Disability, Health, and the Behavioral Risk Factor Surveillance System: Using Health Data to Inform Disability Policy in Delaware

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As with all people, the health status of people living with disabilities can be linked to health risk behaviors. This paper explores behavior, health, and disability through the utilization of data taken from a health monitoring survey implemented by the Centers for Disease Control and Prevention called the Behavioral Risk Factor Surveillance System (BRFSS), for years 2006, 2007, and 2008. My purpose is to begin a discussion about the extent to which health status indicators, health risk behaviors, and chronic health conditions among adults with disabilities reported in the BRFSS can influence disability and health policy in the State of Delaware. The analysis demonstrates the need for health advocates and policymakers to consider using the BRFSS to create and implement disability health policy.

INTRODUCTION

In Delaware and throughout the United States, people with disabilities often face physical and attitudinal barriers to the accessible and inclusive resources that are necessary to maintain optimum health. In order to correct or reduce these barriers, reliable scientific data can often be employed as a tool for policy development, implementation, and change. The Behavioral Risk Factor Surveillance System, or "BRFSS," is a source of such useful data. However, the BRFSS data have received little use toward the promotion of policy development for Delawareans. For example, in the movement for tobacco prevention, the BRFSS has influenced policy makers and policies by tracking prevalence and attitudinal data needed to assess progress in meeting the objectives of the state tobacco control plan.[1] However, it has not been often used to develop policies that would correct

* Disability Policy Leadership Fellow at the Association of University Centers on Disabilities; M.P.A., University of Delaware. Since the time of this analysis, the passage of the Patient Protection and Affordable Care Act was signed into law by President Barack Obama. This health care reform is expected to improve on several existing public health programs such as Medicare, Medicaid, and the Children's Health Insurance Program. The new legislation will also establish a national prevention, health promotion, and public health council to coordinate federal prevention, wellness, and public health activities. Consequently, health care reform could eventually have a positive effect on the health outcomes of all people, including people with disabilities. However, since the legislation is so new, it is too soon to determine such an effect.

or reduce attitudinal and physical barriers to the resources necessary to affect optimum health specifically for people with disabilities. Delaware legislators should use BRFFS data to promote a host of new policies, including—among other things—the provision of state tax credits to fitness centers for the purchase of accessible fitness equipment, the requirement that all publicly funded health and wellness prevention materials be available in accessible formats, and the support of statewide construction of outdoor playgrounds accessible to individuals with disabilities. Use of the BRFSS data to support the implementation of new health policies that encourage optimum health for people with disabilities in Delaware could serve as a model for the rest of the nation.

People's behavior plays a critical role in their health. Personal behaviors such as smoking, poor diet, physical inactivity, and excessive drinking are linked to the leading causes of poor health and death in the United States.[2] Further, people with disabilities are more likely to have greater health risk behaviors, to suffer from more secondary health conditions, and to have poorer overall health than people without disabilities. People with disabilities may face practical and attitudinal barriers and find it more challenging to reach and maintain optimal health than people without disabilities. Therefore, new policies must be considered and developed that will create opportunities for people with disabilities to increase their health status. The BRFSS is an ideal resource that can help develop these potential policies regarding disability and health because it is one of the only data sources that link health risk behaviors, chronic health conditions, and health status among adults with disabilities compared to adults without disabilities.

Defining Disability and its Relationship to Health

Although the CDC reports that 54 million individuals of all ages, races, ethnicities, socioeconomic status, and educational attainment live with at least one disability in the United States,[3] defining and conceptualizing disability is fundamentally challenging for individuals, organizations, and policymakers. Further, the relationship between disability and health is poorly understood, and the social stigma associated with disability brings a lack of mainstream promotion for the support of disability and health.

In its most discriminating sense, disability has been defined as a weakness, a crippling, an affliction, or a deficit. People with disabilities are often viewed as being of victims or being unable to take care of themselves or acting appropriately in society. Defining and conceptualizing disability in this way creates the impression that people with disabilities cannot be understood as healthy regardless of their behavior. However, disability advocates and scholars such as Stephen Gilson conceptualize disability as a construct of social injustice and argue that it is precisely these discriminating types of conceptions that have reinforced attitudinal and

environmental barriers, preventing the formation of sound health policies and ultimately optimum health for people with disabilities. Under this view, disability can be defined and conceptualized as an inequality to accessible resources, opportunity, use, and judgment.[4] Regardless of how disability is defined and conceptualized in the United States, most recent research on the subject concludes that disability is a significant social, public, and moral issue that affects all people either directly or indirectly.[5]

There are many different types and models of disability, including the Medical, Functional, and Social models. The Medical Model views disability as a condition that resides within an individual that can be cured through a treatment or intervention. The Functional Model views disability as a condition that resides within an individual, but the expression of disability is through limited function rather than diagnosis. There are several Social Models of disability, all of which view disability as a function of environmental barriers.[6] A considerable problem with understanding and defining disability is that disabilities and their impacts are varying and not always noticeable. For example, some people with disabilities may use a wheelchair or have an intellectual disability while others may have disabling secondary conditions such as diabetes, stroke, and mental illness.

Defining disability poses a serious challenge and is not the focus of this analysis, but it is important to recognize the many ways in which to define the term and how the definition affects perception as well as policy. A perfect example of the affect on policy is illustrated by the many definitions the Federal Government has for disability. In the Federal Statutory Definitions of Disability, prepared for the Interagency Committee on Disability Research, there are 67 different definitions of disability, many of which overlap. The report states:

> Of the 67 acts or programs that define disability in the United States, 35 have self-contained definitions (although some of these 35 contain more than one definition and three use the American's with Disability Act language), 26 use definitions from another Code section, and six use definitions from more than one Code section.[7]

The CDC and the BRFFS also have a definition for disability, which will be used for the purposes of this analysis. The definition of disability is taken from the CDC's BRFSS, which defines disability as an affirmative response to either one of the following two survey questions: 1) Are you limited in any way in any activities because of physical, mental, or emotional problems? 2) Do you now have any health problem that requires you to use special equipment, such as a cane, a wheelchair, a special bed, or a special telephone?[8]

The difficulty of defining the specifics of disability does not negate the fact that there are many people in the United States who now or will eventually have some form of disability. Disability must be seen as a

concept for society and policymakers to better understand so that there might be changes in attitudes, behaviors, accessibility, and future disability policies in Delaware and across the United States.

The BRFFS and other health monitoring surveys are crucial to disability and health policymaking for several reasons. First, states use the BRFSS data to identify emerging health problems, establish and track health objectives, and develop and evaluate public health policies and programs. In addition, many states also use the BRFSS data to support health-related legislative efforts such as tobacco prevention.[9] Second, the BRFSS allows within-state and between-state comparisons of health conditions and risk behaviors among adults with or without disabilities. This information can then be used to monitor the health status of adults with disabilities at the national, state, and local level. Third, the 1991 Institute of Medicine (IOM) report *Disability in America: Toward a National Agenda for Prevention*, recommended that building on health monitoring surveys such as the BRFSS, a national disability surveillance system should be adopted as part of a disability and health conceptual framework. If such a surveillance system was adopted with the sole purpose of capturing health and behavior data for all people with disabilities, it could help provide greater support towards the development and implementation of disability health policy in the United States.[10]

Like national BRFSS trends, behaviors related to health and disability in Delaware suggest that adults with disabilities tend to smoke more, get obese more frequently, and get less exercise than adults without disabilities. Overall, adults with disabilities in Delaware tend to be less healthy compared to those without disabilities. Therefore, when evaluating disability health policymaking in Delaware, analysis of the BRFSS should act in conjunction with organizational and individual practices as a catalyst to implement new health policies that support behavior changes and optimum health for adults with disabilities. In addition, health promotion activities resulting from the introduction of new disability and health legislation in Delaware will have broad positive effects on health outcomes for all people because everyone will likely have a disability at some point.

I. DISABILITY AND HEALTH IN THE UNITED STATES

A. NATIONAL AND DELAWARE DISABILITY POLICIES

Delaware, like many states, has endorsed the regulations set forth by federal disability policies such as Social Security, Medicare and Medicaid, the Fair Housing Amendments Act, and the Americans with Disabilities Act. These disability policies have been developed to protect people against discrimination in employment, education, health, structural accessibility, assistive technology, housing, and civil rights. However, disability policies

in Delaware and throughout the United States have not been without criticism and are subject to ongoing interpretation and refinement.

A good example of a disability policy that is open to interpretation can be illustrated by Medicare, which is a federally funded healthcare program that affects people in Delaware aged 65 and over. Specifically, Medicare allows private health insurance administrators to use their discretion in deciding medical coverage and determining what qualifies as a medical necessity. These discretionary measures and decisions often prevent adults with disabilities from achieving better health. As a result of being denied coverage, some older adults with disabilities may not be able to access assistive technology like hearing aids and prosthetic devices.[11] This simple example is one of many demonstrations of how public as well as private health policies can have less than desirable effects on the decisions and behaviors of people with disabilities, which can affect their health status.

As a way to address the growing concern over the optimum health of people with disabilities, Delaware has implemented the goals set by Healthy People 2010, which is a national framework for the prevention of chronic health conditions through the promotion of good health in the United States. The goals of Healthy People 2010 are intended to provide a framework for health and wellness organizations to help all individuals of all ages increase life expectancy, improve quality of life, and eliminate health disparities among different segments of the population. In addition, the Healthy People 2010 objectives have been established to monitor health behaviors and the use of preventive health services.[12]

One project, called the Healthy Delawareans with Disabilities: Bridging the Gap Project (HDWD), has been working since 2005 to promote the goals found in Healthy People 2010.[13] The HDWD Project is funded by the CDC and is charged with improving the health status of people with disabilities in Delaware. The HDWD Project develops and implements various health initiatives and health promotion activities in collaboration with state and community partners, analyzes the BRFSS data related to health and disability, raises awareness about health and wellness issues encountered by individuals with disabilities, works to improve access to and inclusion in health care and wellness activities statewide, and provides technical assistance to state and community agencies regarding health and disability-related issues.

Programs such as the HDWD are intended to promote optimum health for people with disabilities through system and policy changes in Delaware. However, policy development and implementation is a slow process and often is never realized due to funding constraints, ignorance of data such as that coming from the BRFFS, and political resistance. Despite the barriers, a wide range of disability policies are continually being designed and drafted. For example, current Delaware policies specifically related to the behavior and health of people with disabilities include a Mental Health Bill

of Rights, Absentee Voting, the DART Para Transit Cell Phone Program, and Sex Offenses Against Children with Cognitive Disabilities.

Below are descriptions of two specific policies, Universal Design and Prosthetic Parity, which are currently being developed in Delaware. They are illustrations of disability health policies designed to promote positive health behaviors and optimum health outcomes for people with disabilities. Although these policies provide good steps toward promoting optimum health for people with disabilities, they do not encompass all of the disability-related issues that policymakers should confront. Therefore, refinement of existing policies or creation of better policies is needed to further promote the connection between behavior and health.

1. Universal Design for All New Publicly Funded Housing in Delaware

Universal design is defined as the design of products and environments to be usable by all people, to the greatest extent possible, and without the need for adaptation or specialized design.[14] In Delaware, the Developmental Disabilities Council was designated by the governor to address the unmet needs of people with developmental disabilities through system-wide advocacy, planning, and demonstration projects. It is currently in the process of developing policy to ensure that all single family houses, duplexes, tri-plexes, and semi-detached homes built all or partly with public funding be built following the principles of universal design. Structures built using these principles will permit a person with mobility impairment to live comfortably on the first floor of a dwelling. In addition, the policy is being drafted to state that if one of the above types of dwellings is being rehabilitated with public funds and the cost of the rehabilitation is 75% or more of the current market value of the dwelling, the principles of universal design must be included in that rehabilitation.[15]

2. Prosthetic Parity in Delaware

According to the Amputee Coalition of America (ACA), people living with the absence of a limb face many obstacles when attempting to obtain appropriate prosthetic care and optimal health care. In addition, private insurance companies often place annual or lifetime caps on prosthetic devices or eliminate coverage altogether.[16] Inappropriate prosthetic care can lead to sedentary behavior and additional chronic health conditions for people with disabilities. Currently, there are seventeen states that have passed prosthetic parity laws. The Amputee Prosthetic Parity Coalition in Delaware has been formed to work with the state legislature to pass a prosthetic parity bill that would require health insurance companies to provide equal coverage for repairs and replacement of prosthetics and orthotics as other similar medical services.

The creation and implementation of disability policies in Delaware illustrates a slow but positive evolution in the discourse toward greater protections and acceptance into society for people with disabilities in

Delaware. However, the history of disability policy for state and the federal governments has traditionally been framed as a welfare benefit given to a segment of the "deserving poor." Disability advocates assert that people with disabilities remain socially and economically marginalized as a result of this original assumption, which has been built into many disability policies over the years.[17]

B. CREATING DISABILITY HEALTH TRENDS AND POLICY ISSUES

Disability health trends and policy issues of interest in Delaware and throughout the nation are first recognized and created by researchers, people with disabilities, disability advocates, educators, individuals, and organizations in all levels of federal, state, and local governments. These policy issues are then guided by data, as illustrated by Delaware's tobacco policies and the goals set forth in the Healthy People 2010 initiative. Advocates who refine existing or design new disability policies range from members of coalitions and grass roots groups, such as the Prosthetic Parity Coalition in Delaware, to private nonprofit organizations such as the Association of University Centers on Disabilities (AUCD).

The AUCD, along with the Arc of the United States, United Cerebral Palsy, the American Association on Intellectual and Developmental Disabilities, Self Advocates Becoming Empowered, and the National Association of Councils on Developmental Disabilities, has developed a paramount annual Disability Policy Seminar that allows disability advocates from Delaware and hundreds more from across the nation to come together for several days to meet and discuss disability trends and policy issues in the United States.[18] The Seminar provides individuals with tools and information to communicate with members of Congress to ensure sufficient funding to address the needs of people with disabilities. In addition, the Seminar provides opportunities for advocates to hear from leading public policy experts, other disability advocates, and Congressional staff about key disability policies. Through the course of the Seminar, advocates develop and deliver a message to Congress and the Executive Administration on what specific disability health trends and policy issues should be top priorities. The success of the Seminar demonstrates how influential local advocates and scholars can be on national policy.

II. THE BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM

A. BACKGROUND

Since 1984, the CDC has implemented the Behavioral Risk Factor Surveillance System, or BRFSS, which is an ongoing state-based telephone health survey system capturing information of non-institutionalized adults 18 years and older. The BRFSS is designed to track annual health conditions and health risk behaviors throughout the United States and at state and local levels. The survey collects data on a variety of health risk

factors, preventive health care practices, chronic health conditions, and emerging public health issues.[19]

The primary focus of the BRFSS has been on behaviors and conditions that are linked with the leading causes of death in the United States, such as heart disease, cancer, stroke, diabetes, and injury. Additionally, the federal government considers the BRFSS to be an acceptable method for determining the prevalence of many health risk behaviors.

The survey includes core questions that are asked in all 50 states and United States territories each year. There are also optional survey questions, or modules, that allow states and the CDC to gather information on topics of particular interest that are not included in the core survey. States have the additional option of including a limited number of their own questions. To illustrate, in 2006 and 2007, Delaware chose to add questions addressing the use of tobacco products other than cigarettes. If desired, states can use call-back surveys to gather additional information from select participants based on their responses.[20] The information reported below uses the most recent available BRFSS survey results (2006–2008) compiled by the University of Delaware's Center for Disabilities Studies.

B. UTILIZATION OF THE BRFSS

The most compelling reason for utilizing BRFSS data to develop disability health policy in Delaware is that the BRFSS is the only method available for capturing and comparing health status indicators, health risk behaviors, and chronic health conditions among adults with disabilities compared to those without disabilities. As the BRFSS data in Delaware will illustrate, adults with disabilities appear to be less healthy compared to adults without disabilities. Information from the BRFSS can be useful to government officials, policymakers, health care and wellness professionals, community health and disability professionals, health educators, disability advocates, direct support professionals, individuals with disabilities, and family members. These individuals should use the data as a tool to develop ongoing initiatives and new policies focused on behavior and health, particularly for people with disabilities in Delaware.[21]

Currently, these data are not often used because decisions are often made based on funding restraints and political reasons instead of research. Further, policymakers are largely unaware of data sources such as the BRFSS and lack good policymaking leadership. In Delaware, for example, over $30 million was used to rebuild the Stockley Medical Center, which is an institutional setting that provides habilitative training, health care, family services, and residential services to less than 100 individuals with developmental disabilities. The Center was built even though data clearly indicate that institutions do not provide as much benefit as integrated community programs. It seems that Delaware policymakers were either

unaware of the data regarding the benefits of community integration for people with developmental disabilities, the data was ignored, or there was simply a lack of good political leadership and common sense.[22]

C. DISABILITY QUESTIONS AND METHODOLOGY OF THE BRFSS

As mentioned earlier, the BRFSS asks two questions to survey respondents regarding disability that are used to define disability: 1) Are you limited in any way in any activities because of physical, mental, or emotional problems? 2) Do you now have any health problem that requires you to use special equipment, such as a cane, a wheelchair, a special bed, or a special telephone?[23]

The BRFSS survey data were compiled from survey years 2008 in which the sample size was 4026, in 2007 in which the sample size was 3991, and 2006 in which the sample size was 4002. The BRFSS tabulations reported include weighted sample size numbers (weighted Ns) for each demographic category. The CDC recommends the use of these weighted Ns to illustrate prevalence or estimate the proportion of adults in Delaware with certain health risk behaviors or conditions. Therefore, weighted percentages were used for all of the following tables and figures to represent the entire adult, non-institutionalized population in Delaware. The entire population for each year was 657,322 in 2008, 661,753 in 2007, and 647,680 in 2006. Out of that population, the number of adults estimated to have a disability was 144,551 in 2008, 148,946 in 2007, and 146,542 in 2006. Additionally, percentages for those classified as having a disability were 21.9%, 22.5% and 22.6% in years 2008, 2007, and 2006 respectively.

The BRFSS does not define specific descriptive terms used in the survey such as "poor" or "excellent" to describe health status. However, self-assessed health status is a strong measure of overall health status and has been demonstrated to correlate with subsequent health service use, functional status, and mortality.[24] Finally, confidence intervals were not calculated on the measures included in this study.

D. DISABILITY AND HEALTH TRENDS IN DELAWARE

1. Demographics

According to the BRFSS data, in 2008 the State of Delaware was comprised of three counties, with 60.5% of the population residing in New Castle County, 16.6% in Kent County, and 22.8% in Sussex County. In addition, the majority of the population was between the ages of 35 and 64. People 65 years or older had the highest rates of disability in Delaware, which is a common trend across the United States. Regardless of disability status, the most common race/ethnicity reported in the survey was White, non-Hispanic. Among adults with a disability, 36.2% were college graduates, compared to 38.9% of those without a disability. In addition, among adults with a disability, 13.8% had a household income of $15,000

or less, compared to 6.4% of those without a disability. Finally, most adults with a disability were retired or unable to work. Conversely, the majority of adults who did not have a disability were employed.

Table 2-1: BRFSS 2008 Demographics[25]

Variable	Category	% No Disability	% With Disability	Total Percentage
Population	New Castle	61.7%	56.4%	60.5%
	Kent	16.3	17.9	16.6
	Sussex	22.0	25.7	22.8
	Female	51.0	55.8	52.0
	Male	49.0	44.2	48.0
Age	18–34	33.6.	17.5	30.0
	35–44	20.3	14.6	19.1
	45–54	18.6	18.2	18.5
	55–64	13.0	20.1	14.6
	65+	14.5	29.6	17.8
Race/ Ethnicity	White only, non-Hisp.	77.6	81.2	78.4
	Black only, non-Hisp.	13.0	12.9	13.0
	Other	9.4	5.9	8.6
Education	Some HS or Less	4.9	7.2	5.4
	HS Dip/GED	29.3	31.7	29.9
	Some College/Tech	26.9	24.9	26.4
	College Grad	38.9	36.2	38.3
Income	Under $15,000	6.4	13.8	8.0
	$15,000–$24,999	5.8	15.5	7.9
	$25,000–$34,999	8.3	9.5	8.6
	$35,000–$49,999	13.7	14.9	13.9
	$50,000 or more	65.8	46.3	61.7
	Under $15,000	6.4	13.8	8.0
Marital Status	Married or w/ partner	64.0	58.2	62.7
	Other	36.0	41.8	37.3
Employment	Employed	70.0	44.5	64.4
	Homemaker, Student, Unemployed	14.2	10.3	13.3
	Retired, Unable	15.9	45.1	22.3

E. AGE, DISABILITY, & CHRONIC DISEASE

The likelihood for disease and disability to occur and overall health to deteriorate increases as age increases. Since the relationship exists between age and disability, and also between old age and poor health, any increase in poor health might simply be related to age, not disability. However, as illustrated below in Table 2-2, the percentages of adults with disabilities presenting with chronic diseases such as diabetes, heart attack, and stroke are worse in all measured age groups. Therefore, age alone does not explain the difference in health outcomes between those with disabilities and those without.

Table 2-2: BRFSS 2008 Age, Disability, & Chronic Disease

Variable	Category	Without a Disability			With a Disability		
Ever Had Diabetes	Age	Yes	No	Percent	Yes	No	Percent
	18–34	7	447	1.5%	5	68	6.8%
	35–44	126	1525	7.6	95	462	17.1
	65+	118	600	16.4	111	335	24.9
Variable	Category	Without a Disability			With a Disability		
Ever Had a Heart Attack	Age	Yes	No	Percent	Yes	No	Percent
	18–34	2	460	0.4%	2	72	2.7%
	35–44	29	1653	1.8	38	532	6.7
	65+	83	651	11.3	104	345	23.2
Variable	Category	Without a Disability			With a Disability		
Ever Had a Stroke	Age	Yes	No	Percent	Yes	No	Percent
	18–34	1	461	0.2%	2	72	2.7%
	35–44	34	1648	2.0	35	536	6.1
	65+	42	693	5.7	49	399	10.9

F. HEALTH STATUS

The BRFSS includes questions about general health and poor physical or mental health, body weight and height (which combine for body mass index (BMI)), the amount of emotional support received, unintentional falls if 45 years or older, and overall satisfaction with life. Any increase in these latter conditions leads to direct decreases in overall health.

The general health of adults with disabilities appears lower compared to adults without disabilities. For example, of those adults with a disability, 61.6% had excellent health, compared to 94.0% of those without a disability. In addition to general health, poor physical or mental health for one week or more in the last 30 days appeared to be relatively common for adults with disabilities. For example, over 30% of adults with a disability had poor physical or mental health for one week or more in last 30 days, compared to less than 4% of those without a disability. Also, the BRFSS data suggest that adults with disabilities were more likely to have a higher Body Mass Index (BMI) than adults without disabilities. For example, over 38% of adults with a disability are obese, compared to less than 24% of those without a disability. A significant difference between adults with and without disabilities is the amount of unintentional falls that occur by adults 45 years or older. For example, of adults 45 and over with a disability, 24.2% had an unintentional fall, compared to only 9.1% of those without a disability.

The BRFSS data suggest that adults with disabilities received emotional support less frequently than adults without a disability. When asked about how often a respondent gets emotional support, 75.4% of adults with a disability always or usually received emotional support needed, compared to 86.6% of people without disabilities. Equally significant, adults with

disabilities tended to be less satisfied with life. For example, of adults with a disability, 13.1% were dissatisfied with their life, compared to 2.3% of those without a disability.

Table 2-3: BRFSS 2008 Health Status

Variable	Category	% No Disability	% With Disability	Total Percentage
General Health Status	Good–Excellent	94.0%	61.6%	86.9%
	Poor–Fair	6.0	38.4	13.1
Poor Health for 1 Week or More in Last 30 Days	Yes	3.3	31.1	9.4
	No	96.7	68.9	90.6
Body Mass Index	Not Overweight	39.0	29.0	36.8
	Overweight	37.0	33.0	36.1
	Obese	24.0	38.0	27.1
Frequency of Emotional Support	Usually–Always	86.6	75.4	84.2
	Rarely–Sometimes	13.4	24.6	15.8
Unintentional Falls, 45 Years or Older	Yes	9.1	24.2	13.5
	No	90.9	75.8	86.5
Satisfaction with Life	Yes	97.7	86.9	95.4
	No	2.3	13.1	4.6

G. ACCESS TO SERVICES AND LIFESTYLE

The BRFSS asks each respondent about healthcare coverage, access to healthcare professionals, health services affordability, the last checkup with a doctor, and compliance with national physical and dietary guidelines.

Adults over 65 are covered by Medicare, so this analysis only looks at health insurance coverage of adults age 18–64. In 2008, the BRFSS reported that 14.5% of adults with a disability could not see a doctor because of cost, compared to 8.4% of those without a disability. This could be explained by the 13.8% of adults with a disability with a household income of $15,000 or less, as well as the burden of high insurance deductibles for people with multiple medical conditions. Despite the barriers of cost, 81.2% of all Delawareans regardless of disability status had a physical checkup in the last twelve months; 85.7% of adults with disabilities had a checkup in the same time period.

In addition to the importance of accessing health services to maintain optimum health, the importance of an active lifestyle filled with routine exercise and a nutritious diet contribute to better health outcomes for all people. According to the CDC, physical activity is anything that gets your body moving.[26] For people with disabilities, lifestyle choices can be negatively affected by physical and attitudinal barriers to accessible resources, social and emotional support, and services necessary for good health. Thus, in 2007, 24.6% of adults with disabilities did little physical activity, compared to 7.2% of those without a disability.

Table 2-4: BRFSS 2007& 2008 Access to Services and Lifestyle

Variable	Categories	% No Disability	% With Disability	Total Percentage
Have Any Health Care Coverage	Yes	94.1%	93.5%	93.6%
	No	9.3	10.7	10.4
Have Health Care Professional	Yes	90.7	89.3	89.6
	No	9.3	10.7	10.4
Could Not See Doctor Because of Cost	Yes	14.5	8.4	9.7
	No	85.5	91.6	90.3
Routine Physical Check-Up within 12 Months	Yes	85.7	79.9	81.2
	No	14.3	20.1	18.8
Physical Activity	Sufficient Activity	52.0	34.3	48.0
	Insufficient activity	40.8	41.0	40.9
	No activity	7.2	24.6	11.1
5+ Servings of Fruits & Veg. Daily[27]	Yes	21.3	21.8	21.4
	No	78.7	78.2	78.6

H. HEALTH RISK BEHAVIORS: SMOKING & ALCOHOL CONSUMPTION

According to the National Center for Chronic Disease Prevention and Health Promotion, the leading causes of death in the United States include chronic health conditions such as heart disease and cancer, injuries such as suicides and accidents, and preventable infectious diseases such as seasonal influenza and pneumonia. Equally important, the risk factors associated with these leading causes of death include personal health behaviors such as cigarette smoking and alcohol consumption.[28] The BRFSS questions each respondent about these health risk behaviors.

Tobacco use is the single most preventable cause of disease, disability, and death in the United States.[29] Each year, an estimated 443,000 people die prematurely from smoking or exposure to secondhand smoke, and another 8.6 million have a serious illness caused by smoking. In 2005, the prevalence of cigarette smoking in Delaware among adults dropped to the lowest level since the first Delaware behavior risk factor survey was collected in 1982.[30] Despite the low levels, 20.4% of adults with a disability were smokers, compared to 17.1% of those without a disability.

Heavy drinking is defined as an average daily consumption of two drinks for female adults or three drinks or more for male adults. Binge drinking is defined as males having 5 or more drinks on one occasion and females having four or more drinks on one occasion. Overall, adults with disabilities drink less than adults without disabilities.

Table 2-5: BRFSS 2008 Health Risk Behaviors

Variable	Categories	% No Disability	% With Disability	Total Percentage
Smoking Status	Current	17.1%	20.4%	17.8%
	Former	26.5	35.8	28.5
	Never	56.4	43.8	53.7
Heavy drinker	Yes	8.0	5.2	7.5
	No	92.0	94.8	92.5
Binge Drinker	Yes	31.5	27.3	30.7
	No	68.5	72.7	69.3

I. SECONDARY CONDITIONS: ASTHMA, CHOLESTEROL, BLOOD PRESSURE, DIABETES, & HEART DISEASE

The BRFSS asks each respondent whether she has ever been told by a healthcare professional that she has a secondary health condition such as asthma, high blood pressure, diabetes, or heart disease. A secondary health condition is any condition to which a person is more susceptible as a result of having a primary disabling condition.[31] Secondary conditions can be attributed to at least three factors: non-medical events such as isolation, conditions that affect the general population such as obesity, and exogenous problems that arise any time during the lifespan such as inaccessible healthcare screenings.[32] Based on the BRFSS data, adults with disabilities in Delaware appear to have more secondary conditions than adults without disabilities.

Asthma is a chronic condition that is expensive to treat. Statewide, costs for asthma treatment and medications can be as high as $25 to $30 million in any given year.[33] In 2008, 20.7% of adults with a disability were told by a healthcare professional they have asthma, compared to 11.6% of those without a disability.

The only statistic recorded about cholesterol was whether the respondent had been tested for cholesterol in the past five years. The percent of adults both with and without disabilities who had their cholesterol checked were similar. Yet adults with disabilities (42.2%) are more likely than those without disabilities (25.6%) to have high blood pressure or pre-hypertension. Nationally, an estimated 1 out of 3 American adults have high blood pressure or hypertension.

Since the mid-1990's, the prevalence of diabetes has nearly doubled among Delawareans, from 4.3% to 8.4%, and Delaware's diabetes prevalence rate is slightly higher than that of the national average.[34] In 2008, 16.4% of adults with a disability had diabetes, compared to 6.1% of those without a disability. In addition, 73.5% of adults with a disability tested high for blood sugar within the past three years, compared to 54.7% of those without a disability. There were nearly equal percentages of disabled and non-disabled adults who were age 45 or younger when they were first diagnosed with diabetes.

Finally, the CDC reports that heart disease is the leading cause of death in the United States and is a major cause of disability.[35] In 2008, 11.3% of adults with a disability had been diagnosed with a heart attack, compared to 2.5% of those without a disability. Also, 10.8% of adults with a disability had been diagnosed with angina or heart disease, compared to 3.1% of those without a disability. Lastly, 7.3% of adults with a disability had had a stroke, compared to fewer than 2% of those without a disability.

Table 2-6: BRFSS 2007 & 2008 Secondary Conditions

Variable	% No Disability	% With Disability	Total Percentage
Ever Told Have Asthma	11.6%	20.7%	13.6%
Cholesterol Tested in Last Five Years, (2007)	80.3	82.4	80.7
Ever Told Have High Blood Pressure, (2007)	25.6	42.2	29.3
Ever Told Have Diabetes	6.1	16.4	8.4
Test High for Blood Sugar in Past Three Years	54.7	73.5	58.4
Diagnosed with Diabetes Before Age 45	2.4	6.8	3.4
Ever diagnosed with a heart attack	2.5	11.3	4.5
Ever diagnosed with heart disease	3.1	10.8	4.7
Ever diagnosed with a stroke	1.6	7.3	2.8

J. PREVENTATIVE HEALTH AND SCREENING: DENTAL, WOMEN, MEN, IMMUNIZATIONS, AND HIV TESTING

Preventing illness through behavior modifications could be the key to healthy living for all people in Delaware and specifically for those who have a disability. In addition, regular health exams and tests can help uncover medical conditions before they start—when chances for treatment and cure are better. Preventative screenings, access to health services, and treatments can increase the chances for living longer and healthier lives for all Delawareans.[36] The BRFSS asks each respondent if they visited their dentist regularly, received gender-specific preventative health screenings, took a seasonal influenza and or pneumonia shot, and if the respondent has ever been tested for HIV.

1. Dental Health

Dental health is an essential part of healthy living. According to the CDC, mouth and throat diseases, which range from cavities to oral cancer, can cause pain and disability for millions of Americans each year.[37] In 2008, 32.3% of adults with a disability did not visit their dentist within the past 12 months, compared to 23.8% of those without a disability. Also, 27.2% of adults with a disability indicated that it had been longer than one year since they had been to a dentist, compared to 22.3% of those without a disability.

2. Women's Health

At the time this BRFSS data was reported, the CDC recommended that women age 40 and older receive mammogram screenings every one to two years and that all women should start having regular Pap tests at age 21 or within three years of the first time they have intercourse.[38] The percentages of women with disability who have ever had mammography screenings, breast exams, or Pap tests are mostly greater than the percentages of women without disability. This is likely explained by the fact that adults with disabilities are more likely to have visited a doctor in the past year than adults without disabilities.

3. Men's Health

For men, 6.7% of those with a disability were told they have prostate cancer, compared to 3.6% of those without a disability. However, men with disabilities were more likely to have a prostate-specific antigen (PSA) test than men without disabilities. This finding is similar, and probably linked, to the findings in the women's health category. Finally, of all men 40 years or older with a disability, 51.9% received a digital rectal exam within the last year, compared to 43.3% of those without a disability.

4. Screenings and Immunizations

In addition to mammography screenings for women and PSA screenings for men, the CDC recommends that all people be screened for colorectal cancer. Screening for colon cancer should begin soon after turning 50 for both genders and then continue screening at regular intervals.[39] In 2008, 76.7% of adults 50 years or older who had a disability received a Sigmoidoscopy or colonoscopy within the last year, compared to 73.1% of those without a disability. In 2008, adults with disabilities were more likely to have received a flu shot in the past year and to have ever received a pneumonia shot than adults without disabilities.

Human Immunodeficiency Virus (HIV) is the cause of Acquired Immune Deficiency Syndrome (AIDS). HIV is different from most other viruses because it attacks the immune system, which leads to major health complications and potentially death. According to the CDC, at the end of 2006, an estimated 1.1 million persons in the United States were living with diagnosed or undiagnosed HIV/AIDS.[40] In 2008, almost 55% of all Delawareans regardless of disability status had never received an HIV test. However, 52.2% of all adults with a disability did receive an HIV test, compared to only 44.4% of those without a disability.

Table 2-7: BRFSS 2006 & 2008 Preventative Health Screening Data

Variable	% No Disability	% With Disability	Total Percentage
Dental			
Visited Dentist in Last 12 Months	76.2%	67.7%	74.4%
Teeth cleaning in Last 12 Months	77.7	72.8	76.7
Women's Health			
Ever Had A Mammogram	66.0	80.5	69.4
Mammogram in Last 12 Months	47.6	56.3	49.6
Ever Had Breast Exam By Doctor	90.3	91.1	90.5
Ever Had A Pap Test	94.8	94.2	94.7
Men's Health			
Ever Told Have Prostate Cancer	3.6	6.7	4.4
If Over 40, Ever Had a PSA Test	61.6	70.5	63.8
Digital Rectal Exam in Last 12 Months	43.3	51.9	45.5
Sigmoidoscopy/Colonoscopy			
If Over 50, Ever Had a Sigmoidoscopy / Colonoscopy	73.1	76.7	74.2
Immunizations			
Received Flu Shot in Past 12 Months	36.0	48.7	38.8
Ever Received a Pneumonia Shot	22.1	38.8	25.8
HIV Testing			
Ever Tested for HIV	44.4	52.2	45.8

K. LIMITATIONS TO THE USE OF THE BRFSS IN POLICYMAKING

The majority of the above data suggest that adults with disabilities in Delaware appear to face more obstacles to being healthy and that individual behaviors may be an important underlying factor toward optimum health. However, like all research data, the BRFSS data has limitations. Limitations can create obstacles to the design and implementation of disability health policy in Delaware.

BRFSS asks only two questions about disability. Not including optional survey modules, the BRFSS asks fixed, rotating, and emerging core questions each year in the survey. However, BRFSS uses only two questions specifically about disability status. These two questions are also used to define and affirm if respondents identify with having a disability. Unfortunately, the BRFSS does not collect disability type or needs-specific data. Furthermore, while the BRFSS provides a way to compare adults who do and do not have a disability, it does not allow for examining differences by type of disability or by the impact of a disability.

In states like Delaware, the BRFSS survey is limited to only 4,000 non-institutionalized adults and is not inclusive of all groups of disability status. According to the United States Census, in July of 2008, Delaware's total population was 873,092.[41] However, using weighted data to illustrate population totals for BRFSS, out of 4,000 survey respondents, the total population count regardless of disability status in 2008 was 657,322 adults. Out of this number, 144,551 or 21.9% of adults in Delaware have a

disability. However, this number does not include people under 18 years of age with disabilities or people with disabilities in institutional settings. Despite community integration of people with disabilities, more than 2 million people with disabilities nationwide live in some type of rigid institutionalized setting. While this population continues to decline, it is still significant,[42] and as a result, many people with disabilities statewide do not participate fully in society. Therefore, the likelihood of there being more people with disabilities of all ages in Delaware is higher than as is reported in the BRFSS data.

BRFSS is a self-reported telephone survey with no way to validate the information provided. It is possible that BRFSS respondents do not truthfully report disability status because of the stigma associated with disability, because they do not identify their limitation as a disability, or because they are coping with their disability in a way that is satisfactory to them.

III. DISCUSSION AND RECOMMENDATIONS

The BRFSS data reported in this analysis reveal that adults with disabilities appear to face challenges to maintaining optimum health in Delaware. The results demonstrate that adults with disabilities have considerably lower health and satisfaction with life than adults without disabilities. Although it might seem that adults with disabilities take better preventative health measures, illustrated by high rates of getting tests and vaccines, this behavior is probably explained by the high percentage of adults with disabilities who frequently see physicians. If adults with disabilities see a doctor about their disability, they are more likely to have other health checks than adults without disabilities, who have no need to see a doctor regularly. The better estimation of negative health behavior can be found in the high percentages of adults with disabilities who smoke or do not get proper levels of exercise. These findings suggest that more policies are needed promote optimum health for all people in Delaware.

Although the BRFSS data is limited in its nature, it is still an important resource that helps to shed light on the incidence of disability and disability-related health status in Delaware. Furthermore, the BRFSS data must be considered in the development, refinement, and design of disability health policy in Delaware because it is the only unique resource available that reports behaviors related to health status of adults with disabilities compared to those without disabilities. The following are recommendations to consider for enhancing the utilization of BRFSS in Delaware.

The CDC should address and correct the limitations reported previously in this analysis. Addressing survey limitations would help to make the BRFSS data more applicable. By doing so, the BRFSS would likely reveal that there are more individuals who have disabilities in

Delaware and nationwide than are being currently reported. The cost of carrying out the BRFSS is inevitably an issue. For example, in a small state like Delaware, the cost to the CDC for implementing the BRFSS is $150,000 annually.[43] However, the cost of changing the BRFSS would likely be outweighed by the knowledge gained from an improved survey.

The BRFSS should include a set of standardized disability questions. The CDC should consider incorporating specific questions into the survey that ask about physical and attitudinal accessibility in relationship to ones environment. For example, questions on Instrumental Activities of Daily Living (IADL) such as driving, voting, being able to clean up after a meal, and the ability to put on clothes should be considered. These IADL questions may help to chip away the underlying factors and limitations between body and environment that affect individual behavioral choices and health outcomes for people with disabilities.

The CDC should consider other methods for capturing BRFSS data. The BRFSS should adapt to an increasingly complex surveillance system that is evolving beyond the use of telephones and English. There have been many improvements in communications technology, including the increased use of cellular telephones, the internet, and call-screening devices. Societal behaviors have changed as well, and there is now growing concern about privacy and declining participation in surveys. Additionally, there has been an increase in population diversity, demonstrated by an increasing number of languages spoken in the United States and greater cultural and ethnic diversity. All of these factors call for the BRFSS to expand its methods.

The United States Government should implement a national disability surveillance system. The CDC, or perhaps another federal organization, should develop an enhanced BRFSS that solely captures disability data on a national level. Doing so would not only help to alleviate the current BRFSS limitations as described above, but would also help to reinforce a disability and health conceptual framework for the entire United States. If such a surveillance system were adopted with the sole purpose of capturing health and behavior data as it relates to disability, it could help provide greater support toward the development and implementation of disability health policy at the national level.[44]

A. REFRAMING DISABILITY AND HEALTH IN THE UNITED STATES

Perhaps the greatest barrier to enhancing the understanding of behaviors, disability, and its relationship to health in the Delaware is the way in which disability is framed by everyone who reports about it and advocates for it. Some public opinion about disability is still rooted in conceptions that do little to address the importance of the issue, although current information on disability suggests that all people are affected directly or indirectly by it at some point in their lives. Therefore, reframing

the issue of disability and its relationship to health in the United States should be considered by advocates, researchers, and the media not only to advance the cause but also to increase the understanding of this issue as a part of everyone's experience. Considerations for reframing the issue of disability include the rethinking of how disability studies are designed and taught at the collegiate level, the promotion of informed action by public leaders, and the broadening of discourse to include the design of a generic environment that would promote healthy behaviors for all people.[45] Specifically, disability should be reframed using the World Health Organization's International Classification of Functioning (ICF), which puts the notions of health and disability in a new light. ICF suggests that all individuals have variations in their health and abilities, experiencing limitations in ability from time to time. Furthermore the ICF focuses on the individual's ability to interact with his or her environment. Consequently, the ICF reorganizes the concept of disability by shifting the focus from the causes of disability to the impact, which mainstreams the experience and classifies disability as a universal human experience. By shifting the focus, the ICF places all health conditions on an equal footing.[46]

CONCLUSION

This research and analysis explored certain health risks that adults with disabilities face in Delaware by observing health indicators, health risk behaviors, and chronic health conditions reported in the BRFSS. This analysis also explored the ongoing discourse within the subject of disability and the challenges to refinement and formation of disability policy in Delaware and nationwide.

Although the BRFSS disability data for Delaware is limited, it is the only data available for advocates and policymakers to use that is unique to Delaware's adult disability population. Like national trends, the BRFSS data for Delaware illustrates that adults with disabilities tend to have more unhealthy behaviors and chronic health diseases compared to adults without disabilities. Due to the limitations, the BRFSS data do not answer what underlying factors create this phenomenon. Thus, the BRFSS is unable to explain the underlying connections between behavior and the social and built environment that cause adults with disabilities to have poorer health compared to adults without disabilities in Delaware. However, these issues should not deter disability advocates and policymakers from using the current BRFSS data to refine and develop new disability health policies.

The BRFSS data illustrate that adults with disabilities may need greater support for their behaviors, their bodies, and their environments. Furthermore, the task of linking the BRFSS data to policy should not be seen as a purely technical exercise in disseminating findings. Rather, the

data should become implicitly linked to a broader political context. The application of data from the BRFSS survey then becomes not only a product for dissemination but is conducted with application inherently in mind.[47]

Like the rest of the nation, Delaware's population is growing older, and the connection between age and disability is illustrated in the BRFSS data. For this reason alone, it is essential that progressive disability health policies in Delaware be developed that focus on improving healthy behavior and limiting chronic health conditions through prevention for all people, both now and in the future.

Finally, it is important to acknowledge that disability is connected to health in various ways. No individual is completely immune from disability, even when prevention strategies and policies that support healthy behaviors are put into place. Conceptualizing disability as part of the human experience that all individuals will face at some point should remind policymakers and society at large that there can be no delay in making perceptual and environmental changes towards inclusiveness and accessibility. The design and implementation of good disability health policies in Delaware could provide the example and the incentive for just the kind of broad changes that are necessary at the national level.

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[1] CENTERS FOR DISEASE CONTROL AND PREVENTION, U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES, BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM SURVEY DATA (2006–2008), *available at* http://www.cdc.gov/BRFSS (last visited March 20, 2010).

[2] *Id.*

[3] U.S. Department of Health and Human Services, Office on Disability, About Us, http://www.hhs.gov/od/about/index.html (last visited March 19, 2010).

[4] Elizabeth DePoy & Stephen Gilson, *Resolving the Concept Wars in Disability and Health*, presentation at the APHA 137th Annual Meeting and Expo (Nov. 10, 2009).

[5] *See generally* COMMITTEE ON DISABILITY IN AMERICA, FUTURE OF DISABILITY IN AMERICA (Marilyn J. Field & Alan Jette eds., National Academies Press 2007).

[6] German R. Nunez, *Culture and Disabilities, in* DISABILITY AND PUBLIC HEALTH 65 (Charles E. Drum, et al., eds., American Public Health Association 2009).

[7] CHERRY ENGINEERING SUPPORT SERVICES, INC., PREPARED FOR THE INTERAGENCY COMMITTEE ON DISABILITY RESEARCH, FEDERAL STATUTORY DEFINITIONS OF DISABILITY 1 (2003).

[8] *See generally* CENTERS FOR DISEASE CONTROL AND PREVENTION, U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES, BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM SURVEY QUESTIONNAIRE (2006–2008), *available at* http://www.cdc.gov/brfss/questionnaires/english.htm (last visited March 20, 2010).

[9] CENTERS FOR DISEASE CONTROL AND PREVENTION, *supra* note 1.

[10] COMMITTEE ON DISABILITY IN AMERICA, *supra* note 5, at 62.

[11] *Id.*

[12] *See* Healthy People 2010 Home Page, http://www.healthypeople.gov.

[13] *See* Healthy Delawareans with Disabilities: Bridging the Gap Home Page, http://www.gohdwd.org/ about.html.

[14] THE CENTER FOR UNIVERSAL DESIGN, THE PRINCIPLES OF UNIVERSAL DESIGN, *available at* http://www.design.ncsu.edu/cud/about_ud/udprinciplestext.htm (last visited March 19, 2010).

[15] Interview with A. Rose, October 2009.

[16] AMPUTEE COALITION OF AMERICA, PROSTHETIC COVERAGE IS GOOD FOR WORKING FAMILIES, *available at* http://www.amputee-coalition.org/advocacy/fact_sheets/campaign_fact_sheet.pdf (Last visited March, 19 2010).

[17] R.K. Scotch, *Disability Policy: An Eclectic Overview*, 11 J. OF DISABILITY POL'Y STUDS. 6, 7 (2000).
[18] Association of University Centers on Disabilities, 2009 Annual Meeting and Conference, http://www.aucd.org/template/page.cfm?id=641.
[19] CENTERS FOR DISEASE CONTROL AND PREVENTION, *supra* note 1.
[20] *Id.*
[21] Healthy Delawareans with Disabilities, *supra* note 13.
[22] Interview with Stephen Eidelman, H. Rodney Sharp Professor of Human Services Policy and Leadership at the University of Delaware, December 2009.
[23] CENTERS FOR DISEASE CONTROL AND PREVENTION, *supra* note 8. Note that all survey data and questions used in this analysis are available on the CDC BRFSS website.
[24] *See, e.g.,* Centers for Disease Control, BRFSS Data Quality, Validity, and Reliability, http://www.cdc.gov/brfss/pubs/quality.htm, (last visited March 20, 2010).
[25] All tables have been created with data analysis conducted by the Center for Disability Studies at the University of Delaware.
[26] *See, e.g.,* Centers for Disease Control, Physical Activity for Everyone, http://www.cdc.gov/physicalactivity/everyone/guidelines/adults.html (last visited March 19, 2010).
[27] U.S. DEPARTMENTS OF AGRICULTURE AND HEALTH AND HUMAN SERVICES, DIETARY GUIDELINES FOR AMERICANS: 2005, *available at* http://www.health.gov/dietaryguidelines/dga2005/document/pdf/DGA2005.pdf.
[28] GRETA KILMER ET. AL., CENTERS FOR DISEASE CONTROL, SURVEILLANCE OF CERTAIN HEALTH BEHAVIORS AND CONDITIONS AMONG STATES AND SELECTED LOCAL AREAS: BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM, UNITED STATES, 2006 (2008), *available at* http://www.cdc.gov/mmwr/ preview/mmwrhtml/ss5707a1.htm.
[29] Centers for Disease Control, Tobacco Use, Targeting the Nation's Leading Killer: At a Glance 2010, http://www.cdc.gov/chronicdisease/resources/publications/AAG/osh.htm (last visited March 19, 2010).
[30] DELAWARE HEALTH AND SOCIAL SERVICES: DIVISION OF PUBLIC HEALTH, BEHAVIORAL RISKS IN DELAWARE: 2007–2008, *available at* http://dhss.delaware.gov/dph/dpc/files/brfsreport07-08.pdf (last visited March 20, 2010); *see also* Delaware Health and Social Services, Division of Public Health 2005 Adult Smoking Prevalence Lowest on Record in Delaware, http://www.dhss.delaware.gov/dph/dpc/smoking05.html (last visited March 19, 2010).
[31] For figures on the connection between secondary health conditions and disability generally, see CENTERS FOR DISEASE CONTROL, SECONDARY CONDITIONS: ADULTS AND CHILDREN WITH DISABILITIES (2004), *available at* http://www.cdc.gov/ncbddd/factsheets/DH_sec_cond.pdf (last visited March 19, 2010).
[32] Centers for Disease Control, Chronic Disease, http://www.cdc.gov/chronicdisease/overview/index.htm (last accessed March 19, 2010).
[33] DIVISION OF PUBLIC HEALTH, DELAWARE HEALTH AND SOCIAL SERVICES, THE BURDEN OF ASTHMA (2005), *available at* http://www.dhss.delaware.gov/dhss/dph/dpc/files/asthmaburden_rpt.pdf.
[34] DELAWARE HEALTH & SOCIAL SERVICES, DIVISION OF PUBLIC HEALTH, THE BURDEN OF DIABETES IN DELAWARE (2002), *available at* http://dhss.delaware.gov/dhss/dph/dpc/files/burdenreport.pdf.
[35] Centers for Disease Control, Heart Disease Home Page, http://www.cdc.gov/heartdisease.
[36] CENTERS FOR DISEASE CONTROL, *supra* note 31.
[37] Centers for Disease Control, Oral Health, http://www.cdc.gov/chronicdisease/resources/publications/AAG/doh.htm (last visited March 19, 2010).
[38] Centers for Disease Control, Cervical Cancer Screening, http://www.cdc.gov/cancer/cervical/basic_info/screening.htm (last visited March, 19, 2010).
[39] Centers for Disease Control, Colorectal Cancer Screening Guidelines, http://www.cdc.gov/cancer/Colorectal/basic_info/screening/guidelines.htm (last visited March 19, 2010).
[40] Centers for Disease Control, HIV/AIDS in the United States, http://www.cdc.gov/hiv/resources/factsheets/us.htm (last accessed March 19, 2010).
[41] U.S. Census Bureau, Population Estimates, http://www.census.gov/popest/states/NST-ann-est.html (last visited March 20, 2010).
[42] JAMES BAKER, ET AL., UNITED CEREBRAL PALSY, AN EVALUATION OF THE DISABILITY EXPERIENCE

BY THE LIFE WITHOUT LIMITS PROGRAM (2008), *available at* http://www.lifewithoutlimits.org/site/DocServer/StateofDisabilityinAmerica.pdf?docID (last visited March 20, 2010).

[43] Interview with F. Breukelman, Delaware state BRFSS coordinator (December 2009).

[44] COMMITTEE ON DISABILITY IN AMERICA, *supra* note 5, at 62.

[45] DePoy & Gilson, *supra* note 4.

[46] World Health Organization, International Classification of Functioning, Disability and Health Home Page, http://www.who.int/classifications/icf/en/index.html (Last visited March 20, 2010).

[47] A. Whitelaw & J. Williams, *Relating Health Education to Health Policy,* 9 HEALTH EDUCATION RESEARCH 519, 520 (1994).