quintile for this measure, while only 2 counties in the Region (less than 1 percent) are in the best-performing national quintile. Of the 420 counties in the Region, 180 are in the worst-performing national quintile for diabetes prevalence (43 percent), while only 12 counties (3 percent) are in the top-performing quintile. These results show that many health conditions are disproportionately worse throughout much of Appalachia when compared to the nation as a whole.

Table 2: Distributions of Morbidity Indicators among National Quintiles for Appalachian Counties

Indicator	Best Quintile		2nd Best Quintile		Middle Quintile		2nd Worst Quintile		Worst Quintile	
	#	*Pct.*	#	*Pct.*	#	*Pct.*	#	*Pct.*	#	*Pct.*
Physically unhealthy days	5	*1%*	39	*9%*	93	*22%*	106	*25%*	177	*42%*
Mentally unhealthy days	2	*0%*	19	*5%*	96	*23%*	93	*22%*	210	*50%*
HIV prevalence	89	*21%*	109	*26%*	104	*25%*	61	*15%*	20	*5%*
Diabetes prevalence	12	*3%*	32	*8%*	68	*16%*	128	*30%*	180	*43%*
Obesity prevalence	45	*11%*	69	*16%*	74	*18%*	106	*25%*	126	*30%*

Data source for authors' calculations shown above: Appalachian_Health_Disparities_Data.xlsx. The number of counties across all five quintiles for each indicator may not sum to 420 due to missing or suppressed values.

Behavioral Health

The measures in the Behavioral Health domain examine issues related to both mental health and substance abuse. There are five measures in this domain:

- Depression prevalence among Medicare beneficiaries
- Suicide
- Excessive drinking
- Poisoning mortality
- Opioid prescriptions among Medicare beneficiaries

While excessive drinking in the Appalachian Region is lower (better) than in the nation as a whole, the Region performs worse than the nation on each of the other measures in this domain.

The poisoning mortality rate in Appalachia—which includes drug overdoses—is 37 percent higher than the national rate, and the suicide rate in the Region is 17 percent higher than the national rate. The prevalence of depression among Medicare beneficiaries is higher in the Region (16.7 percent) than in the nation as a whole (15.4 percent).

Residents of the Appalachian Region's rural counties are 21 percent more likely to commit suicide than those living in the Region's large metro counties, and the poisoning mortality rate is 40 percent higher in the Region's rural counties than in its large metro counties. Depression prevalence among Medicare beneficiaries is also slightly higher in the Region's rural counties (16.9 percent) than in its large metro counties (15.6 percent).

The distributions of the Behavioral Health indicators among national quintiles for Appalachian counties are shown in Table 3. For poisoning mortality, 195 of the 420 counties in the Appalachian Region (46 percent) are in the worst-performing national quintile, while only 24 counties (6 percent) are in the best-performing national quintile. For depression prevalence among Medicare beneficiaries, 161 counties (38 percent) are in the worst-performing national quintile, and only 22 counties (5 percent) are in the best-performing national quintile.

Table 3: Distributions of Behavioral Health Indicators among National Quintiles for Appalachian Counties

Indicator	Best Quintile		2nd Best Quintile		Middle Quintile		2nd Worst Quintile		Worst Quintile	
	#	*Pct.*	#	*Pct.*	#	*Pct.*	#	*Pct.*	#	*Pct.*
Depression prevalence	22	*5%*	54	*13%*	69	*16%*	114	*27%*	161	*38%*
Suicide incidence	46	*11%*	69	*16%*	108	*26%*	127	*30%*	70	*17%*
Excessive drinking	202	*48%*	92	*22%*	82	*20%*	41	*10%*	3	*1%*
Poisoning mortality	24	*6%*	31	*7%*	56	*13%*	114	*27%*	195	*46%*
Opioid prescriptions	51	*12%*	77	*18%*	91	*22%*	100	*24%*	101	*24%*

Data source for authors' calculations shown above: Appalachian_Health_Disparities_Data.xlsx. The number of counties across all five quintiles for each indicator may not sum to 420 due to missing or suppressed values.

Child Health

Circumstances surrounding birth are explored in the Child Health domain. There are three measures in this domain:

- Infant mortality
- Low birth weight
- Teen births

The Region performs worse than the nation on each of these measures.

The infant mortality rate is 16 percent higher in the Appalachian Region than in the nation as a whole, and the percentage of low birth weight babies is higher in the Region (8.7 percent) than in the nation (8.1 percent).

The infant mortality rate in the Appalachian Region's rural counties is 19 percent higher than the rate in the Region's large metro counties and the teen birth rate in the Region's rural counties is 72 percent higher than the rate in Appalachia's large metro counties.
The distributions of the Child Health indicators among national quintiles for Appalachian counties are shown in Table 4. Of the 420 counties in the Appalachian Region, 127 (30 percent) are in the worst-performing national quintile for the incidence of low birth weight babies, while only 12 counties (3 percent) are in the best-performing quintile. The distribution of the infant mortality rate shows that only 24 Appalachian counties (6 percent) rank in the top-performing national quintile.

Table 4: Distributions of Child Health Indicators among National Quintiles for Appalachian Counties

Indicator	Best Quintile		2nd Best Quintile		Middle Quintile		2nd Worst Quintile		Worst Quintile	
	#	*Pct.*	#	*Pct.*	#	*Pct.*	#	*Pct.*	#	*Pct.*
Infant mortality	24	*6%*	73	*17%*	112	*27%*	124	*30%*	87	*21%*
Low birth weight	12	*3%*	58	*14%*	90	*21%*	132	*31%*	127	*30%*
Teen births	44	*10%*	66	*16%*	95	*23%*	131	*31%*	83	*20%*

Data source for authors' calculations shown above: Appalachian_Health_Disparities_Data.xlsx. The number of counties across all five quintiles for each indicator may not sum to 420 due to missing or suppressed values.

Community Characteristics

The measures included in the Community Characteristics domain examine aspects of the external environment largely outside of residents' control. Three measures are included in this domain:

- Travel time to work
- Grocery store availability
- Student-teacher ratio

Appalachia performs better than the nation as a whole on two of these measures: travel time to work and the student-teacher ratio.

The average travel time to work in the Region is 25 minutes, which is just slightly lower than the national average of 26 minutes. The student-teacher ratio in Appalachia is 14.3, which is a lower (better) ratio than the national average of 16.5. With grocery store availability, however, the Region performs worse than the United States as a whole, with 14 percent fewer grocery stores per 1,000 population.

Unlike many other indicators in this report, rural areas throughout Appalachia perform better than large metro areas in the Region for each of the three variables in this domain.

The distributions of the Community Characteristics indicators among national quintiles for Appalachian counties are shown in Table 5. Despite the Region's slightly lower average travel time to work, 142 counties (34 percent) still rank in the worst-performing national quintile, and only 5 counties (1 percent) rank in the best-performing quintile.

Table 5: Distributions of Community Characteristics Indicators among National Quintiles for Appalachian Counties

Indicator	Best Quintile		2nd Best Quintile		Middle Quintile		2nd Worst Quintile		Worst Quintile	
	#	*Pct.*	#	*Pct.*	#	*Pct.*	#	*Pct.*	#	*Pct.*
Travel time to work	5	*1%*	62	*15%*	101	*24%*	110	*26%*	142	*34%*
Grocery store availability	39	*9%*	99	*24%*	116	*28%*	96	*23%*	70	*17%*
Student-teacher ratio	37	*9%*	85	*20%*	116	*28%*	115	*27%*	52	*12%*

Data source for authors' calculations shown above: Appalachian_Health_Disparities_Data.xlsx. The number of counties across all five quintiles for each indicator may not sum to 420 due to missing or suppressed values.

Lifestyle

Individual choices and habits that play an important role in the health of a population are explored in the Lifestyle domain. There are three measures in this domain:

- Physical inactivity
- Smoking prevalence
- Chlamydia prevalence

Appalachia performs worse than the nation as a whole on two of these indicators: physical inactivity and smoking.

In the Appalachian Region, 28.4 percent of people report being physically inactive, a figure higher than the 23.1 percent reported for the United States as a whole. Nearly 20 percent of all adults in the Appalachian Region report being cigarette smokers, a figure higher than the 16.3 percent found at the national level.

In the Appalachian Region's rural counties, 31.8 percent of residents report being physically inactive, a figure much higher than the 25.2 percent in the Region's large metro areas. Residents in the Region's rural counties also report a higher smoking prevalence, with 22.5 percent of adults being cigarette smokers, compared to just 17.3 percent of those living in the Region's large metro areas.

The distributions of the Lifestyle indicators among national quintiles for Appalachian counties are shown in Table 6. Of the 420 counties in the Region, 179 (43 percent) rank in the worst-performing national quintile for physical inactivity. There are 189 counties in the Region (45 percent) that rank in the worst-performing national quintile for cigarette smoking, while only 17 counties (4 percent) rank in the best-performing national quintile.

Table 6: Distributions of Lifestyle Indicators among National Quintiles for Appalachian Counties

Indicator	Best Quintile		2nd Best Quintile		Middle Quintile		2nd Worst Quintile		Worst Quintile	
	#	*Pct.*	#	*Pct.*	#	*Pct.*	#	*Pct.*	#	*Pct.*
Physical inactivity	18	*4%*	60	*14%*	79	*19%*	84	*20%*	179	*43%*
Smoking prevalence	17	*4%*	27	*6%*	67	*16%*	120	*29%*	189	*45%*
Chlamydia incidence	132	*31%*	111	*26%*	84	*20%*	50	*12%*	36	*9%*

Data source for authors' calculations shown above: Appalachian_Health_Disparities_Data.xlsx. The number of counties across all five quintiles for each indicator may not sum to 420 due to missing or suppressed values.

Health Care Systems

The Health Care Systems domain includes measures related to the availability of, and access to, healthcare. There are seven measures in this domain:

- Primary care physicians
- Mental health professionals
- Specialty physicians
- Dentists
- Percentage of the population under age 65 that is uninsured
- Heart disease hospitalizations among Medicare beneficiaries
- COPD hospitalizations among Medicare beneficiaries

The Appalachian Region performs worse than the United States as a whole on six of the seven measures. Only the percentage of the population under age 65 that is uninsured is slightly lower (better) in the Region than in the nation as a whole, although the data here largely predate the implementation of the Affordable Care Act.

The supply of primary care physicians is 12 percent lower in the Appalachian Region than in the nation as a whole. The deficit between Appalachia and the United States overall is even larger for the supply of mental health providers (35 percent lower), specialty physicians (28 percent lower), and dentists (26 percent lower). Hospitalization rates among Medicare beneficiaries are much higher in the Region for both COPD (23 percent higher in the Appalachia than in the United States) and heart disease (17 percent higher).

The supply of primary care physicians in rural counties in Appalachia is 20 percent lower than the supply in the Region's large metro counties. The supply of both specialists (57 percent lower) and dentists (36 percent lower) are also lower in the Region's rural counties when compared to large metro counties. COPD hospitalization rates (39 percent higher) and heart disease hospitalization rates (13 percent) are also higher in Appalachia's rural counties. The uninsured rate for the population under age 65 is 18.2 percent in rural Appalachian counties compared to 14.7 percent in the Region's large metro counties.

The distributions of the Health Care Systems indicators among national quintiles for Appalachian counties are shown in Table 7. Of the 420 counties in the Region, 203 counties (48 percent) rank in the worst national quintile for COPD hospitalizations, while only 12 counties (3 percent) are in the best-performing national quintile. Likewise, 179 counties (43 percent) rank in the worst national quintile for heart disease hospitalizations while only 7 counties (2 percent) rank in the best-performing national quintile.

Table 7: Distributions of Health Care Systems Indicators among National Quintiles for Appalachian Counties

Indicator	Best Quintile		2nd Best Quintile		Middle Quintile		2nd Worst Quintile		Worst Quintile	
	#	*Pct.*	#	*Pct.*	#	*Pct.*	#	*Pct.*	#	*Pct.*
Primary care physicians	56	*13%*	84	*20%*	106	*25%*	95	*23%*	79	*19%*
Mental health providers	42	*10%*	81	*19%*	105	*25%*	116	*28%*	76	*18%*
Specialist physicians	67	*16%*	103	*25%*	94	*22%*	100	*24%*	56	*13%*
Dentists	35	*8%*	80	*19%*	99	*24%*	115	*27%*	91	*22%*
Uninsured population	53	*13%*	91	*22%*	117	*28%*	111	*26%*	48	*11%*
Heart disease hospitalizations	7	*2%*	43	*10%*	74	*18%*	117	*28%*	179	*43%*
COPD hospitalizations	12	*3%*	29	*7%*	75	*18%*	101	*24%*	203	*48%*

Data source for authors' calculations shown above: Appalachian_Health_Disparities_Data.xlsx. The number of counties across all five quintiles for each indicator may not sum to 420 due to missing or suppressed values.

Quality of Care

The types of care that are available to residents in a community are examined in the Quality of Care domain. There are three measures in this domain:

- Percentage of medical doctors that use electronic prescribing technology
- Percentage of Medicare beneficiaries ages 67 to 69 who have recently received a mammogram
- Diabetes monitoring among Medicare beneficiaries

For each of these three measures, the values reported in Appalachia are similar to those reported in the United States as a whole.

Medical doctors are somewhat less likely to use electronic prescribing in the Appalachian Region (63.8 percent of doctors) compared to the nation overall (65.8 percent). Mammogram screening percentages are comparable for the Region (61.4 percent) and the United States as a whole (62.1 percent), as are diabetes monitoring percentages, with Appalachia (85.9 percent) and the nation overall (84.7 percent) reporting similar figures.

Medical doctors in rural areas throughout the Region are less likely to use electronic prescribing (60.6 percent of doctors) than those in large metro areas (64.7 percent). Medicare-covered women ages 67 to 69 are less likely to have had a recent mammogram in rural areas (57.3 percent) than those in large metro areas (58.9 percent).

The distributions of the Quality of Care indicators among national quintiles for Appalachian counties are shown in Table 8. The indicators in this domain are relatively evenly distributed compared to many other indicators in this report.

Table 8: Distributions of Quality of Care Indicators among National Quintiles for Appalachian Counties

Indicator	Best Quintile		2nd Best Quintile		Middle Quintile		2nd Worst Quintile		Worst Quintile	
	#	*Pct.*	#	*Pct.*	#	*Pct.*	#	*Pct.*	#	*Pct.*
Electronic prescriptions	58	*14%*	74	*18%*	94	*22%*	107	*25%*	82	*20%*
Mammogram screenings	56	*13%*	69	*16%*	91	*22%*	99	*24%*	104	*25%*
Diabetes monitoring	74	*18%*	103	*25%*	120	*29%*	85	*20%*	38	*9%*

Data source for authors' calculations shown above: Appalachian_Health_Disparities_Data.xlsx. The number of counties across all five quintiles for each indicator may not sum to 420 due to missing or suppressed values.

Social Determinants

The measures in the Social Determinants domain examine the conditions in which people live and work. There are five measures in this domain:

- Median household income
- Household poverty rate
- Percentage of the population receiving disability benefits
- Percentage of the population with some level of college education
- Social association rate

The Appalachian Region performs worse than the United States as a whole on four of the five measures—the social association rate is the only indicator with better performance in the Region.

Median household income in the Appalachian Region is 19 percent lower than the national median, and adults ages 25 to 44 are less likely to have some type of post-secondary education in the Region (57.1 percent) than in the United States overall (63.3 percent). The household poverty rate in Appalachia is higher than the national rate (17.2 percent compared to 15.6 percent), and more people receive disability benefits in the Region (7.3 percent) than in the nation as a whole (5.1 percent).

Rural counties throughout Appalachia perform markedly worse on the four measures in which the Region as a whole already lags behind national performance. Median household income in rural Appalachia is 34 percent lower than the median income in large metro counties throughout the Region. Education levels (49.0 percent in rural Appalachian counties; 65.1 percent in large metro counties), household poverty rates (23.0 percent in Appalachia's rural counties; 13.6 percent in the Region's large metro counties), and the receipt of disability benefits (11.2 percent in rural Appalachian counties; 5.5 percent in Appalachia's large metro counties) all show a stark rural-urban divide.

The distributions of the Social Determinants indicators among national quintiles for Appalachian counties are shown in Table 9. There are 203 Appalachian counties (48 percent) that rank in the worst-performing national quintile on receipt of disability benefits, while only 9 counties (2 percent) rank in the best-performing quintile. For median household income, 159 counties (38 percent) rank in the worst-performing national quintile, while only 19 counties (5 percent) rank in the best-performing quintile. These results show that outcomes for many social determinants are disproportionately worse throughout much of the Appalachian Region when compared to the nation as a whole.

Table 9: Distributions of Social Determinants Indicators among National Quintiles for Appalachian Counties

Indicator	Best Quintile		2nd Best Quintile		Middle Quintile		2nd Worst Quintile		Worst Quintile	
	#	*Pct.*	#	*Pct.*	#	*Pct.*	#	*Pct.*	#	*Pct.*
Median household income	19	*5%*	33	*8%*	91	*22%*	118	*28%*	159	*38%*
Household poverty	17	*4%*	52	*12%*	95	*23%*	134	*32%*	122	*29%*
Disability	9	*2%*	19	*5%*	59	*14%*	130	*31%*	203	*48%*
Education: some college	20	*5%*	39	*9%*	83	*20%*	128	*30%*	150	*36%*
Social associations	45	*11%*	89	*21%*	102	*24%*	98	*23%*	86	*20%*

Data source for authors' calculations shown above: Appalachian_Health_Disparities_Data.xlsx. The number of counties across all five quintiles for each indicator may not sum to 420 due to missing or suppressed values.

TRENDS

The trends section examines the changes in eight indicators over a period of approximately two decades. The changes in the Appalachian Region are compared to the United States as a whole for these measures examining premature death, causes of death, child and maternal health, healthcare access, and socioeconomic status.

For seven of the eight indicators considered in this section, the Appalachian Region—along with the nation as a whole—experienced improvements over the past two decades. However, the improvements made by the nation overall generally outpaced those made by the Region, indicating increasing disparities between Appalachia and the United States as a whole.

Table 10 shows the percentage changes over the past two decades in Appalachia and the United States for six of the eight variables included in this section. The Appalachian Region experienced a decrease (improvement) in all measures of mortality, but lagged the improvement experienced by the nation as a whole. Appalachia outperformed the rate of change for the nation overall in just one measure: the supply of primary care physicians.

Table 10: Percentage change in selected measures, the United States and Appalachia

Indicator	United States	Appalachia
Change between 1989–1995 and 2008–2014:		
YPLL	-24%	-8%
Stroke mortality	-40%	-35%
Cancer mortality	-21%	-14%
Heart disease mortality	-43%	-39%
Infant mortality	-28%	-19%
Change between 1990 and 2013:		
Primary care physicians	27%	31%

Data source for authors' calculations shown above: Appalachian_Health_Disparities_Data.xlsx. The number of counties across all five quintiles for each indicator may not sum to 420 due to missing or suppressed values.

Two indicators are not included in the table above: household poverty rates and the percentage of the population with a high school degree. Both Appalachia and the nation as a whole experienced an increase (worsening) in the household poverty rate between 1995 and 2014, with the Region's rate increasing from 14.2 percent to 17.2 percent, while the national rate increased at a slightly slower pace, going from 13.6 percent to 15.6 percent. Between 1990 and 2009–2013, Appalachia made great strides in the percentage of its population with a high school degree, improving from 68.4 percent to 84.6 percent. The nation as a whole also saw an increase in this measure, going from 75.7 percent in 1990 to 85.9 percent in 2009–2013.

NEXT STEPS

This report—measuring population health and documenting health disparities in the Appalachian Region—is the first in a series exploring health issues in Appalachia.

The information documented in this report provides context for the subsequent reports in this series that will explore Bright Spots, or Appalachian communities with better-than-expected health outcomes given their resources. Resources here are interpreted broadly, and include the health system, the environment, and socioeconomic factors, among others. Much of the data presented in this report will be used to establish a statistical framework for identifying Bright Spots, including factors that reflect a Culture of Health. Once Appalachian counties performing better than expected have been statistically identified, a sample of these communities will be explored through in-depth, field-based case studies. Working with these communities, the case studies will identify replicable activities, programs, or policies that encourage better-than-expected health outcomes that could translate into actions that other communities can replicate.

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EDITORIAL

Appalachia: Where Place Matters in Health

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Health Disparities in Appalachia

Facts about health in the mountains of Appalachia have been slow to emerge. The formation of the Appalachian Regional Commission in the 1960s led to increased efforts to combat known precursors to poor health (e.g., low income, limited education, geographic isolation) (1). From New York's southern counties to the foothills of Mississippi, mountain counties were eligible to participate in various federal health programs because of their poor economic status. Critical private investments in health care occurred infrequently during the 1960s and still lag because of Appalachia's low population density and high percentage of residents without health insurance or with high-deductible plans.

Health care is largely organized, funded, and monitored through political channels. Public health programs, Medicaid funding, and vital statistics reports are organized by state. Health care service boundaries and health outcome patterns are not as clearly defined. Attempts to organize health status data across state lines within the formal boundaries of Appalachia proved to be a logistical and statistical nightmare (2). It was not until the National Center for Health Statistics (NCHS) produced national maps to display mortality rates that the truth about Appalachia's health status emerged (3). The maps proved statistically what residents knew intuitively: Appalachia, the place they called home, suffered disparately poor health compared with the rest of the nation.

The national computerization of health statistics and free Internet access to national and multistate databases have spurred additional exploration of health disparities in Appalachia. Recent studies have identified higher rates of cancer (4) and, in particular, cervical cancer (5); heart disease (6); and premature mortality (7) in the Appalachian regional population that spans state boundaries.

The articles in this issue of *Preventing Chronic Disease* (*PCD*) represent a new wave of studies that explore community-based explanations for Appalachian cancer issues by gathering and considering community perspectives on health and illness. The authors of these articles also share an implicit understanding of the relationship among people's health, their behavior, and their environment. This collection of research provides a view of some dilemmas faced by Appalachian health practitioners and advocates.

Appalachian Dilemmas and Challenges

Why is addressing health improvement in Appalachia more difficult and different than it is with other populations and in other regions? The articles in this issue of *PCD* explain some of the dilemmas and challenges related to cancer prevention and treatment in this unique region.

What people don't know about cancer

Several articles document that people lack facts about different types of cancer, are confused about differences among cancer screening procedures, and are not aware of publicly supported breast and cervical cancer screening programs. The data from the qualitative studies described in these articles provide depth and greater generalizability because they were collected in different communities and states. Focus group and survey participants reported

that they gain most of their information about cancer from family, neighbors, and friends rather than from health professionals. Unfortunately, the information they receive often includes misperceptions of and dated knowledge about cancer treatments. The goal in Appalachia is to improve public cancer education while acknowledging and effectively using prevailing patterns of communication. The challenge is to tap local communication channels to disseminate accurate cancer information for communities while reinforcing that health professionals and health systems are important information sources.

Tobacco as a leading risk factor for cancer and other chronic diseases

Wewers et al (8) document greater use of tobacco in Appalachian Ohio than in the rest of the United States, a finding that is unfortunately replicated across Appalachia. Community attitudes in the region are attributable in part to a deep-seated and historical economic dependence on tobacco growing and trading. The top five states in which tobacco represents more than 10% of total crops are located in the Appalachian region (9). Historically, families in the mountains remember tobacco as the "Christmas crop" because of the timing of payments received for their product from the tobacco auction. Local studies have found that even in more urban areas of Appalachia, 50% of primary care patients have some personal relationship with tobacco production, sales, or use (J Woodside, oral communication, June 2006). Cancer control strategies that address tobacco use in the region tread on difficult cultural and economic ground.

The role of religion: fatalism or comforting factor?

The importance of religion in Appalachian culture is well documented in these articles. Typically, authors have interpreted individuals' belief in "God's will" as evidence of a sense of fatalism toward health. However, an alternative interpretation is posed by this research. These studies find that Appalachians consider both their faith and the potential benefits of medical care when seeking solutions to health problems. Faith was not found to be a barrier to obtaining health care and is described as a comforting factor for people diagnosed with cancer. Behavioral theorists identify religion as an element of a person's "external locus of control" – an external circumstance that guides fate, luck, or behavior – in decision making about health (10). The authors of the studies in this issue of *PCD* point out that reliance on directions from health professionals is also present in Appalachia. To be effective in cancer control, health professionals must understand the balance of these influences and integrate this understanding in their goal to address cancer issues for individuals and the community.

Low population density and service availability

Most of Appalachia is rural. Of the 13 states with counties located in the Appalachian region, 10 states have Appalachian counties with lower population density than their respective state averages (11). Appalachia is also characterized by many geographically isolated counties. Access to cancer care (12) is limited because of the region's history of a shortage of health care professionals and distance to referral centers from rural areas. However, small-town values of "pulling together" are exemplified in the cancer coalition article by Kluhsman et al (13) and described in the article by Coyne et al, which discusses sociocultural factors (14). The challenge in Appalachia is to build a set of cancer care services realistic for rural settings while ensuring access to highly specialized services at regional centers. Cancer control experts need to promote the value of cancer prevention, risk reduction, and screening services as important parts of cancer care that can be delivered by local providers in rural communities (15). Packaging these needed services may help rural residents see community cancer control as feasible and important, not as something available only through very expensive and distant cancer centers. Moreover, links between such centers and rural communities would clearly be mutually advantageous.

Concerns about health and the environment

The influence of mountain culture on people's lives cannot be understated. Future qualitative studies will describe community members' concerns that traditional means of earning a living potentially have harmful effects on their lives. Of particular concern to rural communities are environmentally related causes of cancer. Concerns include toxic waste; unclean air; occupational exposures; and effluent from farms, mines, and factories that impact water quality. Environmental epidemiologists are constantly responding to community claims that cancer clusters have been identified. Appalachian residents are faced with an unenviable dilemma: they fear that environmental causes of cancer may be directly or indirectly related to the industries and jobs that allow them to remain in the moun-

tains, which often prevents them from pursuing environmental action.

Communication as the pivotal factor

Appalachians are characterized as proud, private, wanting to "take care of their own," and not accepting of charity. Our ongoing studies through the Rural Appalachian Cancer Demonstration Program, sponsored by the Centers for Disease Control and Prevention, have validated many of the points made in the articles in this issue. We have identified communication between patients and health professionals as instrumental in creating either trust or distrust between individuals and families and health care professionals and the health care system. Trust is the critical factor in individuals' acceptance of information and use of health care services, including screening and treatment for cancer. Personal trust is hard to gain but, once gained, hard to lose in Appalachia. Health professionals face the challenge of acknowledging these personal characteristics of Appalachians and using them to develop two-way communication about cancer. An additional challenge is to communicate public cancer messages outside of traditional health visits as well as find ways to effectively integrate messages about screening and prevention into traditionally busy practices and brief health care encounters.

Conclusion

The mountains shape people's lives, both literally and figuratively. There is clearly a distinguishable Appalachian culture, and "place" is a prominent feature in that culture. Our cancer control studies have identified numerous cultural issues that influence cancer incidence, mortality, and cancer care in the region. Actions and beliefs in Appalachia are largely based upon discussion among community members about their experiences with disease and health care. Communication and use of care is influenced by skepticism, some distrust of health professionals, and fear of being taken advantage of by "the system." Residents report that poor communication between health professionals and patients further creates complications in health care delivery and represents a barrier to pursuing cancer screening, diagnosis, and treatment.

Those cultural issues undergird one final dilemma not addressed in the articles: the Appalachian regional population has lower income and poorer educational achievement and is older than the general U.S. population. These characteristics are generally seen as precursors to poorer health status. Yet location as a precursor of poor health has been reserved to states, generally southern, that frequently appear on "the worst" lists. Little attention has been paid to culturally defined geographic areas. Seven of eight Appalachians are white, and most nonwhite Appalachians live in southern Appalachian states. Comparisons between mortality rates among whites in Appalachia and whites in the United States as a whole had not previously been analyzed but became visually apparent on the NCHS maps. So, too, was the long-overdue comparison of Appalachia's black population mortality rates with national black mortality rates. Both sets of Appalachian mortality rates exceed national rates (7). The Appalachian disparities dilemma is that although poorer health outcomes in the mountains conform to popular regional beliefs, the disparities have not been recognized regionally or nationally.

Appalachians traditionally do not seek attention, and they try to manage their own problems. However, the geographic, health systems, and cultural issues that affect cancer in this region may be too large and complicated to address without significant external attention and assistance. The articles in this issue of *PCD* help shed light on, and give depth to, the dilemmas we face as public health practitioners in Appalachia.

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