



BIPARTISAN POLICY CENTER

## **The Appalachia Initiative:**

A Bipartisan Approach for the 21st Century

*September 2017*



# *The Appalachia Initiative*

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### **ABOUT THE PROJECT**

This report is a product of the Appalachia Initiative at the Bipartisan Policy Center co-chaired by Senators Mark Warner (D-VA), David Perdue (R-GA), Joe Manchin (D-WV), and Thom Tillis (R-NC). The initiative was supported by a bipartisan task force of regionally and nationally recognized educators, business leaders, and advocates who examined legislative and regulatory avenues to increase jobs and prosperity for the Appalachia region.

### **ACKNOWLEDGEMENTS**

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### **DISCLAIMER**

The findings and recommendations expressed herein do not necessarily represent the views or opinions of the Bipartisan Policy Center's founders, its board of directors, or task force members.

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# Letter from the Co-Chairs

We have immense pride in the Appalachian region. For years, it has been a key pillar of American industry, driven by the strength of the work ethic and culture of Appalachian communities.

This vast region that spans 13 states and comprises more than 25 million people has been disproportionately hurt by the waves of economic shifts that have swept the country in recent decades. Declines in industries such as coal and traditional manufacturing—once the backbone of the region—have caused millions of jobs to disappear and affected the broader health of many communities. Despite decades of effort, many communities in the Appalachian region are still being left behind.

Determined to improve conditions, many individuals and organizations across the region have successfully directed resources, talents, and ingenuity to respond to these challenges. Progress has been gradual, and more can be done to generate lasting change.

As United States senators representing states from the region, we aim to amplify these local efforts by working together to boost Appalachia's prosperity and economic growth.

We partnered with the Bipartisan Policy Center to convene regional and national stakeholders to capture innovative ideas for the region. We worked collectively to develop pragmatic policy solutions focused on improving job training, economic development, healthcare, and strengthening the infrastructure and energy sectors in the region.

Each senator led one of the four policy roundtables, and through these discussions we found areas of agreement on many, but not all, of the recommendations found in this report. Advancing the interests of the Appalachian region requires working across the aisle, both in areas where we agree and where we disagree. We look forward to working together on a bipartisan basis on these recommendations.

We are grateful to the members of this task force for their partnership on this initiative and their tireless efforts on a daily basis to strengthen Appalachia. The solutions in this report will amplify their efforts, and ultimately make a real difference in the lives of families who call this region home. We will engage with our Appalachian constituents, Congress, and the administration to find common ground on many of the issues presented in the report.

Sincerely,

  
**Senator Mark Warner**

  
**Senator David Perdue**

  
**Senator Joe Manchin**

  
**Senator Thom Tillis**



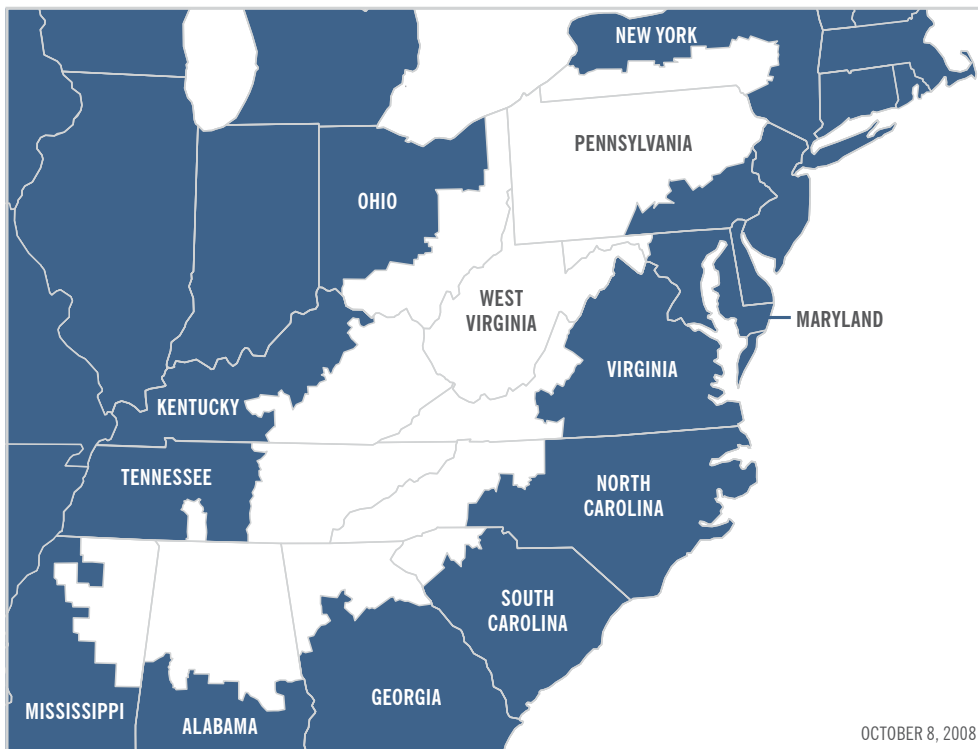
# Introduction



The Appalachian region has long faced daunting challenges of poverty and geographic isolation. Today, despite state and federal anti-poverty efforts dating back to the Johnson and Kennedy administrations, many of the region's residents continue to be vulnerable to the effects of persistent economic deprivation. In recent decades, declines in coal production and traditional manufacturing, once the region's backbone industries, have contributed to stubbornly high levels of unemployment and poverty—with serious ripple effects on people's health and well-being. Because a larger share of Appalachia's population lives in rural communities—over 40 percent, compared to 20 percent for the nation as a whole—the region has been particularly hard hit by problems, from opioid abuse to low educational attainment and youth out-migration, that are affecting rural areas across the United States.

Appalachia confronts these challenges with unique strengths and resources. As coal production has declined and other traditional manufacturing jobs have left the region, natural gas development has grown, and major auto plants and other state-of-the-art manufacturing facilities have moved in. Community and family bonds are strong, as is the region's tradition of hard work and self-reliance. And Appalachia abounds with examples of success as well as hardship: communities that are successfully re-inventing themselves and attracting new business investment; programs that are achieving promising results; and individual citizens and local leaders who, despite formidable obstacles and limited resources, are making a difference. Now as in the past, Appalachia commands attention as a region that is both disproportionately affected by the negative consequences of recent social and economic disruptions, and uniquely positioned to demonstrate how these consequences might be addressed more creatively and effectively going forward.

**Figure 1. The Appalachian Region**



**Source:** Appalachian Regional Commission, “The Appalachian Region,” 2008. Available at: [https://www.arc.gov/appalachian\\_region/MapofAppalachia.asp](https://www.arc.gov/appalachian_region/MapofAppalachia.asp).

In May 2017, the Bipartisan Policy Center joined with Senators Mark Warner (D-VA), David Perdue (R-GA), Joe Manchin (D-WV), and Thom Tillis (R-NC) to form a task force dedicated to finding pragmatic, bipartisan solutions to Appalachia’s challenges. The task force gathered leading regional and national experts to explore critical issues in four areas: education and workforce, entrepreneurship and job creation, energy and infrastructure, and rural health. In a series of four roundtable meetings—each focused on one of these topic areas—participants exchanged information about current challenges and opportunities in the Appalachian region and identified priorities for near-term action, including federal policy options. This report summarizes the key themes and insights that emerged from these discussions. It also builds on these themes and insights to offer a set of targeted recommendations that can command broad bipartisan support inside and outside the region, while achieving tangible progress on the issues of greatest concern to the people of Appalachia.

For 50 years, the Appalachian Regional Commission (ARC) has supported economic development in the region. In this report, the task force offers additional regional recommendations that aim to build on the foundation of these ongoing efforts. Further, participants in the four task force roundtables emphasized that while the Appalachia region has success stories, additional information and support are needed to continue to assess the region’s needs and priorities.



## A Need for Further Study

There is no one-size-fits-all approach to solving Appalachia's challenges. Rather, task force members found Appalachia would benefit tremendously from issue-specific, needs-based assessments that utilize existing data and studies to determine what policies would be most effective in individual areas. Entities such as the Rural Health Information Hub, funded by the Health Resources Services Administration's (HRSA's) Office of Rural Health Policy, could help identify evidence-based model programs and successful rural health projects, and operate as a clearinghouse to address health issues in the region. The task force also found that it would be useful to update needs assessments on water and sewer, broadband, and energy infrastructure. Studying successful area-specific strategies for economic recovery that have led to prosperous communities also would be valuable.

# Education and Workforce

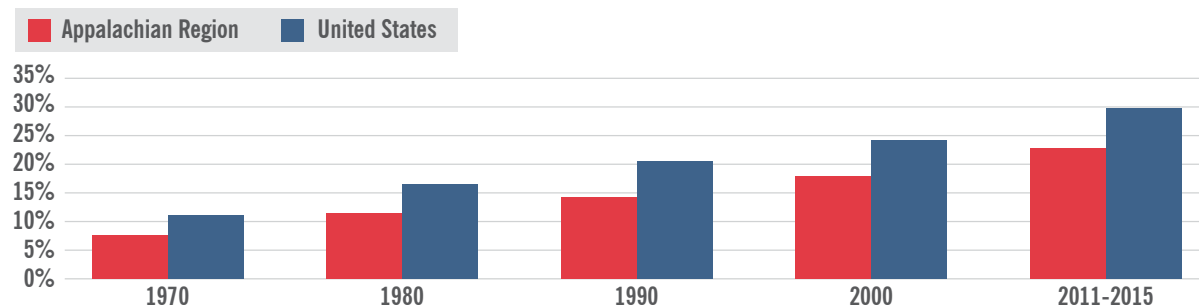


*“Lifelong education and worker training—not just to get a job but to hold one—are key building blocks for sustainable economic development in Appalachia. We should focus on ideas that are proven to work, helping people to successfully acquire the skills that create opportunity for the region.”*

**Senator Mark Warner (D-VA)**

A skilled workforce is critical to attracting employers to Appalachia and improving citizens’ employment and income prospects. Although high school graduation rates in the region are generally in line with the nation at large, educational attainment in Appalachia still lags behind educational attainment in other areas. At a time when national data indicate that the great majority of jobs (65-70 percent) require some postsecondary education and training beyond high school, while a full 35 percent require a bachelor’s degree and beyond, only 22.6 percent of Appalachia’s working-age population holds a bachelor’s degree or higher (by comparison, the national figure is 29.8 percent).<sup>1</sup>

**Figure 2. Share of Population 25 Years and Older with a Bachelor’s Degree or Higher (1970-2015)**



Source: Appalachian Regional Commission Analysis of Census Bureau and American Community Survey Data. Available at: <https://www.arc.gov/data>.

Appalachia also lags behind the rest of the country in labor force participation—that is, the share of the working-age population that is employed. Census data indicate a gap of about 5 percentage points between the regional and national labor participation rates; this gap has persisted for more than a generation. Similarly, per capita income in Appalachia, though improved over the past few decades, remains lower than the rest of the country.

While some of this disparity can be linked to a decline in jobs in the manufacturing and resource extraction industries (addressed in a following section), one study by researchers at the University of Kentucky attributed a portion of this regional disparity to skills gaps as evidenced by lower rates of college attendance and advanced degree completion, particularly in Appalachian cities.<sup>2</sup> At the same time, the region’s high school career programs and technical colleges are not aligned with changing skill demands as the economy reacts to the transition driven by the downturn of manufacturing and coal mining.

National and state policymakers and business leaders increasingly recognize that the quality of the workforce—in other words, the availability of talent—can be the single most important factor in retaining, attracting, and growing new businesses and sectors within a regional economy. Building a quality workforce requires collaboration across multiple public- and private-sector organizations to pursue a shared vision of workforce development and implement effective strategies for identifying and addressing emerging skills gaps. Business and industry leaders must help define the competencies they require in their employees, and educators at all levels, including university, community and technical college, and K-12 educators, as well as non-traditional learning providers must work together to develop the educational programs and pathways that foster these competencies. Local and county leaders, philanthropies, community- and faith-based organizations, business and industry organizations, all should rally around the vision and strategy for developing an educated and skilled workforce. Finding influential individuals who can convene and help mobilize these key players within a community is essential to success.

A strong work ethic was repeatedly noted in the roundtable discussions as being one of Appalachia’s most important assets. Given the chance to work in an environment that values and supports entrepreneurial spirit and a job well done, the people of the region can thrive. Recent innovations in aligning educational strategies with the knowledge and skills in demand by industries could therefore have an enormous impact on citizens and communities in Appalachia. Indeed, many of the Appalachian communities that are currently experiencing a renaissance are home to colleges and universities, reflecting the positive economic and social influences of these institutions.

## **Workforce Development Partnership: University of Virginia and the Center for Innovative Technology**

The University of Virginia at Wise partnered with the MACH37 Cyber Accelerator at the Center for Innovative Technology (a non-profit corporation based in Herndon, VA, that focuses on technology-based economic development) to create a pipeline of cyber jobs, internships, and educational programs in Southwest Virginia.



## *Key Areas of Focus*

- **Building local public-private collaborations to develop, implement, and support a vision and effective strategies for aligning economic development, education, and workforce development goals.** Education and workforce development are “ground games.” Collaborative efforts in this area should include, at a minimum: business and industry leaders and local business organizations; educators from colleges and universities, community and technical colleges, and K-12 schools, as well as non-traditional learning providers; community and county leaders; economic development agencies; workforce developers; philanthropies; and community-based, faith-based, and social services organizations. Together, these groups should pursue strategies that reflect both the culture of the community, and a deep understanding of the skills needed to (1) equip workers for promising employment opportunities, and (2) supply businesses with the workforce knowledge and skills needed to succeed. In addition, education and workforce development strategies must link and leverage a wide array of funding sources and other resources that “reside” in currently siloed systems or stakeholders. With effective coordination and collaboration, these resources are likely to be sufficient to support robust workforce development and education efforts.
- **Developing “smart” accelerated pathways from K-12 education to (and through) community and technical colleges, to universities.** Such pathways would have more “on” and “off” ramps between education and employment, increasing the likelihood of postsecondary education attainment. They should also be (1) better aligned with the skill demands of the new economy; (2) designed to accelerate the acquisition of valuable credentials, in part by focusing on economic sectors with known demand and opportunity for growth; and (3) replicable and scalable across states and the region. Equally important is stimulating students’ and parents’ interest in high school and community or technical college programs that provide a direct pathway to earning standards-based, industry-recognized credentials and cultivating a culture of entrepreneurship across the educational continuum.
- **Expanding access to virtual or technology-based postsecondary education and credentials to better serve rural populations.** Technology skills are now foundational in virtually every job and every sector of the economy. This is particularly true for jobs in energy, advanced manufacturing, and health care, which are some of the fastest-growing sectors in Appalachia. Technology can also be used in innovative ways to deliver education and workforce training.
- **Expanding employer engagement in education and workforce development.** Besides participating in local collaborations to ensure that curricula and credentials are aligned to current workforce needs, employers representing all economic sectors across the region should play an active role in designing and implementing work-and-learn opportunities that equip students with critical workplace skills.

## Recommendations

### 1. **Provide flexibility, incentives, and leadership to empower local leaders to build education and workforce development strategies and programs aligned to regional economies, job creation, and economic opportunity.**

In most cases, successful education and job training programs are built at the local level, and are responsive to the demands and opportunities within regional economies. Global competition and global markets, a 21<sup>st</sup> century reality, are typically seen as a national challenge, but the front lines of the battlefield are local economic regions, where companies, workers, researchers, educators, entrepreneurs, and governments come together to create competitive advantage. Successful regions demonstrate the ability to network their assets—people, institutions, capital, and infrastructure—to generate growth and prosperity.

Recognizing that the Appalachian region is, in fact, a region of contrasting sub-regions, some of which have successfully transformed their economies and others that are still distressed, Appalachian communities and economic regions must be empowered to develop and implement their own regional economic and workforce development vision and strategy. To accomplish this, strategic Regional Collaboration Teams should be formed to identify and map the assets, strengths, resources, and needs of communities. These regional teams should include representatives of business and industry organizations (e.g., chambers of commerce), and regional employers; educational institutions at all levels, including universities, community and technical colleges, and K-12; economic and workforce development systems; local governments; research and innovation labs and entrepreneurs; and philanthropies. Regional collaborations are particularly important in distressed communities where job creation strategies are necessary to provide employment for citizens.

Resources provided under the Workforce Innovation and Opportunity Act (WIOA) can provide important incentives and support for these regional collaborations, if they are “released” from certain federally-imposed constraints that limit their effectiveness in regional economies. Through WIOA, Congress could provide for a regional collaboration demonstration program. This demonstration could be modeled after the Workforce Innovation in Regional Economic Development (WIRED) initiative, which illustrated the importance of building local capacity to create the conditions for aligning economic, education, and workforce development assets and resources to drive economic transformation at the regional level. Specifically, Congress could create this demonstration program and provide for the consolidation of certain WIOA funding streams while also increasing waiver authority around eligibility requirements to provide needed flexibility. This could be achieved through several potential avenues:

- Amendments to WIOA, which could initially be specific to an Appalachian Region Economic Recovery Program but could also signal needed transformational changes to WIOA in the future;
- An appropriations measure; or
- Use of current Department of Labor (DOL) demonstration authority, via a partnership with leadership of DOL.

## Talent Pipeline Management Program

The U.S. Chamber of Commerce Foundation through its Talent Pipeline Management program is organizing new employer collaboratives that are empowering the business community to be better managers of their talent supply chains. By encouraging employers to collaborate and share more granular information, they can develop actionable data on their workforce requirements that will help them close the skills gap and find the workers they need to succeed. Partnerships in Kentucky, Tennessee, and Virginia have already demonstrated results that can be replicated throughout Appalachia.

- 2. Reform Pell Grant eligibility to include more non-traditional students.** Pell Grant eligibility should be reformed to include part-time students, students participating in community college credentialing programs, and students who are enrolled in an apprenticeship or other work-and-learn program. The Pell Grant program provides eligible low- and moderate-income college students necessary financial assistance while pursuing their education. Since the majority of jobs in our economy now require some postsecondary education, there has been growing bipartisan recognition of the need for more flexible financial aid policies. Currently federal financial aid does too little to support students who are older, returning to school, or seeking specific skills and credentials for work. Many of these students are combining work and learning, attending school part-time, and accelerating their path to an industry-recognized and/or college credential, and they need this flexibility to attain the skills needed for employment. By ensuring eligibility for students who are enrolling in shorter-term educational pathways to credentials, apprenticeships and other work and learn programs, and part-time programs of study, can help ensure that more students gain the skills necessary to obtain jobs and advance in their careers.
  
- 3. Congress and the Administration should ensure that virtual learning options are included in new Department of Labor and Department of Education grant programs that target high-demand competencies and postsecondary credential attainment.** Because employers' access to an educated and skilled workforce is increasingly cited as a national challenge, and the availability of a skilled workforce is recognized as a regional economy's most important asset for job creation and growth, the portfolio of education and job training programs available to Appalachian citizens must continue to grow and address challenges of access and equity. For example, there is growing recognition that the apprenticeship model of education and job training—combining concept or theory learning and applied, hands-on learning, with skills attainment measured by performance-based assessments—is among the most successful models in preparing workers for jobs in growing industries and in providing employers with a skilled workforce with real-world experience. Although DOL Office of Apprenticeship standards allow for online training, the agency's support for required classroom training has focused almost exclusively on building capacity in community colleges. Many individuals do not live in close proximity to a community college. Virtual, on-line learning options should be expanded. This recommendation is consistent with the growing portfolio of quality on-line learning programs that recognize not only how successfully many students can learn in an on-line environment but also how effectively virtual learning programs expand access and equity to quality credentials with labor market value.



- 4. Localities or the private sector should institute a “domestic study abroad” program to share innovative ideas and build connections across the region.** A regional leaders and students exchange program, that pairs leaders and students from newly prospering communities with counterparts from distressed communities, could increase learning and help build regional connections. Such a program could be convened by federal or local leaders from around Appalachia, but ultimately would be led by individuals in the region. Task force members have stressed that not all communities in Appalachia are distressed, but it has not always been clear why certain communities have succeeded while others have not. A regional “domestic study abroad” program would inform leaders and students from the region about successful strategies from other communities in the region and give them ideas to bring back to their home communities. It would also build regional connectivity, giving participants and their communities more resources to address the challenges they face. This program could also incorporate national service programs, such as AmeriCorps and Job Corps.


A domestic study abroad program would ideally be paired with the Regional Collaboration Teams proposed in Recommendation 1. This would allow leaders from participating communities to gain insight into how different areas of Appalachia are uniting around an economic vision, education and workforce development strategies, and innovation and entrepreneurship strategies to link and leverage their funds, create an innovative and entrepreneurial environment, and address challenges impacting the health and well-being of citizens. Sharing promising practices will be a key role for these “study abroad” teams.

## **Appalachian State University’s Assessment Support and Counseling Center**

Appalachian State University’s Assessment, Support and Counseling (ASC) Center demonstrates success in bringing health providers to rural areas in need. ASC links the expertise of university-affiliated licensed mental health providers and Appalachian graduate students to provide mental health intervention to K-12 students in western North Carolina’s Appalachian communities. The program successfully delivers mental health services to students in their schools at no cost to families to combat barriers to mental health treatment, such as transportation limitations, financial issues and stigma. The findings regarding the effectiveness of ASC have been published in the healthcare literature. This partnership also gives Appalachia’s students real-world clinical experience to help them develop into effective practitioners in rural communities before they enter the full-time professional workforce.

- 5. Provide a tax credit to companies that provide training to upskill incumbent workers.** Congress and the Administration could consider a tax credit for employers who invest in upskilling incumbent workers as a way to avoid job losses associated with technological change, broader economic shifts, or other factors.

# Entrepreneurism and Job Creation

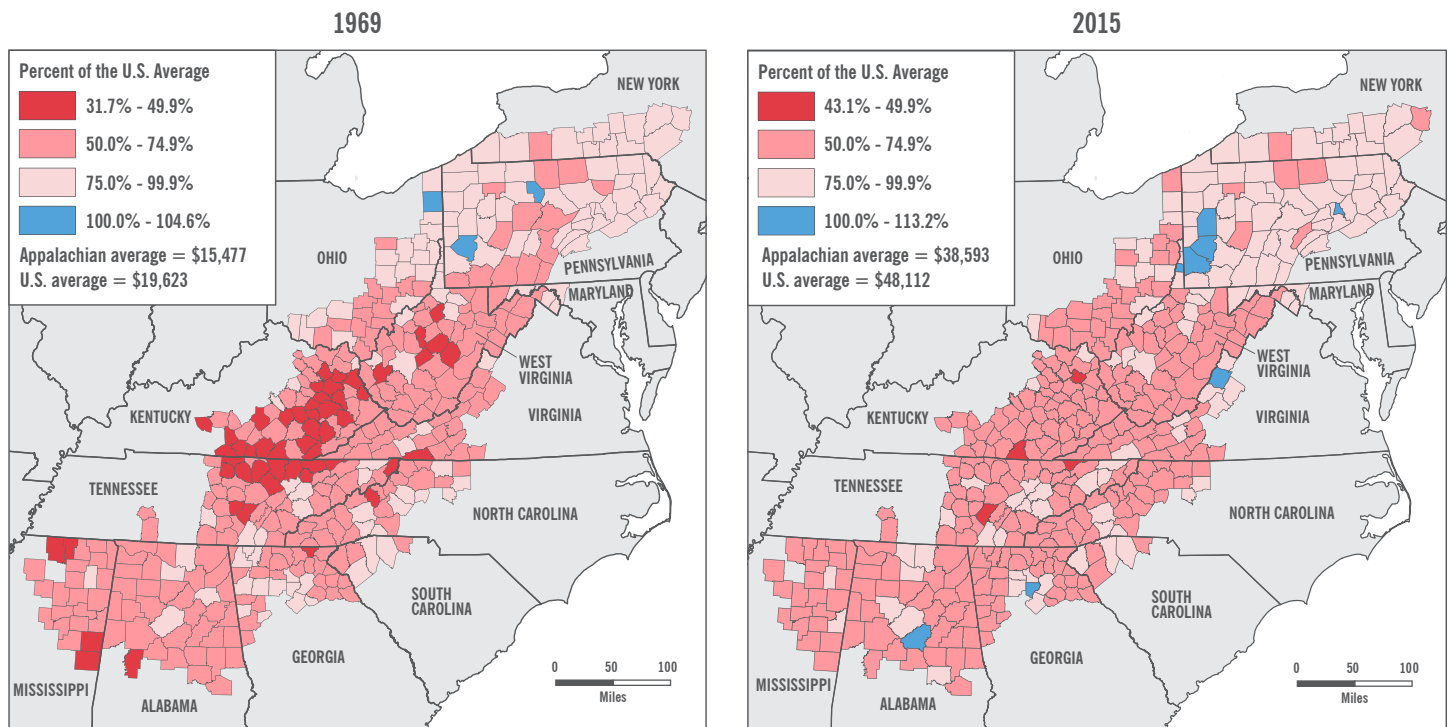


*“The economic miracle we witnessed over the last 70 years was built on innovation and capital formation. We must encourage innovators to stay and invest in Appalachia to help spark growth in the region.”*

**Senator David Perdue (R-GA)**

Entrepreneurism and job creation are vital to providing economic opportunity and improving quality of life for Appalachia’s citizens and to addressing the region’s myriad challenges. While considerable efforts have been made to diversify the regional economy and attract new business ventures, more action is needed to create and sustain a culture of entrepreneurship that can lead to job growth and to make the investments that will enable Appalachia to be competitive in the globalized 21st century economy. For example, even though the region’s unemployment rate now tracks the national average, job creation has not kept pace with national trends. This is worrisome for several reasons, not least because many of the negative consequences are self-reinforcing: diminished employment opportunities can lead to out-migration, erode quality of life in local communities, and make the region less attractive to businesses that are deciding where to site new operations and new jobs. In Appalachia, more than half of Appalachian counties lost population between the 2006-2010 and 2011-2015 periods<sup>3</sup>—in part because young adults left the region to seek better job prospects elsewhere.<sup>4</sup> A dearth of high-paying jobs also translates to lower incomes, even for those residents who are employed. Today, the poverty rate in Appalachia is substantially lower than it was in 1969, but many counties still have per capita income levels below 75 percent of the U.S. average (Figure 3).

**Figure 3. Per Capita Income in Appalachia, Relative to the U.S. (Percent of the U.S. Average)**



Source: Appalachian Regional Commission, *Appalachia Then and Now*, February 2015, Figure 2.

Available at: [https://www.arc.gov/assets/research\\_reports/AppalachiaThenAndNowCompiledReports.pdf](https://www.arc.gov/assets/research_reports/AppalachiaThenAndNowCompiledReports.pdf).

Fortunately, Appalachia already possesses many of the tools it needs to be competitive in the modern economy, and many programs—including a number of federal programs, some of which date back to the 1960s—have demonstrated success in fostering entrepreneurship and job creation. For example, the federal Special Impact program has provided grants to community development corporations (CDCs). One such CDC, which encompassed ten counties in rural Kentucky, provided funds for local workers to build a facility for producing furniture that was ultimately sold in department stores across the United States. While similar models of federal support may no longer meet the needs of Appalachia, strong federal, state and local partnerships can still develop and implement successful job creation initiatives. Increasingly, such initiatives can take advantage of new tools and technologies, including expanded high-speed Internet access, while also utilizing existing investment mechanisms and engaging traditional industries, such as agriculture and manufacturing, that have long been cornerstones of the regional economy. From tourism to high-tech startups to family-run farms, Appalachia has enormous economic growth potential and a wealth of job creators to help revitalize the region's economy.



## University of Georgia Entrepreneurship Certificate Program

The University of Georgia has an entrepreneurship certificate that encourages students to start businesses. The program is run by an entrepreneur and provides students with invaluable real world experience. Task force members stressed the importance of encouraging students at a young age to consider entrepreneurship and provide programs to equip them with the experience and skills necessary to start their own businesses.

### *Key Areas of Focus*

- **Creating formal partnerships that include government, the private sector and other stakeholders to address job creation.** Partnerships between all levels of government, businesses, universities and non-profits are key to developing networks that promote entrepreneurship and job growth. These partnerships provide stability and structure that can compel risk takers and would-be entrepreneurs, particularly in rural areas of Appalachia. Identifying the unique requirements of small businesses is difficult, and there is no “one size fits all” approach. By working together to identify common themes, challenges, and needs, multiple stakeholders can foster a climate of entrepreneurship that helps job creators navigate their complex industries. In addition, state and local leaders can encourage successful job creators who have retired to rural areas to engage with their new communities through business development organizations that entrepreneurs could turn to for validation and feedback regarding their ideas. The resulting “innovation eco-system,” built from collaboration among local governments, academic institutions and other public entities, and the private sector, could provide more organic support for job creation, independent of formal government programs.

### Public-Private Partnerships

While more work needs to be done, there are many examples in Appalachia of partnerships between local governments and private companies (often with the federal government playing a facilitating role) that have yielded successful collaborative programs. In Ash County, North Carolina, the Department of Commerce and General Electric worked with a local community college to create a worker pipeline that led students from the classroom to a job with the company. In another case, Google worked closely with a community college in a separate community to train workers for a nearby data center the company operated.

- **Identifying and lessening the regulatory burden.** Regulations can impose significant compliance costs on existing businesses and their complexity can create a formidable barrier to starting new businesses. Assistance in understanding and complying with pertinent regulations can be a make-or-break issue for entrepreneurs.

- **Improving connectivity and communication between federal policymakers and state and local governments.** In many instances, job creators, entrepreneurs, and job seekers are simply not aware of the many resources available to them. Maintaining such connections is especially challenging in Appalachia, which includes many geographically isolated rural communities. For example, many universities have resources and training programs for individuals who wish to start or expand their own businesses. In other instances, federal policymakers may be unaware both of the challenges the region faces and of the unique programs local companies and universities have developed to address these challenges. In sum, it is vital that existing entities at all levels of government engage with local communities to ensure that existing resources are deployed effectively.

## *Recommendations*

1. **Reduce overlap and duplication in the federal government’s financial regulatory structure, and give regulators more flexibility to set thresholds for enhanced regulatory supervision.** According to task force members, financial regulations have had a negative effect on community banks, which are more likely to lend to small businesses in the region or smaller regional business projects than larger banks. A 2016 BPC study found that stricter bank regulations may have created multiple binding constraints that can hurt small businesses’ access to credit and raise borrowing costs.<sup>5</sup>

Financial regulation is necessary to protect financial stability and reduce the risk of financial crises. However, regulation and the federal government’s regulatory structure can be designed to achieve these objectives and be conducive to economic growth. BPC’s work has identified key steps to enhance financial stability and support long-run sustainable economic growth and job creation.

- BPC has recommended better tailoring of regulation and supervision of nonbank financial firms to ease regulatory burdens on those that are not systemically important to the overall economy.<sup>6</sup>
- BPC has proposed a plan for Congress to better streamline the fragmented U.S. regulatory structure to enhance financial stability and strengthen economic growth by reducing regulatory fragmentation, duplication, and overlap.<sup>7</sup>

2. **Establish a Senate Task Force on Intergovernmental Affairs.** The recently formed House Task Force on Intergovernmental Affairs, a bipartisan group of lawmakers focused on balancing the interests of federal, state, tribal, and local governments, seeks to provide a forum for states, cities, and counties to showcase innovation and creativity in solving public policy problems and examine the effects of federal rules and regulations on state and local partners. This task force has already done substantial work in reaching out to state and local groups for their perspective, and it could easily be expanded to the Senate.

The Senate task force could be helpful in identifying areas where the regulatory burden can be lessened to benefit job creators and would-be entrepreneurs. Similar to the way that this Appalachia task force has functioned, the Senate task force could work with state and local officials, as well as representatives from private industry, academia and other non-profit organizations to develop legislative solutions aimed at spurring job growth in America’s rural communities.

- 3. Expand federal programs that facilitate workforce-related public-private partnerships.** Task force members highlighted access to skilled workers as a barrier to further job creation in the region. Finding skilled and experienced workers is a challenge for many industries throughout the United States. As discussed in the prior section, this challenge is especially acute in regions like Appalachia, where post-secondary educational attainment lags behind that of other regions.

Government agencies can formalize and institutionalize programs that allow private companies to work directly with universities to help provide a pipeline of skilled workers to the businesses that need them. Certain programs like this do exist, and could be targeted to suit the regional needs of Appalachia. To this end, agencies should work with entities such as the Regional Collaboration Teams recommended in the prior section, the Appalachia Regional Commission, companies that already have a physical presence in Appalachia, and other government agencies to utilize their experience and tailor federal programs to meet the unique training and workforce development needs of the region.

- 4. Identify barriers that prevent Appalachian businesses from accessing existing workforce programs.** Task force members mentioned difficulties in identifying what federal resources were available to assist companies in finding experienced workers, and in navigating the requirements and paperwork associated with guest worker programs. Some noted that even after complying, they could not find enough workers to meet their needs.

A Senate Task Force on Intergovernmental Affairs, as recommended above, would be ideally suited to identify these challenges. Federal agencies, such as the DOL or the Department of Commerce, could be directed to undertake feasibility studies aimed at determining where barriers exist for businesses seeking to access federal resources, and then institute specific reforms that could result in the hiring of more skilled workers.



# Energy and Infrastructure



*“We must take advantage of the region’s abundant energy resources and economic opportunities while working to overcome our infrastructure challenges. With the right investments and smart policy, we can benefit from the energy transition now underway, as well as build and modernize transportation, water and sewer, and broadband infrastructure for the next century.”*

**Senator Joe Manchin (D-WV)**

Energy and infrastructure are two areas of critical importance for improving Appalachia’s long-term economic prospects, attracting new industry, and providing a better quality of life for citizens. Recent years have seen real progress toward developing new energy resources and addressing persistent infrastructure gaps, but further investment and innovative approaches are needed to realize the region’s potential and overcome remaining challenges in these sectors.

Of course, Appalachia has long been known for its abundant coal resources, and coal production which, despite recent hardships for the industry, remains an important part of the region’s economy. Less widely known is the fact that Appalachia is also rich in natural gas and unconventional oil resources (e.g., oil sands and oil shale) and that development of these resources has been expanding rapidly. In fact, Pennsylvania, Ohio and West Virginia recently joined the ranks of the top ten states in the country for natural gas production.<sup>8</sup>

In addition, Appalachia has significant potential to develop renewable and alternative energy resources such as wind, solar, hydropower, waste products, biofuels, and biomass. The region’s wind potential is concentrated in the mountains, where wind

speeds are faster. There are also a handful of geothermal hotspots yet to be harnessed and numerous rivers and watersheds that offer opportunities for small hydro projects. Many of these renewable resources are underdeveloped but offer significant opportunities to diversify the region's energy portfolio and provide job creation.

Thus, while coal still provides a significant fraction of the energy used to generate electricity in the United States, growing demand for natural gas and renewable energy is already changing the economic dynamics of the region. As a significant natural gas producer, for example, Appalachia is well positioned to build out natural-gas-based chemical and advanced manufacturing industries. Technologies for capturing and sequestering or utilizing carbon dioxide (CO<sub>2</sub>) emissions from energy production and industrial processes, for example, have been developed, but additional cost reductions are needed. Meanwhile, abandoned coal mines can be reclaimed, providing prime locations for new energy projects, economic development, and other creative uses, including tourism and outdoor recreation activities such as hunting and fishing.

Like much of the country, Appalachia needs updated infrastructure. But the region's steep terrain and rugged topography often make infrastructure projects more technically difficult and more expensive per mile to construct and maintain. Historically, highway engineers often bypassed local towns when laying down the initial interstate system, and current federal highway programs, many of which base funding amounts on an area's population, have not provided sufficient resources to address these gaps. These challenges are particularly acute in Appalachia's rural areas where, because of low population density, infrastructure is more expensive per user to build and operate, and therefore less attractive to private investors. On the other hand, completing key road projects could greatly improve the region's connectivity and reduce the region's economic isolation, while spurring business investment and growth. Very sparsely populated areas also need roads to improve workers' access to job opportunities.

Appalachia's infrastructure challenges, however, are not limited to gaps in the surface transportation network. The region also features concentrations of economically distressed communities that lack other types of essential infrastructure, from modern water and sewer systems, to broadband Internet access. For example, more than 25 percent of the region's population is not served by a community water system and must rely on private well water for household drinking water needs.<sup>9</sup> Similarly, availability of broadband in the region remains lower than the national average and is unevenly distributed, particularly in economically distressed counties. Even where broadband is available, it is often more expensive and download speeds in underserved areas are often significantly lower than the national average.

A multi-faceted approach is needed to confront these challenges and leverage the region's existing resources to take advantage of new economic opportunities. This approach must look beyond simply seeking increased federal support. Comprehensive long-term strategies that consider the region's diverse needs, including the needs of both urban and rural communities, while encouraging state and local cooperation, are needed.

## Refurbished Appalachian Coal Mines

Examples of reclaimed abandoned coal mines in Appalachia include a lavender farm and wildlife center. In Hernshaw, WV on Four Mile Mountain, an abandoned surface mine is now a site for growing and harvesting lavender plants, with a goal of providing jobs to veterans and displaced coal miners. In addition, the Appalachian Wildlife Center in Corbin, KY will open in 2019 on two mountain-top removal mines. Located along the Cumberland River, it will teach students about coal, nature, and wildlife, and serve as a conservation and research facility.

### *Key Areas of Focus*

- **Building on Appalachia's past experience with the energy industry, its geographic location, and its abundant resources, to identify new industries and diversify its energy portfolio.** Building on the region's history to target new competitive industries is key to economic revitalization. Task force members identified a number of industries that could utilize the region's unique strengths and resources, such as natural gas, chemicals, advanced manufacturing, and extraction of rare earth elements (critical minerals) from coal and coal byproducts. Promoting these industries on a wider scale could require streamlining certain regulations to support the development of critical technologies and additional federal and state cooperation, along with public-private partnerships and financing in regional economic development efforts.
- **Including distressed Appalachian rural areas in future infrastructure investment efforts.** Due to its geography and other barriers, Appalachia's infrastructure needs have been difficult and costly to meet. However, continued investment in transportation, broadband, and other infrastructure is essential to ensure that companies can do business in the region and to connect rural areas more closely to the rest of the country. While past efforts have made headway, key transportation projects across the region remain unfinished.
- **Streamlining federal permitting while maintaining environmental protections to speed up the process of improving the region's infrastructure.** Task force members highlighted the complexity and length of the permitting process as a barrier to the completion of key infrastructure projects and a major source of cost to the public and private sectors. Both the Department of Transportation (DOT) and the Office of Management and Budget (OMB) were given legislative authority to streamline current permitting processes under the Fixing America's Surface Transportation (FAST) Act,<sup>10</sup> but changes have not yet been implemented.

## Recommendations

- 1. Use Appalachia's vast natural gas resource to build out value-added chemical and advanced manufacturing industries. The first step is to develop a storage and trading hub for natural gas liquids. This would provide a powerful anchor for economic revitalization in the region.** A hub would also be in the nation's interest as Appalachia's abundant natural gas resources and location near the Midwest and East Coast could make the area a top national center for the U.S. petrochemical and plastic resin manufacturing industries. Ultimately, the region could rival the Gulf Coast as a center of the petrochemical industry. Researchers believe the geological formations surrounding the Ohio River, including parts of Ohio, Pennsylvania, and West Virginia, would provide ideal conditions for underground natural gas liquid storage.<sup>11</sup> In addition, a storage hub would create well-paying jobs and help the regional economy diversify beyond resource extraction. A recent report by the American Chemistry Council found that build-out of this energy infrastructure could stimulate 100,000 permanent new regional jobs and attract \$36 billion in capital investment.<sup>12</sup> Congress and the Administration can help reduce uncertainty and incentivize investment through public-private financing tools such as the Department of Energy's (DOE's) loan program, as proposed in legislation, the Capitalizing American Storage Potential (CASP) Act, introduced by Senators Manchin (D-WV) and Capito (R-WV). Additionally, to better inform efforts to develop a hub, Senators Capito (R-WV), Manchin (D-WV), and Portman (R-OH) introduced the Appalachian Ethane Storage Hub Study Act of 2017.
- 2. Conduct further federal research to develop technology that can be commercialized for extracting rare earth elements from coal byproducts.** The U.S. needs to diversify its supply of rare earth elements instead of relying on sources from other countries, such as China, which currently supplies 85 percent of the world market. This could increase America's competitiveness and national security. Rare earth elements are important for defense applications, consumer electronics and some medications. Coal byproducts contain rare earths, which are highly valuable components of the new energy economy that could be mined with emerging techniques and technologies. Researchers at Duke University have found that Appalachian coal contains some of the highest concentrations of rare earth elements in the country.<sup>13</sup> The first step is to conduct further research and develop partnerships between universities with accredited mining engineering programs and mining companies to improve extraction technologies. Pilot projects at West Virginia University, the University of Kentucky, and Virginia Tech have begun receiving support from DOE and the National Energy Technology Laboratory.
- 3. Accelerate the commercialization of carbon capture, utilization and storage (CCUS) technologies, which are necessary to ensure that (1) our abundant coal resources are competitive in domestic power markets; and (2) the U.S. is a leader in exporting clean coal technology to developing nations like China and India.** Many CCUS technologies are mature and already used in commercial applications, but additional cost reductions are needed. Several key elements are required to secure the successful commercialization of CCUS including (1) an outcomes-based program for fossil energy R&D funding at the Department of Energy with a sustained focus on CCUS; (2) reform of the 45Q sequestration tax credit; and (3) build-out of CO<sub>2</sub> pipeline infrastructure. The United States needs additional clusters of projects networked by CO<sub>2</sub> pipelines to form the backbone of a national U.S. CCUS ecosystem. The best strategy for



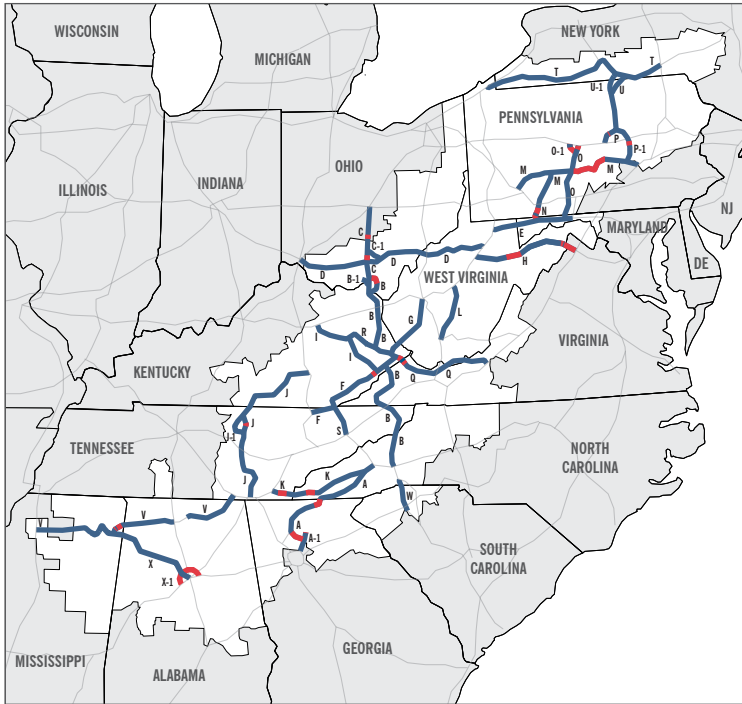
meeting this need is a combination of tax incentives for capturing carbon and revenue from selling captured CO<sub>2</sub> into the enhanced oil recovery market for other end uses. An expanded and reformed 45Q tax credit, in particular, will incentivize additional commercial-scale CCUS projects, providing technology learning for developers and de-risking for financiers. One other key policy objective that is important is the inclusion of CO<sub>2</sub> pipelines in any federal infrastructure initiative<sup>14</sup>; and competitive power market reforms.

## West Virginia University partnership with DOE's National Energy Technology Laboratory

West Virginia University (WVU) is working with DOE's National Energy Technology Laboratory on a pilot project to turn some Appalachia coal mines into an interconnected processing facility for rare earth elements. Researchers at WVU have partnered on a DOE grant on the development of a mobile plant facility for the recovery of rare elements. Phase One of the planning process has been completed. With the approval of DOE, they aim to begin Phase II involving construction and testing of the mobile facility.

- 4. Complete the Appalachian Development Highway System (ADHS).** Task force members view the ADHS as the region's highest transportation priority. This region-wide system is essential, nationally significant, and 90 percent complete. It will connect some of the country's most economically distressed areas to economic opportunities. Funding is needed for the 13-state region as a whole, with varying funding requirements for individual states. Each state's costs to complete its respective portions of the ADHS are comparable to the cost of individual projects in more densely populated areas. Any federal infrastructure legislation should ensure that distressed rural areas receive federal investment. These areas need special consideration to enable them to compete with more densely populated regions. The current infrastructure debate provides an opportunity for Appalachia to join with other rural regions that have concentrations of economically distressed communities to ensure the allocation of federal investment to where it is needed most. The task force also found Congress should consider ensuring distressed rural areas can fairly compete for infrastructure investment dollars.

**Figure 4. Appalachian Development Highway System**



Source: Appalachian Regional Commission, Status of ADHS corridors by state, as of September 30, 2016.

Available at: [www.arc.gov/images/programs/transp/ADHSMap9-30-2016.pdf](http://www.arc.gov/images/programs/transp/ADHSMap9-30-2016.pdf).

- 5. Improve and streamline federal permitting while maintaining environmental protections.** The complicated and often lengthy permitting process is costly for both the public and private sectors. Further, sequential issuance of permits and reviews by different agencies often adds unnecessary time and costs to a project. One way to improve the permitting process includes OMB and DOT should complete the implementation of FAST Act permitting provisions<sup>a</sup> and the federal government should ensure permitting is done simultaneously across agencies with minimal delay. Additionally, DOT and other federal agencies should consider institutionalizing and expanding the use of FAST Act Permitting Dashboard authorities. Authorities granted to the Federal Permitting Improvement Steering Council (FPISC) under the FAST Act should be used to provide greater accountability and predictability for projects under federal jurisdiction. Adding projects to the Permitting Dashboard<sup>15</sup> will allow for more transparent tracking of permitting requirements, timelines, and federal agencies' responsibilities. In addition, agencies are not only required to conduct simultaneous reviews, but are held accountable for falling off schedule. Covered projects therefore receive the benefit of enhanced predictability and accountability. They are also provided enhanced legal protections in the form of a two-year statute of limitations to challenge any authorizations and the requirement that environmental challenges must have been raised during the public comment period. Greater use of the FPISC's authorities and the Permitting Dashboard would be a significant step in the right direction. Significant infrastructure projects in Appalachia should apply to be part of the FAST Act's voluntary permit streamlining process so that they can benefit from the permit dashboard, greater coordination with agencies and states, and expedited review and scheduling.

<sup>a</sup> See [bipartisanpolicy.org/blog/how-the-trump-administration-can-accelerate-permitting-now](http://bipartisanpolicy.org/blog/how-the-trump-administration-can-accelerate-permitting-now) for a list of FAST Act provisions that need to be implemented.

# Rural Health

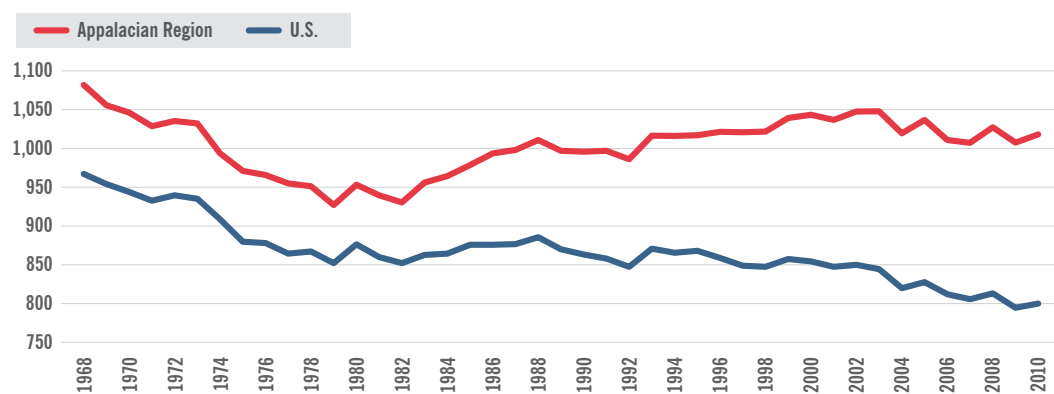


*“To reach communities in Appalachia experiencing poor health outcomes, we will need creative partnerships that leverage federal, state, local, and private resources to ensure that both clinical and community-based services are available to those who need them most.”*

**Senator Thom Tillis (R-NC)**

A necessary requirement for economic progress in Appalachia is the good health of its residents. Unfortunately, the people of Appalachia face myriad health challenges that lead to lower life expectancy and poor quality of life. As seen in Figure 5 the region has not experienced the decline in mortality rates seen over the last 25 years in the nation as a whole. In fact, many Appalachian counties have mortality rates above 150 percent of the national average (Figure 6).

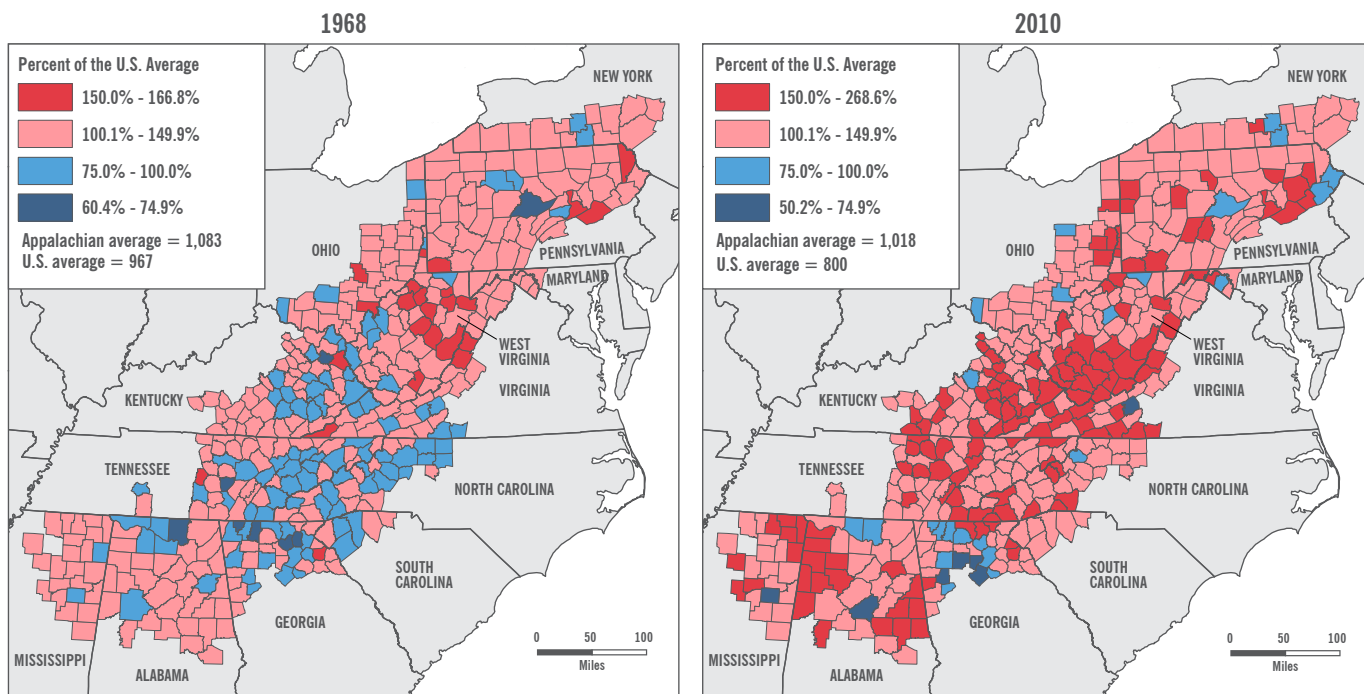
**Figure 5. Mortality Rates in Appalachia (Deaths per 100,000 People), Relative to the U.S. (Percent of the U.S. Average)**



Source: Appalachian Regional Commission, *Appalachia Then and Now*, February 2015, Figure 39.

Available at: [https://www.arc.gov/assets/research\\_reports/AppalachiaThenAndNowCompiledReports.pdf](https://www.arc.gov/assets/research_reports/AppalachiaThenAndNowCompiledReports.pdf).

**Figure 6. Mortality Rates as a Percent of the U.S. Average (Deaths per 100,000 People)**

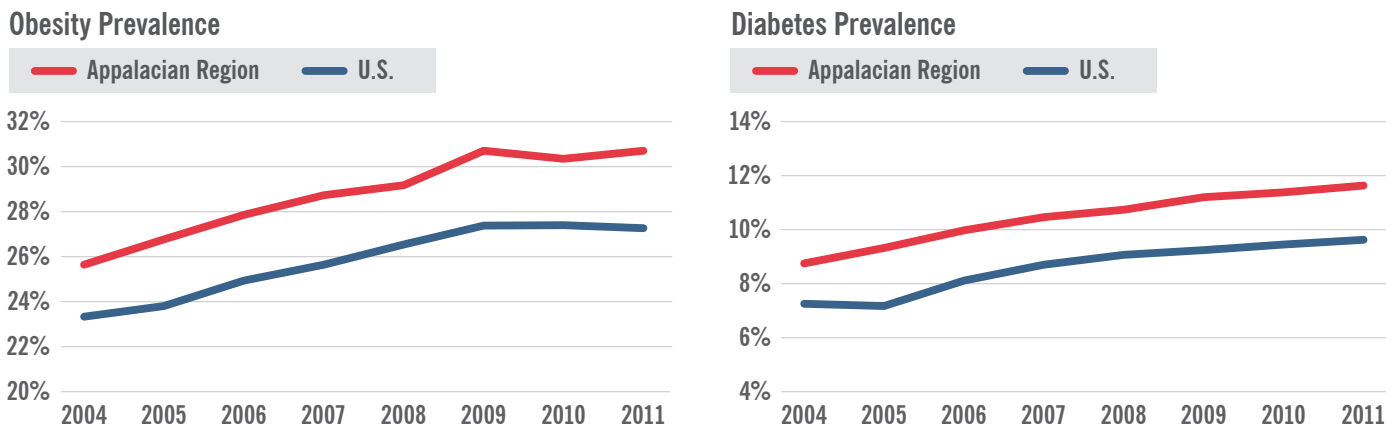


Source: Appalachian Regional Commission, *Appalachia Then and Now*, February 2015, Figure 9.  
Available at: [https://www.arc.gov/assets/research\\_reports/AppalachiaThenAndNowCompiledReports.pdf](https://www.arc.gov/assets/research_reports/AppalachiaThenAndNowCompiledReports.pdf).

Three critical drivers of poor health in rural Appalachia demand urgent attention: (1) chronic diseases and associated risk factors (e.g., obesity); (2) opioid addiction and overdoses; and (3) a shortage of health care professionals in the local workforce.

Poor nutrition, inadequate physical activity, and tobacco use have contributed to a high burden of chronic diseases in Appalachia, including heart disease, cancer, diabetes, chronic obstructive pulmonary disease (COPD), and oral diseases. Figure 7 shows a worsening trend for obesity and diabetes nationwide, with an even higher burden in Appalachia. More than 33 percent of the “diabetes belt” counties lie in central and southern Appalachia.<sup>16</sup>

**Figure 7. Obesity and Diabetes Prevalence (2004-2011)**

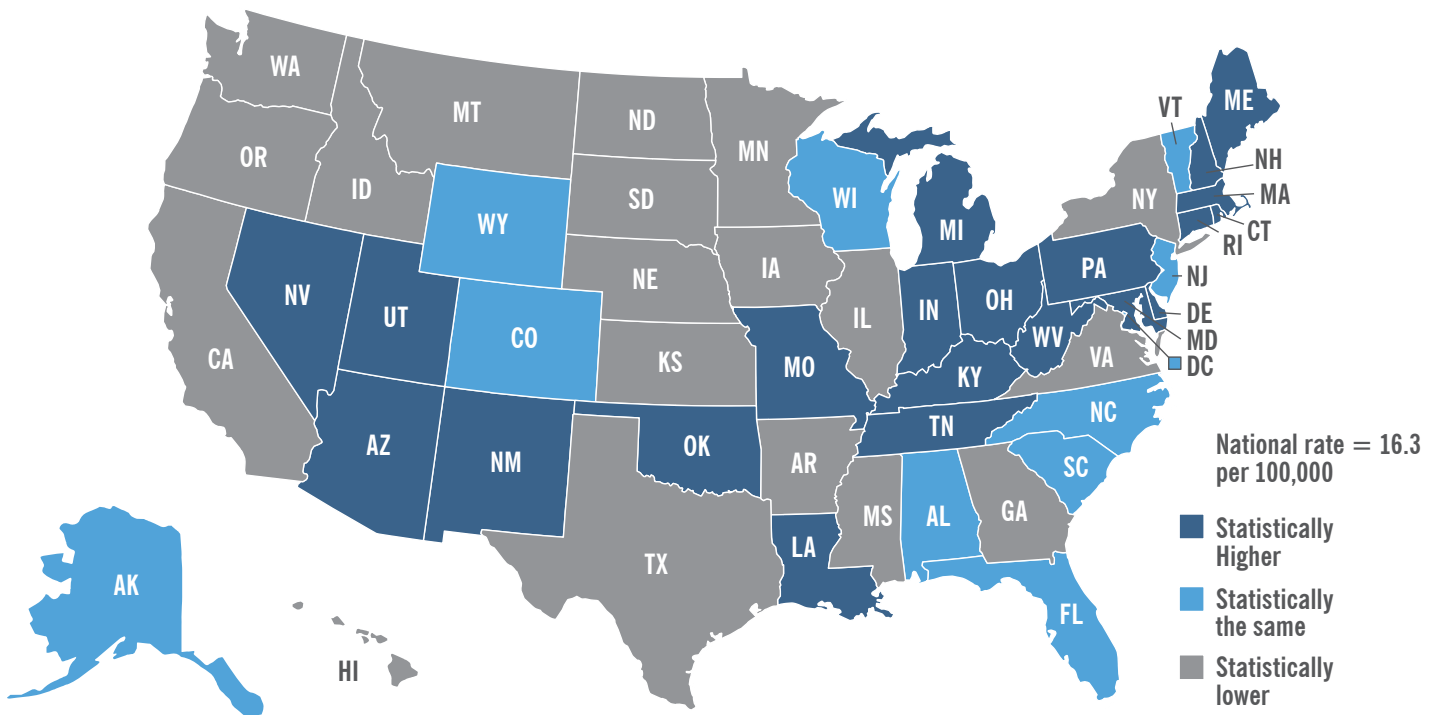


Source: Appalachian Regional Commission, *Appalachia Then and Now*, February 2015, Figure 41 and 43.  
Available at: [https://www.arc.gov/assets/research\\_reports/AppalachiaThenAndNowCompiledReports.pdf](https://www.arc.gov/assets/research_reports/AppalachiaThenAndNowCompiledReports.pdf).



In addition to a high prevalence of chronic diseases, the opioid epidemic, caused by prescription pain medications, heroin, and, to an increasing extent, synthetic opioids such as fentanyl, has particularly affected the Appalachian region. This region has been experiencing some of the highest overdose death rates in the country (Figure 8), as well as the steepest increases in opioid-involved overdose deaths in the past five years.

**Figure 8. Age-Adjusted Drug Overdose Death Rates in 2015, by State**



Source: National Center for Health Statistics, National Vital Statistics System, Mortality  
 Available at: <https://www.cdc.gov/nchs/products/databriefs/db273.htm>.

Prevention and treatment of these conditions requires a robust healthcare and public health workforce. However, shortages of health professionals in Appalachia and a lack of sufficient medication-assisted treatment programs, particularly for opioid addiction, are impeding care delivery. Telemedicine has not been fully scaled in the region, and it is not clear whether providers are being empowered to practice at the top of their license.

Fortunately, communities and individuals throughout Appalachia are developing responses to these challenges that reflect their own unique needs and experiences. One way the federal government supports these efforts is through the Appalachian Regional Commission’s health projects, which support health professional training, health care access, and health promotion in the region. The federal government could further assist the region in improving rural health outcomes by facilitating partnerships at all levels and between key sectors.

## Marshall University Substance Abuse Prevention Training

The Substance Abuse and Mental Health Services Administration of the U.S. Department of Health and Human Services has been awarding grants to academic institutions and state cooperative agreements to establish training programs and services to address substance use disorders. Marshall University received one of these grants in 2015 to develop a program and teach Marshall students the skills to deliver Screening, Brief Interventions, and Referral for Treatment (SBIRT). SBIRT is a comprehensive public health approach to provide early intervention and treatment services for people suffering from substance use disorders, or those at risk of developing them. Marshall's program involves the collaboration of six departments and two professional schools, including psychology, social work, counseling, public health, nursing and physical therapy, and the School of Pharmacy and the Joan C. Edwards School of Medicine. It also engages community partners, like the Mayor's Office of Drug Control Policy, reflecting the holistic approach necessary to address the public health challenges related to addiction and mental health disorders. The health professionals who complete the program will be able to go out into the community with the skills to effectively screen, use motivational interviewing, and appropriately refer patients who need specialty treatment. Marshall's program also aims to engage the entire West Virginia health care system by promoting SBIRT implementation to increase access to care for those experiencing or at risk of a substance use or mental health disorder.

### *Key Areas of Focus*

- **Improving data collection, analytics, and connectivity as critical tools for identifying the best health interventions for the region.** Investments to address health challenges need to be evaluated for their effectiveness to ensure they are achieving positive outcomes for the people of Appalachia. While some organizations do collect data on health interventions in the region, task force members pointed out that it is often fragmented or unavailable to be shared in useful ways. Increasing the use of evidence-based interventions will likely require federal and state cooperation to elevate existing clearinghouses of best practices and ease burdens on data sharing.
- **Promoting community-based investments in the region that allow for the flexibility needed to serve rural areas and promote program sustainability.** Short funding cycles and funding that is not targeting the neediest populations hinder the kinds of sustained and impactful changes that are needed to move the needle on the health challenges facing Appalachia, particularly challenges related to chronic disease and addiction. Fostering collaborations among trusted local partners to creatively blend funding streams could help drive resources where they are needed most and create the conditions for program longevity.
- **Ensuring that there are enough health professionals to serve rural Appalachian communities and providing those professionals with adequate training to address the unique challenges of these communities.** Task force members highlighted the point that shortages of health care professionals, particularly physicians, make access to care difficult for many Appalachians. The aging of the current health care workforce will also contribute to shortages across the health care sector. Task force members also highlighted the need for improved training for health professionals, particularly with respect to the appropriate prescription of opioids and addiction treatment.

- **The complex nature of health issues, particularly in Appalachia, will require creative partnerships among federal, state, and local governments and private and non-profit entities.** Existing community hubs, such as schools or community centers, can act as logical access points for health and social services. The rural nature of the region also encourages investments in technology solutions, such as telemedicine, to foster partnerships between local patients and practitioners with resources outside Appalachia.

## Department of Defense Innovative Readiness Training

One critical issue for rural regions like Appalachia is a lack of accessible health care providers. One innovative way that the federal government is helping to address this issue is through the Defense Department's Innovative Readiness Training (IRT) program. This civil-military partnership helps connect military professionals, including doctors, dentists and other health care practitioners, to communities in need. The service members increase their patient volumes, receiving essential training to help them be mission-ready, and the communities receive care at little to no cost, since the program is supported by military training funds. This extends the reach of services to individuals who lack access to care, either geographically or because they are uninsured or underinsured. One example where this program has been put into action is the Smoky Mountain Medical Mission partnered with the Swain County Health Department to bring free services to the people of Western North Carolina.

## Recommendations

1. **The U.S. Chamber of Commerce and the National Association of County and City Health Officials (NACCHO) should facilitate matchmaking of their respective local affiliates in rural Appalachia.** The business and public health communities have a tremendous opportunity to combine forces to improve local health outcomes in Appalachia.

Many employers recognize that employer wellness programs in combination with local policies that support healthy communities can promote a healthy workforce and labor pool. By joining forces with local public health departments, local chambers of commerce can play an important role in facilitating employee health and worker productivity.

Local chambers and public health departments should find ways to collaborate, focusing first and foremost on chronic disease prevention and opioid addiction prevention given the impact of these problems on public health and worker productivity. Together, they should also simultaneously work with local elected officials to support policies (e.g., smoke-free legislation) that promote healthy communities.

2. **Direct federal agencies to take action needed to expand and require opioid training for health care professionals.** Based on the latest data from the Centers for Disease Control and Prevention (CDC), too many opioid prescriptions are being issued for too many days at too high a dose. Many rural Appalachian counties have the highest amount of opioids prescribed per person in the country. Task force members expressed an urgent need to increase training of health care professionals in the science of addiction and proper opioid prescribing.

New efforts must include partnering with health professional organizations and insurers as well as working with community colleges to begin meeting the addiction workforce needs in the community. While some states (KY, WV, NC) have laws requiring a form of training for prescribers in proper opioid prescribing, Congress should consider whether all holders of a Drug Enforcement Administration (DEA) controlled substance license should take a course in proper opioid prescribing and treating substance use disorders. Medical specialty societies can design customized training to meet the requirement according to the unique needs of each specialty. The Food and Drug Administration (FDA) should also consider adding such training requirements to a Risk Evaluation and Mitigation Strategy (REMS) for any newly approved opioids.

In addition, the federal government can further support health professional training by funding the Substance Abuse and Mental Health Services Administration (SAMHSA)'s Screening, Brief Intervention and Referral to Treatment (SBIRT) grant program. SBIRT funds support residency programs and state cooperative agreements that support early intervention and treatment for people with or at risk of developing substance use disorders.

With the opioid epidemic, there is a growing need for behavioral health care professionals to address the needs of the increasing number of individuals needing treatment for substance use disorders. A report released by HHS in 2016 found that there are currently shortages for behavioral health practitioners. These shortages include counselors, psychiatrists, and other behavioral health professionals. In addition, as the field of addiction treatment has changed, there are additional opportunities for community colleges to train people to provide recovery supports.

## Addiction Recovery Care Clinics

Addiction Recovery Care, LLC operates a network of state-licensed drug and alcohol abuse treatment centers in Kentucky. Founded in 2010, the network has since expanded to include nine residential centers and four outpatient centers spread throughout the eastern part of the state. Addiction Recovery Care, nationally accredited by the Commission on Accreditation of Rehabilitation Facilities (CARF) offers a holistic approach to treating substance use disorders, incorporating clinical and medical treatments, spiritual and mental health engagement, and vocational training into the recovery process. Over the past two years, the centers have had over 2,000 admissions, reflecting some of the unique challenges that this region currently faces with substance use disorders. Kentucky was the first Appalachian state to allow Medicaid reimbursements for all levels of addiction treatment, which has enabled Addiction Recovery Care to expand its reach, both geographically and with typically underserved populations. Part of the success of the program rests on its intensive, multi-phase intervention strategy. Phase One involves a supervised detox period, which varies in length based on the needs of the patient, and development of a personalized recovery plan. Phase Two includes case management services to help ease the patient back into work or school, as well as peer support and counseling. Phase Three includes an internship and vocational training program, which results in a certificate in Health and Human Services from Sullivan University that can be rolled into either an associate's or bachelor's program at the university. This phase also includes first aid training, so that upon completion the patient is eligible to act as an addiction treatment specialist at any of Addiction Recovery Care's clinics. Data show that job training for those recovering from substance use disorders offers some of the best returns on investment of any treatment models. The Addiction Recovery Care model should be explored in other areas of Appalachia to help expand access to treatment as need for these services grows

- 3. Improve nutrition in rural Appalachia through evidence-based policies and programs such as the Diabetes Prevention Program.** Local elected officials should consider implementing evidence-based policies that promote the availability of affordable healthy food and beverages and that support healthy food and beverage choices. For example, this may include improving the geographic availability of supermarkets, implementing farm-to-school programs, and providing incentives for the production, distribution, and procurement of foods from local farms.

In conjunction with the CDC's Appalachian Diabetes Control and Translation Project, efforts to scale the Diabetes Prevention Program in as many rural Appalachian counties as possible should be considered, especially those with already measurable results.<sup>17</sup> Private and public payer support to finance these programs and provider referrals to these programs are both critical. In addition, online diabetes prevention programs should be promoted to serve hard-to-reach populations in rural Appalachia.

In light of high Supplemental Nutrition Assistance Program (SNAP) and Medicaid participation rates in many parts of Appalachia and the crucial role that nutrition plays in driving chronic disease rates and health care costs, states should also promote coordination across SNAP, Medicaid, and other social programs to provide high-quality nutrition education to program participants. Congress should look to maximize the nutritional impact of SNAP-Ed when considering reauthorization of the Farm Bill in early 2018.

Many communities, especially low-income communities, lack retail outlets for healthy, affordable foods. These “food deserts” can occur in urban, rural, and tribal communities, but there are particular challenges with sourcing healthy options to rural areas, like those in Appalachia. The Healthy Food Financing Initiative (HFFI) brings together resources from HHS, USDA, and the Treasury Department to offer grants, loans, and promotion programs to facilitate access to grocery stores, farmers markets, and other sources of nutrition, while creating job and business development opportunities in low-income areas. Continued federal support for initiatives like HFFI can help communities in need sustain healthy and active lives, which can help prevent high levels of obesity and related chronic diseases.

- 4. Local and state officials should consider policies and initiatives that promote lifelong dental hygiene, including among children and the elderly.** There is a great need to ensure that children see a dentist within the first few years of life. Dental and pediatric professional societies regionally should come together to launch a public awareness campaign so that parents understand the importance of maintaining proper oral health for their children. School-based oral health services should be supported in every school district in the region. Localities and states in the region should also consider policies that encourage a dental examination for children prior to them being allowed to start pre-K/Kindergarten.

According to the CDC, some 67 percent of West Virginians over the age of 65 have lost six or more teeth due to decay or gum disease. It is imperative that low-income uninsured and underinsured residents in rural Appalachia have access to oral health resources and services. Regional foundations should take the lead in organizing a regional summit focused on the integration of oral health into primary care. Promising models include co-locating oral health services in community health centers.



**5. Support telemedicine as well as efforts to stretch the health professional workforce in innovative ways.**

Telemedicine offers great promise for remotely providing high-quality healthcare to patients, particularly in rural areas with health professional shortages. Though increasing access to broadband will not solve all the health issues in the region, regional healthcare leaders should explore ways through which telemedicine access could benefit particular populations or address particular challenges, such as teleconsultation for local doctors (e.g., Project ECHO) or offering mental health services remotely. This will also involve examining provider licensing challenges across state lines.

Congress should discuss how best to expand evidence-based telehealth and remote patient monitoring services for Medicare beneficiaries. Of the more than \$600 billion in Medicare spending in 2014, reimbursements for telehealth were less than \$14 million.

One additional opportunity is to support pharmacists in rural Appalachia to function as primary care extenders, particularly with respect to opioid abuse prevention and chronic disease prevention. Of all health professionals, pharmacists are often the most accessible to the public given their co-location in supermarkets and shopping plazas; thus, enlisting pharmacists in efforts to provide more public health education could be very effective.

# Conclusion



Despite the challenges it faces, Appalachia's economic potential is enormous. If given the needed tools and resources, the region can become a case study for what can happen with the right combination of federal support, state and local coordination, and partnerships with businesses and academic institutions. For that to occur, stakeholders must realize the interconnectedness of the issues facing Appalachia and identify solutions that take into account the unique characteristics of its geography, history, and people. For example, a one-size-fits-all policy to address workforce development will not be successful in Appalachia if not done in conjunction with a plan to improve the health and wellness of the citizens who make up that workforce. Rather, new policies to tackle the myriad of issues facing Appalachia should meet the unique needs of the various communities in the region, and rely on the input of the region's leaders.

# Endnotes

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