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MINORITIES, MOBILE BROADBAND AND THE MANAGEMENT OF CHRONIC DISEASES

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PREFACE

The Joint Center for Political and Economic Studies is pleased to share an important new report, "Minorities, Mobile Broadband, and the Management of Chronic Diseases," prepared by the Joint Center Media and Technology Institute and the Health Policy Institute with support from the UnitedHealth Group Foundation. This report considers the vast potential of mobile broadband technologies to help address some of the nation's most pressing health concerns, and therefore is relevant and timely for policymakers' consideration as the federal government implements the Affordable Care Act.

Chronic diseases disproportionately burden many communities of color. African Americans, Hispanics, American Indians, Asian Americans and Pacific Islanders generally face higher morbidity and mortality than whites across a range of chronic diseases such as asthma, arthritis, cardiovascular disease, cancer and diabetes. At the same time, many minorities face geographic, financial, cultural and linguistic barriers to accessing high quality primary and preventive health care, as well as to specialty treatment. Given the growing proportion of people of color in the U.S. population, it is especially important that we find new ways to help prevent and manage chronic diseases in minority communities.

Fortunately, new approaches to prevention, treatment and disease management are already being implemented in ways that offer great promise for tailoring efforts to meet the needs of the country's most vulnerable populations. One set of strategies harnesses the proliferation of mobile broadband technologies, telemedicine and online health applications to help communities of color – and the health professionals who serve them – access information and tools that can help them more effectively prevent, diagnose and manage disease.

To explore the potential for mobile broadband to reduce the burden of chronic disease in communities of color, the Joint Center convened leaders from the government, health care, technology and health policy sectors for a roundtable discussion. Chaired by UnitedHealth Group Executive Vice President and Chief of Medical Affairs Dr. Reed Tuckson, the roundtable met April 25, 2011 at the Joint Center to hear presentations and develop a set of ideas and strategies to advance mobile broadband tools to help close the chronic disease gap. This report summarizes the key issues that were raised and the outcomes of the discussion.

It should be noted that mobile broadband and digital health applications do not by themselves represent a panacea for the health inequities that afflict our society. As recognized by the participants in the roundtable discussion, some communities still face significant barriers to accessing mobile technologies, although these gaps are closing as demand increases and as broadband providers strive to serve new markets. What is clear, however, is that these innovations are vitally important and needed as part of a comprehensive strategy to reduce and eventually eliminate health inequities. Should the nation fail to ensure that communities of color have sufficient access to these technologies, however, we face the risk of widening the existing health and health care gaps.

I hope that this report is helpful as we consider strategies to more effectively use our nation's vast resources and technological skills to address our most pressing needs.

INTRODUCTION

Chronic diseases disproportionately burden communities of color. African Americans, Hispanics, American Indians, Asian Americans, Pacific Islanders and other people of color face higher morbidity and mortality than whites for a range of chronic diseases such as asthma, arthritis, cardiovascular disease, cancer and diabetes. At the same time, many members of these populations face geographic, financial, cultural and linguistic barriers to accessing high quality primary and preventive care, as well as to specialty treatment. Given the growing proportion of people of color in the U.S. population, it is imperative to harness new strategies and tools to help prevent and manage chronic diseases in minority communities.

Fortunately, new approaches to prevention, treatment and disease management are being implemented in ways that offer great promise for tailoring efforts to meet the needs of the country's most vulnerable populations. One set of strategies harnesses the proliferation of mobile broadband technologies, telemedicine and health applications to help communities of color – and the health professionals that serve them – access information and tools that can help them more effectively prevent, diagnose and manage disease. To explore the potential for mobile broadband to reduce the burden of chronic disease in communities of color, the Joint Center for Political and Economic Studies' Media and Technology Institute and its Health Policy Institute convened leaders from the government, health care, technology and health policy sectors for a roundtable discussion. Chaired by UnitedHealth Group Executive Vice President and Chief of Medical Affairs Dr. Reed Tuckson, the roundtable[1] met on April 25, 2011 at the Joint Center to hear presentations and develop a set of ideas and strategies to advance mobile broadband tools to help close the chronic disease gap. This report summarizes the key issues that were raised and the outcomes of the discussion.

It should be noted that mobile broadband and digital health applications do not by themselves represent a panacea for the health inequities that afflict our society. As recognized by the participants in the roundtable discussion, some communities still face significant barriers to accessing mobile technologies, although these gaps are closing as demand increases and as broadband providers strive to serve new markets.[2] What is clear, however, is that these innovations are vitally important and needed as part of a comprehensive strategy to reduce and eventually eliminate health inequities. Should the nation fail to ensure that communities of color have sufficient access to these technologies, however, we face the risk of widening the health and health care gap experienced by many communities of color.

THE COST OF CHRONIC DISEASE

Chronic diseases such as diabetes, heart disease, cancer, arthritis and obesity significantly tax the American health care system and the millions of people they affect. According to the latest United States Centers for Disease Control and Prevention (CDC) statistics, each year seven out of ten Americans die from illnesses related to chronic disease,[3] with heart disease, cancer and stroke accounting for more than 50% of all deaths in the United States.[4] These chronic illnesses also greatly exacerbate the rise in medical costs. Of approximately $2.2 trillion spent on health care in the United States in 2007, more than $1.7 trillion was spent on treating chronic illnesses.[5]

African Americans and other people of color are more susceptible to chronic illnesses than non-minorities. According to the CDC's Office of Minority Health and Health Disparities (OMHD), chronic diseases are among the leading causes of early death among African Americans. Heart disease ranks as the number one killer of African Americans, followed by diabetes (#5), kidney disease (#7), and lower respiratory disease (#8).[6] African American adults are also 1.9 times more likely than whites to be diagnosed with diabetes.[7] Between 2008 and 2009, 19.9% of African Americans suffered from diabetes, compared to 9.2% of whites.[8] During that same year, 6.7%

1 A list of participants is included in Appendix A.

2 Li, Ying, Nicol Turner-Lee, Samir Gambhir, and Mikyung Baek, *Does Place Really Matter? Broadband Availability, Race, and Income* (Washington, DC: The Joint Center for Political and Economic Studies, 2011), http://www.jointcenter.org/sites/default/files/upload/research/files/JCPES%20Mapping%20Paper.pdf (accessed January 26, 2012).

3 National Center for Chronic Disease Prevention and Health Promotion, *The Power of Prevention: Chronic Disease, the Public Health Challenge of the 21st Century* (Atlanta, GA: Centers for Disease Control and Prevention, 2009), http://www.cdc.gov/chronicdisease/pdf/2009-Power-of-Prevention.pdf (accessed January 26, 2012).

4 Hsiang-Ching Kung, et al., "Deaths: Final Data for 2005," *National Vital Statistics Reports* 56, no.10 (2008), http://www.cdc.gov/nchs/data/nvsr/nvsr56/nvsr56_10.pdf (accessed January 26, 2012).

5 Partnership to Fight Chronic Disease, *2009 Almanac of Chronic Diseases: Executive Summary*, (Washington, DC: Partnership to Fight Chronic Disease, 2009), http://www.fightchronicdisease.org/sites/default/files/docs/PFCDAlmanac_ExecSum_updated81009.pdf (accessed November 30, 2011).

6 Office of Minority Health and Health Disparities, "Black or African American Populations," Center for Disease Control and Prevention, http://www.cdc.gov/omhd/Populations/BAA/BAA.htm (accessed October 7, 2011).

7 National Center for Chronic Disease Prevention and Health Promotion, *Reach U.S.: Finding Solutions to Health Disparities, At a Glance 2010*, (Atlanta, GA: Centers for Disease Control and Prevention, 2010), http://www.cdc.gov/chronicdisease/resources/publications/aag/pdf/2010/REACH-AAG.pdf (accessed October 7, 2011).

8 National Center for Health Statistics, *Health, United States, 2010, with Special Feature on Death and Dying*, (Hyattsville, MD: United States Department of Health and Human Services, 2011), http://www.cdc.gov/nchs/data/hus/hus10.pdf (accessed October 7, 2011).

of African American adults reported having heart disease, compared to 6.5% of whites.[9]

These diseases, coupled with sub-optimal access to preventive, primary and specialty care, place people of color at a greater risk of death as a result of these conditions. For example, a higher rate of hypertension among African American adults often compounds their already higher instances of heart disease. According to the CDC, 39% of African American men and 44% of African American women 20 years of age and older have hypertension, with 27% of them being less likely than whites to have their blood pressure controlled.[10]

These higher rates of susceptibility to chronic illnesses are the result of many complex and interacting factors. Residential racial segregation, still persistently high in most U.S. cities, results in an inequitable distribution of health risks and resources, and this both directly and indirectly shapes health outcomes. Segregated communities of color are more likely to feature high concentrations of fast-food restaurants, tobacco and alcohol vendors, as well as a higher saturation of advertising of unhealthy products. They are less likely than majority white communities to have access to grocery stores or supermarkets that sell fresh fruits and vegetables. Many of these same communities lack geographic access to safe parks and recreational facilities, and as a result their residents find it harder to maintain active lifestyles. People of color are also more likely than whites to lack information about obtaining and maintaining consistent preventative care, and they are less likely to have financial and geographic access to medical doctors, including specialists. To be sure, the nation's fragmented healthcare delivery system frustrates effective chronic disease management.[11]

THE POTENTIAL OF MOBILE HEALTH TECHNOLOGY

All participants in the Joint Center's roundtable discussion agreed that mobile technology can play a role in the effective management of chronic conditions. Patients' access to handheld devices, such as smartphones and tablets, and their associated health applications can enhance doctor-patient communication and enable patients to more effectively focus on their well-being.

Participants in the roundtable articulated two major arguments for why health care providers, insurance carriers, and other stakeholders should expand utilization of mobile platforms and go the extra mile to promote the use of mobile devices and applications in underserved communities. First, mobile devices, telemedicine and health applications can bolster preventive and follow-up care for minority mobile users, thereby improving their health outcomes. Second, mobile technology has the potential to reduce administrative expenses and inefficiencies that contribute to rising healthcare costs and reduce access to affordable care. In effect, by increasing the ability of some people to manage their own care on an outpatient basis, doctors and hospitals will have more opportunities to devote their time and energies to serving patients with more urgent needs.

Mobile Broadband and People of Color

Currently, mobile broadband has redefined the Internet and how we engage with it. As of 2010, 59% of all adult Americans go online wirelessly[12] – that is, they access the Internet with a laptop using a wi-fi connection or mobile broadband card, or they do it via cell phone– an increase over the 51% reported the previous year.[13] Further, a recent Joint Center study found that people of color lead the way in mobile access, especially using handheld devices.[14] It said "nearly two-thirds of African Americans (64%) and Latinos (63%) are wireless Internet users, and minority Americans are significantly more likely to own a cell phone than their white counterparts (87% of blacks and Hispanics own a cell phone, compared to 80% of whites)."[15]

African American and Latino cell phone owners are also more likely to take advantage of the data functions of handheld devices. As shown in Table 1, both African American and Latino populations reported at least five data functions that they engage in with their mobile devices, with the sending and receiving of text messages as their primary data activity.

9 Office of Minority Health, "Heart Disease and African Americans," United States Department of Health and Human Services, http://minorityhealth.hhs.gov/templates/content.aspx?ID=3018 (accessed December 2, 2011).

10 OHMD, "Black or African American Populations, http://www.cdc.gov/omhd/Populations/BAA/BAA.htm.

11 Jane Sarasohn-Kahn, *Participatory Health: Online and Mobile Tools Help Chronically Ill Manage Their Care*, (Oakland, CA: California HealthCare Foundation, 2009), http://www.chcf.org/~/media/MEDIA%20LIBRARY%20Files/PDF/P/PDF%20ParticipatoryHealthTools.pdf (accessed October 7, 2011).

12 Aaron Smith, *Mobile Access 2010*, (Washington, DC: Pew Internet and American Life Project, 2010), http://www.pewinternet.org/Reports/2010/Mobile-Access-2010/Summary-of-Findings.aspx (accessed November 28, 2011).

13 Ibid.

14 Jon P. Gant, et al., *National Minority Broadband Adoption: Comparative Trends in Adoption, Acceptance and Use*, (Washington, DC: The Joint Center for Political and Economic Studies, 2010), http://www.jointcenter.org/sites/default/files/upload/research/files/MTI_BROADBAND_REPORT_WEB.pdf (accessed January 26, 2012).

15 Smith, *Mobile Access*, 2010.

TABLE 1: AFRICAN AMERICANS AND LATINOS LEAD WHITES IN THEIR USE OF MOBILE DATA APPLICATIONS

	All adults	White, non-Hispanic	Black, non-Hispanic	Hispanic (English-speaking)
Own a cell phone	82%	80%	87%	87%
% of cell owners within each group who do the following on their phones				
Take a picture	76	75	76	83*
Send/receive text messages	72	68	79*	83*
Access the internet	38	33	46*	51*
Send/receive email	34	30	41*	47*
Play a game	34	29	51*	46*
Record a video	34	29	48*	45*
Play music	33	26	52*	49*
Send/receive instant messages	30	23	44*	49*
Use a social networking site	23	19	33*	36*
Watch a video	20	15	27*	33*
Post a photo or video online	15	13	20*	25*
Purchase a product	11	10	13	18
Use a status update service	10	8	13	15
Mean number of cell activities	**4.3**	**3.8**	**5.4**	**5.8**

Source: Pew Research Center's Internet & American Life Project, April 29 - May 30, 2010 Tracking Survey.

N= 2,252 adults 18 and older, including 1,917 cell phone users
*= statistically significant difference compared with whites

Data collected from the California HealthCare Foundation found that "89% of people with mobile Internet seek health information online compared to 40% of consumers with a wired connection."[16] Among minorities, African American cell phone owners (15%) are more likely than whites (7%) and Latinos (11%) to use these mobile health applications (such as those outlined below).[17] Additionally, 25% of African-American cell phone owners have looked up health information on their phone, compared to 15% of whites and 19% of Latinos.[18]

Ownership of smartphone devices has also increased among African Americans and Latinos. More than 40% of both groups report device ownership. These statistics represent good news for communities of color, as more than 25,000 health applications are available on the Apple iPhone[19] and more than 12,000 on the Android system.[20] Remote monitoring via mobile applications has the ability to help doctors keep better tabs on patients. Diabetes management, for example, is simplified with applications such as WellDoc's *DiabetesManager*, which provide patients with reminders to check their blood glucose levels, take medications, conduct other health-related tasks and send the information back to the doctor for monitoring.

16 Sarasohn-Kahn, *Participatory Health*, 2009.

17 Susannah Fox, *Mobile Health 2010* (Washington, DC: Pew Internet and American Life Project, 2010), http://www.pewinternet.org/~/media//Files/Reports/2010/PIP_Mobile_Health_2010.pdf (accessed January 26, 2010).

18 Ibid.

19 148Apps, "App Store Metrics," 148Apps.biz, http://148apps.biz/app-store-metrics/?mpage=catcount (accessed January 26, 2012).

20 AppBrain, "Top Categories on the Android Market," AppBrain.com, http://www.appbrain.com/stats/android-market-app-categories (accessed January 26, 2012).

Innovative Mobile Resources

Roundtable participants noted that many other applications empower patients to manage their own healthcare and doctors to reduce administrative costs and provide quality, personalized care to their patients. Among these, *Mobile MIM* is a remote diagnostic imaging tool that doctors can use to evaluate and manage imaging scans more effectively than other methods, which can be cumbersome and extraordinarily time consuming. Vocel's *Pill Phone* is a Food and Drug Administration (FDA)-approved app that allows patients to view information on and manage their medications. *Quick MT* puts medical terminology in the palm of patients' hands, with programs that send SMS text reminders to patients for medication fulfillment or blood screen counts that are designed to ensure that patients follow the doctor's regimen for managing their condition. These applications, among many others, provide a variety of services to doctors and patients.

Challenges of Mobile Broadband

While these technologies have a great deal of potential, several barriers prevent more widespread use of them, roundtable participants noted. With the increasing demand for mobile devices and services, experts have urged the telecommunications industry to invest in the infrastructure that will be necessary to support this growth. According to a recent Deloitte report, the ability of the United States to compete globally is incumbent upon sustained investment in 4G networks.[21]

A lack of available spectrum has also made the full deployment of 4G generally difficult. The wireless company Lightsquared, for example, has faced serious challenges to its ability to deploy 4G networks due to potential interference with adjacent GPS spectrum.[22] It is often difficult for wireless providers to balance environmental constraints against the needs of the network, especially in urban areas densely populated by minorities. Infrastructure investments in backhaul networks to accommodate 4G technology are also very costly.

On the consumption side, digital literacy and basic math and science skills are important not just in the context of consumers attempting to use devices and apps, but also in terms of their ability to evaluate their own health data. For consumers who lack know-how in any of these areas, the ramp up to using mobile devices effectively for life-enhancing purposes is severely inhibited.

Finally, more mobile health applications are geared towards improving disease management than enhancing health education. Because many people of color face an array of geographic and financial barriers to accessing health care – including barriers imposed by lower levels of access to personal transportation, insufficient primary care resources in minority communities and inadequate public transportation – mobile applications have great potential to help close healthcare access gaps. Moreover, the ability of mobile applications to offer patients instructions on dosages and dietary changes is empowering, especially for people who tend to avoid asking questions during doctor's visits.[23]

While disease management applications enable patients to manage their illnesses following a diagnosis, mobile applications can also assist patients and their caregivers in preventing illnesses. An SMS text application called *Text4Baby* is used nationally for promoting pre-natal care among underserved women to reduce premature births and infant deaths. Founded by Johnson and Johnson Company, *Text4Baby* is used to text patients timely reminders for pre-natal doctor visits and informational alerts during a pregnancy. This free service is simple to use and is widely accessible by expectant mothers with only a basic cell phone.

POLICY RECOMMENDATIONS

In the end, roundtable participants pointed to the need for a more unified and mobile health care delivery system that reduces disparities and fragmentation of care. At the heart of this debate is the importance of community engagement and empowerment. When people feel that they are contributing to the solution, they are more likely to adopt it for themselves. While national experimentation on how to increase the use of mobile broadband by low-income populations is one strategy, public policy must also be reformed to accommodate the trend toward mobile healthcare management. To create

21 Deloitte, *The Impact of 4G Technology on Commercial Interactions, Economic Growth, and U.S. Competitiveness*, (New York, NY: Deloitte, 2011), http://www.deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/TMT_us_tmt/us_tmt_impactof4g_081911.pdf (accessed November 16, 2011).

22 Fred Hoot, "Lightsquared Has Large Problems with Deploying its 4G LTE Network," Broadband Expert, http://www.broadbandexpert.com/blog/wireless-carriers/lightsquared-has-large-problems-with-deploying-their-4g-lte-network/ (accessed November 16, 2011).

23 Michael Christopher Gibbons, "Use of Health Information Technology among Racial and Ethnic Underserved Communities," *Perspectives in Health Information Management* (Winter 2011), http://perspectives.ahima.org/index.php?option=com_content&view=article&id=206:use-of-health-information-technology-among-racial-and-ethnic-underserved-communities&catid=63:telehealth (accessed January 26, 2012).

an environment where mobile broadband enables health applications, it becomes important to:

- **Expand the Availability of Primary Care Physicians (PCPs) in Unserved and Underserved areas.** PCPs are a vital link in the emerging mobile device healthcare delivery chain. Any attainable benefits from increased access to mobile and digital health devices, goods, and services would be negated without PCPs available to facilitate the desired outcomes. Not only would PCPs be instrumental in providing diagnosis and treatment, these doctors would reinforce and support the value of mobile healthcare by recommending and reviewing health content for appropriateness and intervening when clinical signs are out of range or if a condition worsens. Yet the residents of inner-city and rural areas and the uninsured that would most benefit from mobile health technology disproportionately lack sufficient access to PCPs.[24] Thus, despite any increased penetration of mobile healthcare platforms in unserved and underserved communities, the accompanying ramifications would be significantly less likely to materialize without PCPs.

- **Ensure universal access to mobile broadband for households in both unserved and underserved areas.** The Federal Communications Commission (FCC) has created the Connect America Fund—a $4.5 billion annual fund to subsidize the build out of high speed Internet infrastructure to 18 million unserved Americans.[25] In addition, the FCC also committed to a one-time support investment of $300 million for a "Mobility Fund," which will facilitate the build out of 3G wireless infrastructure in unserved, especially rural, areas (Mobility Fund Phase I). The FCC also committed to ongoing support to maintain such mobile networks, but sought further comment on the details of this ongoing support (Mobility Fund Phase II). Stakeholders should urge the FCC to act expeditiously to determine the details of Phase II of the Mobility Fund and to report on the state of wireless broadband in urban areas. The Mobility Fund will greatly increase the ability of many Americans, especially those living in remote, rural areas, to use broadband to access health services from distant medical centers. It is equally important for the FCC to find ways to subsidize remaining wireline and wireless infrastructure investments in areas without an attractive business case for broadband.

- **Reform regulatory barriers that limit the use of non-traditional medical treatment.** Well-intended privacy and conflicting state and federal regulations may have the unintended consequence of preventing innovation in personalized healthcare.[26] Congress should seek to strike a more appropriate balance between the need to protect personal health data and the need to ensure that innovation continues to flourish.[27] For example, the appropriate and necessary Health Insurance Portability and Accountability Act (HIPAA) rules requiring medical information to be kept confidential and the Genetic Information Non-Discrimination Act preventing the use of genetic information to deny coverage should not be over applied to frustrate the use of disaggregated information that could facilitate the appropriate use of important health data. State and federal laws in this area should also be better integrated in this regard.[28]

- **Create incentives for physicians to use mobile broadband-enabled technologies for current and preventative care.** Federally-created incentives and improvements such as tax credits, reimbursements for physicians who effectively implement mobile health technology and integrating mobile health solutions into the Medicare and Medicaid reimbursement framework would motivate broader implementation of personalized health service and supplement available medical care for patients who are most in need of affordable healthcare. Additionally, as has been astutely observed, "Changes in the underlying traditional systems and modes of behavior will require

24 Ginger R. Ruddy, et al., "The Family Physician Workforce: The Special Case of Rural Populations," *American Family Physician* 72, no. 1 (2005), cited in Esme Cullen, et al., "Primary Care Shortage," KaiserEDU, http://www.kaiseredu.org/Issue-Modules/Primary-Care-Shortage/Background-Brief.aspx (accessed January 26, 2012) and *See* National Association of Community Health Centers and the Robert Graham Center, *Access Denied: A Look at America's Medically Disenfranchised* (Washington, DC: National Association of Community Health Centers and the Robert Graham Center, 2007), cited in Esme Cullen, et al., "Primary Care Shortage," KaiserEDU, http://www.kaiseredu.org/Issue-Modules/Primary-Care-Shortage/Background-Brief.aspx (accessed January 26, 2012).

25 Federal Communications Commission, *Report and Order and Further Notice of Proposed Rulemaking In the Matter of Connect America Fund, etc.*, FCC 11-161 (November 18, 2011), http://www.fcc.gov/document/fcc-releases-connect-america-fund-order-reforms-usficc-broadband (accessed January 26, 2012).

26 Darrell M. West, *Enabling Personalized Medicine through Health Information Technology* (Washington, DC: The Brookings Institution, 2011), http://www.brookings.edu/~/media/Files/rc/papers/2011/0128_personalized_medicine_west/0128_personalized_medicine_west.pdf (accessed December 1, 2011).

27 Ibid.

28 Ibid.

reconsideration of the rules and procedures that reinforce them."[29] This is especially relevant to how patients can appropriately take advantage of new remote access to physicians via technologies such as home computer cameras coupled with broadband capabilities. It will be important for physicians and their organizations to be open to the appropriate use of these tools and not stifle them.

- **Promote the meaningful use requirements for Electronic Health Records (EHRs) established by the American Recovery and Reinvestment Act of 2009 (ARRA).** The federal government should raise awareness of the incentives available for providers who use Electronic Health Records in a "meaningful way," as described in the ARRA and advance those criteria as rapidly as possible.[30]

- **Promote standards in the Meaningful Use program to require EHRs support patient access to their medical information.** As discussed above,[31] minorities access information on the Internet via a wireless device more often than non-minorities. Therefore, promoting patient health record (PHR) solutions that are supported by mobile devices and apps is important for minority health and will likely gain traction if it is supported by standards in the Meaningful Use program.

- **Avoid excessive and regressive taxation on wireless goods and services.** The Wireless Tax Fairness Act of 2011 (H.R. 1002 and S. 543)("WTFA")[32] [33] and the Digital Goods and Services Tax Fairness Act of 2011 (H.R. 1860 and S. 971)("DGSTFA")[34] [35] would exact a disproportionate toll on communities of color.[36] The FDA's current effort to classify mobile medical applications as medical devices under 21 U.S.C. §321(h)[37] would similarly harm minority consumers by making these applications subject to the medical device taxation provision in the Patient Protection and Affordable Care Act (PPACA).[38] Taxing the cost of mobile applications, including medical applications, would raise prices and therefore discourage consumers from using these life-enhancing tools.[39] Such a regressive tax system should be reassessed and reforms should be implemented that encourage, rather than burden, the poor when they pay for wireless service or use mobile health applications.

- **Promote consumer education and awareness.** Consumers must be educated to understand how the use of technology will support their recovery or maintain their good health. Policy makers and practitioners can use the power of mobile technology with its ability to reach people anytime and anyplace to encourage patients to change or eliminate risky behaviors and take an active role in their own preventative care. Text messaging campaigns aimed at smoking cessation programs and healthy diet programs can help communities that are disproportionately impacted by chronic illnesses.

29 Berwick, Donald M, "A User's Manual for the IOM's 'Quality Chasm' Report," *Health Affairs* 23, no.3 (2002), http://content.healthaffairs.org/content/21/3/80.full.pdf (accessed January 26, 2012).

30 Centers for Medicare and Medicaid Services "CMS HER Meaningful Use Overview,"CMS.gov, https://www.cms.gov/ehrincentiveprograms/30_Meaningful_Use.asp#BOOKMARK1 (accessed December 1, 2011).

31 Smith, *Mobile Access*, 2010.

32 Congress, House, *Wireless Tax Fairness Act of 2011*, 112th Cong., 1st sess., H.R. 1002 (1 November 2011), http://www.gpo.gov/fdsys/pkg/BILLS-112hr1002eh/pdf/BILLS-112hr1002eh.pdf (accessed January 26, 2012).

33 Congress, Senate, *Wireless Tax Fairness Act of 2011*, 112th Cong., 1st sess., S. 543 (10 March 2011), http://thomas.loc.gov/cgi-bin/query/z?c112:S.543.IS (accessed January 26, 2012).

34 Congress, House, *Digital Goods and Services Tax Fairness Act of* 2011, 112th Cong., 1st sess., H.R. 1860 (May 12, 2011), http://thomas.loc.gov/cgi-bin/query/z?c112:H.R.1860 (accessed January 26, 2012).

35 Congress, Senate, *Digital Goods and Services Tax Fairness Act of 2011*, 112th Cong., 1st sess., S. 971 (May 12, 2011), http://thomas.loc.gov/cgi-bin/query/z?c112:S.971 (accessed January 26, 2012).

36 Nicol Turner-Lee and Joseph Miller, *The Social Cost of Wireless Taxation: Wireless Taxation and its Consequences for Minorities and the Poor* (Washington, DC: Joint Center for Political and Economic Studies, 2011), http://www.jointcenter.org/sites/default/files/upload/research/files/The%20Social%20Cost%20of%20Wireless%20Taxation.pdf (accessed January 26, 2012).

37 *Federal Food, Drug, and Cosmetic Act*, *U.S. Code*, Vol. 29, sec. 321(h), http://www.gpo.gov/fdsys/browse/collectionUScode.action?selectedYearFrom=2010&page.go=Go (accessed January 26, 2012), cited in Food and Drug Administration, *Draft Guidelines for Food and Drug Administration Staff: Mobile Medical Applications* (Rockville, MD: United States Department of Health and Human Services, 2011), http://www.fda.gov/downloads/MedicalDevices/DeviceRegulationandGuidance/GuidanceDocuments/UCM263366.pdf (accessed January 18, 2012).

38 *Patient Protection and Affordable Care Act of 2010*, Public Law 111-148, 124 Stat. 119 (2010), http://www.gpo.gov/fdsys/pkg/PLAW-111publ148/pdf/PLAW-111publ148.pdf (accessed January 26, 2012).

39 Centers for Medicare and Medicaid Services "CMS HER Meaningful Use Overview"

CONCLUSION

Traditional practices for caring for the chronically ill have relied upon in-person contact between patients and their doctors. In communities with quality medical care, the regular interaction of patients has extended life term and eased the pain of living with an affliction. Mobile broadband clearly offers compelling solutions for helping people with chronic illnesses manage their diseases and offering guidance on how to stave off lifestyles and routines that contribute to them.

For mobile broadband to be effective in this regard, policymakers must institute the right conditions for users, especially those that rely upon the medium to access the Internet and to connect care providers so as to address access concerns. Providing additional bandwidth to run robust mobile applications, offering devices to low-income people for the sole purpose of health care and maintenance, and ensuring that chronically ill people can purchase smarter devices can create an ecosystem where mobile technology can provide enormous boost in the quality care that people of color receive.

ABOUT THE AUTHORS

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Nicol Turner-Lee is Vice President and the first Director of the Media and Technology Institute for the Joint Center for Political and Economic Studies, a 41 year old public policy institute focused on issues of concern to African Americans and other people of color. The Media and Technology Institute was established in 2008 to study how broadband, the media industry, and emerging communications technologies can become avenues of advancement for vulnerable groups. In her first year at the Joint Center, Dr. Turner-Lee created the first "National Minority Broadband Adoption Study" that has been cited by government, industry, and community based organizations interested in understanding minority Internet use. Most notably, the study was cited in the Federal Communications Commission's congressionally mandated National Broadband Plan, and the FCC's subsequent report detailing the information needs of communities.

Prior to this, Dr. Turner-Lee was an executive at One Economy Corporation - a global nonprofit that uses the power of technology and information to expand opportunities for low-income people – serving most recently as Senior Vice President for External Affairs in charge of public relations, national strategic partnerships, and business development.

The City of Chicago appointed Dr. Turner-Lee to a citywide wireless task force in 2006. In 2007, *Broadband Properties Magazine* named her to its list of the "Top 10 National Broadband Promoters." In 2011, she was appointed to the Federal Advisory Committee on Diversity in the Digital Age by the Chairman of the Federal Communications Commission. She was also honored in 2011 by the Alliance for Women in Media as one of their 60 most inspiring women in media. Earlier this year, Dr. Nicol Turner Lee was selected by Time Warner Cable as one of four participants in their signature Digital Research Program. Her research, "Evaluating Minority Attitudes Toward Digital Privacy and Security," will focus on minority communities and understanding their digital privacy and security needs and concerns, as well as policy recommendations to address these issues.

Dr. Turner-Lee serves on the board of the Community Renewal Society, Minority Media and Telecommunications Council (MMTC), Telecommunications and Policy Research Conference (TPRC), and, most recently, the Alliance for Women in Media (AWM). Dr. Turner-Lee is a former Research Fellow with Northwestern University's Asset-Based Community Development Institute, a former Ford Foundation Rockwood Leadership Fellow, and has served as adjunct faculty at Northwestern and North Park Universities.

She graduated with honors from Colgate University, has a doctorate in Sociology from Northwestern University, and a Certificate in Nonprofit Management from the University of Illinois-Chicago. She currently lives in Alexandria, VA with her family.

Brian D. Smedley, Ph.D.
Vice President and Director, Health Policy Institute
Joint Center for Political and Economic Studies

Brian D. Smedley, Ph.D. is Vice President and Director of the Health Policy Institute (HPI) of the Joint Center for Political and Economic Studies in Washington, DC. In this position, Dr. Smedley oversees all of the operations of the Institute, which was started in 2002 with funding from the W.K. Kellogg Foundation. The Institute conducts research and policy analysis and spearheads initiatives to ensure that people of color have equitable opportunities to enjoy good health.

Dr. Smedley has responsibility for HPI's "Place Matters" a key initiative to improve the health of participating communities. Sixteen teams are working in 21 counties and three cities across the country, to address conditions that lead to poor health.

Formerly, Dr. Smedley was Research Director and co-founder of The Opportunity Agenda, a communications, research and policy organization where he led agency efforts to make equity the central goal in state and national health reform discussions and to build the national will to expand opportunity for all citizens. To that end, Dr. Smedley is a co-editor, along with Alan Jenkins, of the book, *All Things Being Equal: Instigating Opportunity in an Inequitable Time*.

Prior to helping launch The Opportunity Agenda, Dr. Smedley was a Senior Program Officer in the Division of Health Sciences Policy of the Institute of Medicine (IOM). There he served as Study Director for the landmark IOM reports: *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care*, and *In the Nation's Compelling Interest: Ensuring Diversity in the Health Care Workforce* among other reports on diversity in the health professions and minority health research policy.

Dr. Smedley came to the IOM from the American Psychological Association, where he worked on a wide range of social, health, and education policy topics in his capacity as Director for Public Interest Policy. Prior to working at the APA, Dr. Smedley served as a Congressional Science Fellow in the office of Rep. Robert C. Scott (D-VA), sponsored by the American Association for the Advancement of Science.

Among his awards and distinctions, in 2004 Dr. Smedley was honored by the Rainbow/PUSH coalition as a "Health Trailblazer" award winner; in 2009 and 2002 he was awarded the Congressional Black Caucus "Healthcare Hero" award; and in August, 2002, was awarded the Early Career Award for Distinguished Contributions to Psychology in the Public Interest by the APA. Dr. Smedley holds an undergraduate degree from Harvard University and a Ph.D. in psychology from UCLA.

Joseph S. Miller, Esq.
Deputy Director and Senior Policy Director,
Media and Technology Institute
Joint Center for Political and Economic Studies

Joseph S. Miller is Deputy Director and Senior Policy Director of the Media and Technology Institute at the Joint Center for Political and Economic Studies. His policy work focuses on spectrum, antitrust, privacy, intellectual property, STEM, broadcast, Internet, and media ownership diversity. He is a leading voice for equal opportunity enforcement, ownership diversity, and broadband adoption. Mr. Miller began his career in advertising sales in New York City at Clear Channel's WKTU-FM, The New York Times' WQXR-FM, and CBS Television. Prior to that, he interned in the programming department at Emmis Broadcasting's Hot 97. He is a proud graduate of the State University of New York College at Plattsburgh, at which he earned a B.S. in Mass Communication, with Concentration in Music and a Minor in Business Administration. At SUNY, Mr. Miller was inducted into the Omicron Delta Kappa National Leadership Honor Society. He earned his Juris Doctor from New York Law School, at which he served as an editor of its Media Law & Policy Journal. Mr. Miller is a member of the Federal Communications Bar Association, American Bar Association, and American Society of Association Executives. A native of Manhattan, New York's Upper West Side, he is admitted to the New York State Bar and to the Bar of the Supreme Court of the United States.

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APPENDIX A: JOINT CENTER ROUNDTABLE ATTENDEES

April 25, 2011

Lindsay Boroush, Policy and Communications Manager, Media and Technology Institute, Joint Center for Political and Economic Studies

Elizabeth Chernow, Esq., Manager, Public Policy, Comcast Corporation,

Alicia Durfee, Research Analyst and Program Specialist, Media and Technology Institute, Joint Center for Political and Economic Studies

Shelly Espinosa, MPH, Director, Community Affairs, UnitedHealth Group and UnitedHealth Foundation

Bud Flagstad, Vice President, Strategic Initiatives, UnitedHealth Group

John Horrigan, Ph.D., Vice President, TechNet

Blair Levin, Esq., Fellow, Aspen Institute

Jason Llorenz, Esq., Executive Director, Hispanic Technology and Telecommunications Partnership

Kimberly Marcus, Executive Director, Public Policy and Telecommunications Institute, Rainbow PUSH

Joseph Miller, Esq., Deputy Director and Senior Policy Director, Media and Technology Institute, Joint Center for Political and Economic Studies

DeNita Morris, Senior Health Producer, One Economy Corporation

Adrienne Oleck, Ramsell Holding Corporation

Ruth Perot, M.A.T., Executive Director and CEO, Summit Health Institute for Research and Education (SHIRE)

Joel Selanikio, M.D., CEO and Co-Founder, Datadyne

Brian Smedley, Ph.D., Vice President and Director, Health Policy Institute, Joint Center for Political and Economic Studies

Reed V. Tuckson, M.D., FACP, Executive Vice President and Chief of Medical Affairs, UnitedHealth Group

Nicol Turner-Lee, Ph.D., Vice President and Director, Media and Technology Institute, Joint Center for Political and Economic Studies

Kathie Westpheling, MPH, Executive Director, Associations of Clinicians for the Underserved

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