Health Impact Review of HB 1697
Concerning health coverage for young adults
(2020 Legislative Session)

January 14, 2020

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Full review

The full Health Impact Review report is available at:

https://sboh.wa.gov/Portals/7/Doc/HealthImpactReviews/HIR-2020-05-HB1697.pdf

Acknowledgements

We would like to thank the key informants who provided consultation and technical support during this Health Impact Review.

Contents

Executive Summary
HB 1697, Concerning health coverage for young adults (2020 Legislative Session)

Evidence indicates that HB 1697 has the potential to increase access to health insurance for young adults 19 to 26 years of age who are income-eligible, regardless of immigration status, which may increase access to and use of healthcare services, improve health outcomes, and decrease health inequities by immigration status.

BILL INFORMATION

Sponsors: Macri, Lekanoff, Thai, Jinkins, Dolan, Robinson, Pettigrew, Peterson, Stonier, Valdez, Ortiz-Self, Wylie, Doglio, Riccelli, Santos, Appleton, Ryu, Stanford, Bergquist, Goodman, Pollet, Gregerson, Frame

Summary of Bill:

- Directs Health Care Authority (HCA) to extend Apple Health coverage to young adults 19 to 26 years of age who are income-eligible, regardless of immigration status.
- Specifies that the amount, scope, and duration of healthcare services must be the same as that provided to individuals under categorically needy medical assistance.
- Requires HCA to provide a seamless transition in coverage, and to manage application and renewal processes to maximize enrollment of eligible individuals.
- Directs HCA to seek federal funding to defray state costs associated with this coverage.

HEALTH IMPACT REVIEW

Summary of Findings:

This Health Impact Review found the following evidence for provisions in HB 1697:

- **Very strong evidence** that HCA extending Apple Health coverage to young adults 19 to 26 years of age who are income eligible, regardless of immigration status, would increase access to health insurance for these individuals.
- **Very strong evidence** that increased access to health insurance would improve health outcomes.
- **Very strong evidence** that increased access to health insurance would increase access to and use of healthcare services.
- **Very strong evidence** that increased access to and use of healthcare services would improve health outcomes.
- **Very strong evidence** that improved health outcomes would decrease health inequities by immigration status.

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Introduction and Methods

A Health Impact Review is an analysis of how a proposed legislative or budgetary change will likely impact health and health disparities in Washington State (RCW 43.20.285). For the purpose of this review 'health disparities' have been defined as the differences in disease, death, and other adverse health conditions that exist between populations (RCW 43.20.270). This document provides summaries of the evidence analyzed by State Board of Health staff during the Health Impact Review of House Bill 1697 (HB 1697).

Staff analyzed the content of HB 1697 and created a logic model depicting possible pathways leading from the provisions of the bill to health outcomes. We consulted with experts and contacted key informants about the provisions and potential impacts of the bill. We conducted an objective review of published literature for each pathway using databases including PubMed, Google Scholar, and University of Washington Libraries. More information and detailed methods are available upon request.

The following pages provide a detailed analysis of the bill including the logic model, summaries of evidence, and annotated references. The logic model is presented both in text and through a flowchart (Figure 1). The logic model includes information on the strength-of-evidence for each relationship. The strength-of-evidence has been defined using the following criteria:

- **Very strong evidence:** the review of literature yielded a very large body of robust evidence supporting the association with few if any contradictory findings. The evidence indicates that the scientific community largely accepts the existence of the association.
- **Strong evidence:** the review of literature yielded a large body of evidence on the relationship (a vast majority of which supported the association) but the body of evidence did contain some contradictory findings or studies that did not incorporate the most robust study designs or execution or had a higher than average risk of bias; or there were too few studies to reach the rigor of "very strong evidence;" or some combination of these.
- **A fair amount of evidence:** the review of literature yielded several studies supporting the association, but a large body of evidence was not established; or the review yielded a large body of evidence but findings were inconsistent with only a slightly larger percentage of the studies supporting the association; or the research did not incorporate the most robust study designs or execution or had a higher than average risk of bias.
- **Not well researched:** the review of literature yielded few if any studies or only yielded studies that were poorly designed or executed or had high risk of bias.

This review was subject to time constraints, which influenced the scope of work for this review. The annotated references are only a representation of the evidence and provide examples of current research. In some cases only a few review articles or meta-analyses are referenced. One article may cite or provide analysis of dozens of other articles. Therefore, the number of references included in the bibliography does not necessarily reflect the strength-of-evidence. In addition, some articles provide evidence for more than one research question, so are referenced multiple times.

Analysis of HB 1697 and the Scientific Evidence

Summary of relevant background information

- The Personal Responsibility and Work Opportunity Act of 1996 restricted legal immigrants' access to federally-funded health insurance for the first five years they have lawful status in the U.S. (known as the five-year-bar).[5,6,17]
- Federal law prohibits the use of federal Medicaid dollars for the provision of care for individuals who are undocumented, Deferred Action for Childhood Arrivals (DACA) recipients, and lawfully-present individuals who have not met the five-year-bar.[1,3,4]
- Under the Washington State Apple Health plan, young adults aged 19 years of age and older who meet income-eligibility may continue to qualify for Apple Health on an adult plan.[1] Currently, only individuals who are citizens and individuals who are lawfully-present immigrants who have met or are exempt from the 5-year-bar are eligible for Apple Health for Adults coverage (personal communication, HCA, January 2020).[2]
- While Washington State extended the Apple Health program to children 18 years of age and younger who are income-eligible, regardless of immigration status, young adults who are undocumented age out of eligibility at 19 years of age.[1]
- Young adult alumni of the foster care program are eligible for Apple Health coverage until 26 years of age.[1]
- The Patient Protection and Affordable Care Act (ACA) allows young adults to remain on their parent's health plan until 26 years of age.[3]

Summary of HB 1697

- Directs HCA to extend Apple Health coverage to young adults 19 to 26 years of age who are income-eligible, regardless of immigration status.
- Specifies that the amount, scope, and duration of healthcare services must be the same as that provided to individuals under categorically needy medical assistance.
- Requires HCA to provide a seamless transition in coverage, and to manage application and renewal processes to maximize enrollment of eligible individuals.
- Directs HCA to seek federal funding to defray state costs associated with this coverage.

Health impact of HB 1697

Evidence indicates that HB 1697 has the potential to increase access to health insurance for young adults 19 to 26 years of age who are income-eligible, regardless of immigration status, which may increase access to and use of healthcare services, improve health outcomes, and decrease health inequities by immigration status.

Pathway to health impacts

The potential pathway leading from the provisions of HB 1697 to decreased health inequities are depicted in Figure 1. This analysis found very strong evidence that HCA extending Apple Health coverage to young adults 19 to 26 years of age who are income eligible, regardless of immigration status, would increase access to health insurance for these individuals.[5-19] There is very strong evidence and it is well-documented that access to health insurance leads to improved health outcomes[20-32] and to increased access to and use of healthcare services,[20,21] including for young adults. There is also very strong evidence that increasing access to and use of healthcare services will improve health.[20,33-35] In turn, since HB 1697 extends coverage to income-eligible DACA recipients and young adults 19 to 26 years of age who are undocumented or who are legally-present but have not met the five-year-bar, there is also very strong evidence that HB 1697 will decrease inequities by immigration status.[5-7,9,10,12,15,16,18,36]

Scope

Due to time limitations, we only researched the most direct connections between the provisions of the bill and decreased health inequities and did not explore the evidence for all possible pathways. For example, we did not evaluate potential impacts related to:

- Current individuals receiving health coverage through the Compact of Free Association (COFA) Islander Health Care plan. Individuals aged 19 to 26 who currently receive care through the COFA Islander Health Care plan would be switched to this health plan as a result of extended coverage (personal communication, HCA, January 2020).
- Individuals aged 19 to 26 who have already aged out of eligibility for Apple Health and who may be eligible to reapply as a result of extended coverage.

Magnitude of impact

Individuals may enter and remain in the U.S. under a variety of circumstances and immigration statuses, including as legal aliens, refugees, migrants, detainees, asylum-seekers, DACA recipients, or as individuals who are undocumented.[37] Access to healthcare varies by immigration status, and individuals and communities experience different barriers to care based on immigration status, nativity, length of time in the U.S., and level of acculturation.[9,12,13,16,38,39]

HB 1697 extends coverage to income-eligible individuals 19 to 26 years of age, regardless of immigration status, including DACA recipients and young adults who are undocumented or who are legally-present but have not met the five-year-bar. There is limited data about these groups in Washington State. The Migration Policy Institute estimates there are approximately 229,000 individuals who are undocumented living in Washington State.[40,41] An estimated 25,000 individuals are eligible for DACA, and 17,140 (67%) had DACA status in August 2018.[42] The Washington State Office of Financial Management (OFM) estimated that, in 2017, approximately 3.5% (264,000) of the population included individuals who are undocumented, with 90.4% (242,000) of these individuals 18 to 64 years of age.[18,43] In addition, approximately 40% of individuals who are undocumented in Washington State had a family income below 200% of the federal poverty level.[43] Lastly, 40.7% of individuals who are undocumented in Washington State are uninsured.[18]

While it is not possible to predict exactly how many individuals aged 19 to 26 who are income-eligible would be impacted by HB 1697, HCA anticipates that HB 1697 would increase Apple Health caseload (personal communication, HCA, January 2020).

Logic Model

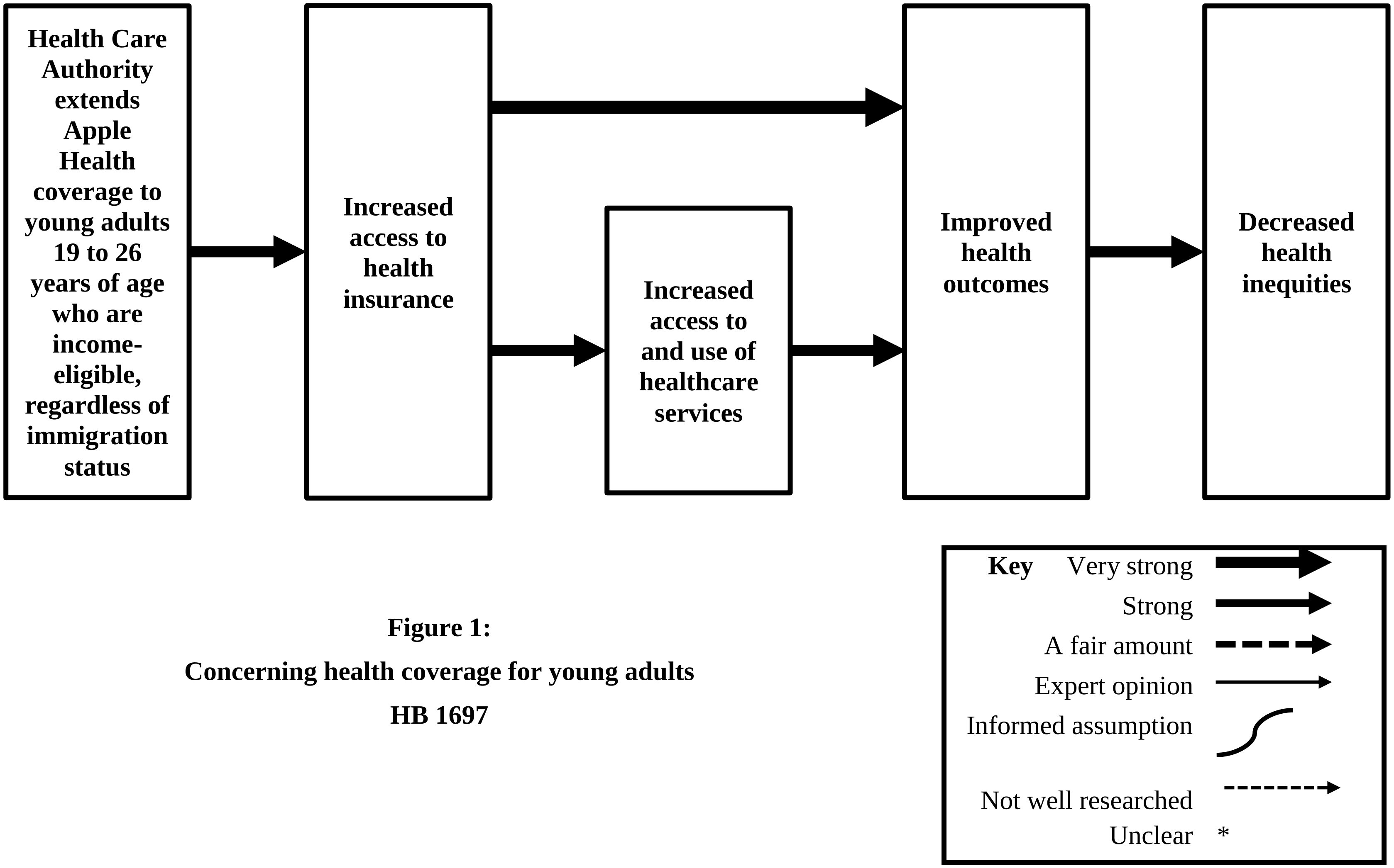

Figure 1:

Concerning health coverage for young adults

HB 1697

Summaries of Findings

Will Health Care Authority extending Apple Health coverage to young adults 19 to 26 years of age who are income-eligible, regardless of immigration status, increase access to health insurance for these individuals?

There is very strong evidence that Washington State Health Care Authority (HCA) extending Apple Health coverage to young adults 19 to 26 years of age who are income eligible, regardless of immigration status, would increase access to health insurance for these individuals.

Immigrant communities in the U.S. have restricted access to health insurance.[5-8,10,12-16] Access is primarily restricted through federal and state legislation.[5-11] Federal and state legislation restricts immigrant access to health insurance coverage and care, regardless of immigration status.[5-11] The Personal Responsibility and Work Opportunity Act of 1996 restricted legal immigrants' access to federally-funded health insurance for the first five years they have lawful status in the U.S. (known as the five-year-bar).[5,6,17] However, the Act specified that Medicaid would provide emergency coverage, regardless of immigration status.[6] In 2002 and 2013, the federal government issued exceptions to the Act that allowed states to waive the 5-year-bar and provide Medicaid and Children's Health Insurance Program (CHIP) coverage to immigrant pregnant women and children.[6] While the ACA and corresponding Medicaid expansion increased health insurance access for many communities and enabled lawfully-present immigrants to purchase and receive subsidies for private health insurance through the Health Exchanges, it continued to exclude immigrants from receiving Medicaid for five years and made individuals who are undocumented and DACA recipients ineligible for public coverage or private insurance through the marketplace.[5,6,8,17] Health coverage expansion as a result of the ACA has also been uneven across groups depending on immigration status in Washington State.[18]

HCA defines four citizenship and immigration status groups for the purpose of health insurance coverage eligibility. These four eligibility groups include Lawfully Present "Qualified Alien," Lawfully Present "Unqualified Alien," Not Lawfully Present (Undocumented) Immigrant, and Citizen or U.S. National.[19] Currently, Washington State offers Medicaid coverage to lawfully residing children and pregnant women without the 5-year wait period, and to all pregnant women regardless of their immigration status.[6] Despite these options, individuals who are undocumented, especially adults over 18 years of age who are undocumented, have the most restricted access to health care coverage in Washington State,[19] and individuals who are undocumented are 11.1 times as likely to be uninsured as U.S.-born citizens in the state.[18]

While restricted access to insurance impacts all immigrant groups, a multi-country literature review of 66 articles published between 2004 and 2014 examining barriers to accessing health care for individuals who are undocumented concluded that the largest access barrier was "national policies excluding [individuals who are undocumented] from receiving health care."[9] The study concluded that, "because insurance was generally required for affordable care or required to receive services at all, these laws effectively barred access to care [for immigrants who are undocumented]."[9]

Overall, HB 1697 extends coverage to income-eligible individuals 19 to 26 years of age, regardless of immigration status, including DACA recipients and young adults who are undocumented or who are legally-present but have not met the five-year-bar, and it is well-documented that these individuals lack access to health insurance. Since provisions in the bill require HCA to provide a seamless transition in coverage and to manage application and renewal processes to maximize enrollment of eligible individuals, and since these individuals may not otherwise have access to health insurance, there is very strong evidence that HB 1697 will increase access to health insurance for these individuals.

Will increasing access to health insurance improve health outcomes?
There is very strong evidence and it is well-documented that access to health insurance leads to improved health outcomes, including for young adults. Healthy People 2020 finds that individuals who are uninsured are, "more likely to have poor health status…and more likely to die prematurely" than individuals with insurance.[20] The author of a systematic literature review of 54 analyses (in 51 distinct studies) concluded, "[t]here is a substantial body of research supporting the hypotheses that having health insurance improves health."[21] In addition, evidence indicates that health insurance is associated with better general,[23] physical, and mental health, and that this increase in health status is greatest for participants in the lowest income group (< 300% of the federal poverty level).[22] A 2019 randomized study by the National Bureau of Economic Research found that health insurance reduces mortality.[24]

More specifically, in a study of individuals who experienced a health shock caused by an unintentional injury or a new chronic condition, uninsured individuals reported significantly worse short-term health and were more likely to not be fully recovered and no longer in treatment at follow-up compared to those with health insurance.[25] Having health insurance has also been associated with improved health outcomes for a number of conditions including stroke, heart failure, diabetes, melanoma, heart attack, serious injury or trauma, and serious acute conditions with hospital admission.[26-29] Further, having health insurance was associated with improved management and control of diabetes, hypercholesterolemia, and hypertension.[30] Among patients aged 18–64 years old, those with insurance have been shown to have a significantly lower risk of death than uninsured patients for cervical,[44] head and neck,[45] breast, colorectal, lung, prostate, and bladder cancers and non-Hodgkin lymphoma.[31,32]

Overall, increasing access to health insurance would improve health outcomes, especially for individuals who would otherwise be uninsured.

Will increasing access to health insurance increase access to and use of healthcare services?
There is very strong evidence and it is well-documented that increasing access to health insurance will increase access to and use of healthcare services, including for young adults. The Healthy People 2020 initiative noted that access to health insurance is the first step to improving access to health services generally as it provides entry into the healthcare system.[20] For example, individuals who are uninsured are less likely to receive medical care and more likely to be diagnosed later than individuals with insurance.[20] A systematic literature review of 54 analyses (in 51 distinct studies) found that 43 analyses reported a statistically significant and positive relationship between health insurance and medical care use and health.[21]

Access

Evidence shows that lack of insurance is among the leading barriers to healthcare access.[21,46,47] There is very strong evidence that access to health insurance would increase access to and use of healthcare services. For example, evidence indicates that being uninsured is associated with a higher likelihood of not having a usual place for medical care and that having insurance coverage at any given time in the past year increased the likelihood that adults had a usual place for care.[48-50] One study estimated that adults aged 18 to 64 years of age who did not have health insurance for more than a year at the time of the survey were nearly six times as likely to not have a usual source of care compared to those who were continuously insured.[51] Further, evidence indicates that uninsured individuals more frequently reported delaying medical care (50.87%) and being unable to get medical care (38.87%), dental care (48.18%), mental health care (16.87%), and prescription drugs (40.23%) than insured individuals.[50]

In addition, because coverage for individuals who are undocumented, DACA recipients, and lawfully-present individuals who have not met the five-year-bar are excluded from the ACA, safety net providers (e.g., federally qualified health centers, community health centers, community organizations) may face funding and reimbursement challenges through the ACA, which could result in further reduction in coverage and care for these individuals.[10] Even after evaluating different combinations of vulnerability characteristics, such as health status, education, and region of residence, lacking health insurance had the strongest association with unmet health care needs, followed by family income and having a regular source of care.[48]

Use

Evidence indicates that health insurance is associated with increased use of healthcare services, such as visiting a doctor or healthcare professional.[49] For example, health insurance has been associated with higher rates of diagnosis of diabetes, hypercholesterolemia, and hypertension among nonelderly adults.[30] One study found that compared to those with continuous health insurance coverage and the same chronic conditions, persons without health insurance in the previous year were five to six times as likely to forgo needed care if they had hypertension (42.7% versus 6.7%), diabetes (47.5% versus 7.7%), and asthma (40.8% versus 8.0%).[51] Further, having health insurance has been positively associated with receiving recommended preventive care.[26] A 2012 study, found that having health insurance was significantly associated with a greater likelihood of receiving the influenza vaccine; tetanus and diphtheria toxoid (Td) or tetanus, diphtheria, and acellular pertussis (Tdap) vaccine; and the pneumococcal vaccine (PPSV).[52] Further, vaccine coverage for influenza, PPSV, shingles, and human papillomavirus (HPV) were two to three times higher among those with health insurance.[52]

A number of studies have used a quasi-experimental approach to evaluate use of healthcare services after statewide changes occurred following events such as the Massachusetts Health Care Reform in 2006, the Oregon Health Insurance Experiment in 2008, and Medicaid expansion. Evidence following the Oregon Health Insurance Experiment indicates that enrollment in Medicaid was associated with increased hospital admissions, outpatient visits, and prescription drug use; increased compliance with recommended preventive care; an increase in perceived access to and quality of care; and declines in exposure to substantial out-of-pocket medical expenses and medical debts.[53,54] Further, insured participants were more likely to receive preventive screening services for body mass index (BMI), blood pressure, smoking, Pap test, mammography, chlamydia, and diabetes.[55] Finally, evidence from Medicaid expansion and the health care reform in Massachusetts indicates that an increased rate of insurance coverage is associated with increased use of healthcare services, and higher rates of diagnosis of chronic health conditions, particularly among adults with low-incomes.[22,56]

Therefore, increasing access to health insurance will likely increase access to and use of healthcare services.

Will increasing access to and use of healthcare services improve health outcomes?
There is very strong evidence that increasing access to and use of healthcare services will improve health. Healthy People 2020 states that access to healthcare must be improved by increasing access to health insurance coverage, health services, and timeliness of care to promote and maintain health, prevent and manage disease, reduce unnecessary disability and premature death, and achieve health equity.[20] There is a large body of evidence supporting the positive association between use of health services for the early detection and treatment of physical and mental health disorders[33] and improved health outcomes. Since there is strong consensus in the scientific literature supporting this association, we are providing only a few examples here. For example, the U.S. Preventive Services Task Force (USPSTF) found evidence to support that screening tests for human immunodeficiency virus (HIV) are accurate and that antiretroviral therapy (ART) reduces the risk of death and sexual transmission of HIV.[34] Another study from USPSTF found that behavioral therapy and pharmacotherapy in combination demonstrated an 82% increase in tobacco cessation when compared to minimal intervention or usual standard of care.[35] While these examples do not indicate that all treatments are effective, they illustrate that evidence-based treatments are available.

Will improving health outcomes decrease health inequities?
There is very strong evidence that HB 1967 has the potential to decrease inequities by immigration status.

Overall, immigrants in the U.S. are less likely to have health insurance (due to federal and state regulations and employment in jobs less likely to provide insurance), less likely to receive preventive care, and more likely to delay seeking health services.[7,12,16,36] A 2019 report by the OFM found that, “because of the faster health coverage gains in the citizen groups through [key ACA coverage expansion programs], the coverage disparities between the non-citizens, particularly [individuals who are undocumented], and citizens widened.”[18] The found that, “the gap between the [individuals who are undocumented] group’s uninsured rate and that of the U.S.-born citizen group more than doubled between 2013 and 2017. In 2017, [individuals who are undocumented] were 11.1 times as likely to be uninsured as U.S.-born citizens, when other population characteristics are held as equal.”[18] While approximately 5.7% of U.S.-born citizens in are uninsured, 40.7% of individuals who are undocumented in Washington State are uninsured.[18] Legally-present immigrants were twice as likely to be uninsured as U.S.-born citizens.[18]

In addition to inequities in access to health insurance, individuals who are undocumented also experience higher rates of morbidity and mortality.[10] For example, individuals who are undocumented have lower immunization rates, untreated mental health issues, and are less likely to follow-up for treatment for infectious diseases, tuberculosis, and HIV.[9] A systematic review found that individuals who are undocumented "are at highest risk of depressive symptoms and are disproportionately impacted by [post-traumatic stress disorder], anxiety, and depression when compared to other documented immigrants and citizens."[10] Immigrants are also more likely to experience poor reproductive health outcomes, including unintended pregnancy, unintended birth, sexually transmitted infections, adverse birth outcomes, and longer durations of infertility than the general population.[5,6,12,15,16] Individuals who are undocumented experience worse reproductive health outcomes than immigrants with legal status or the general population.[12]

Since HB 1697 extends coverage to income-eligible DACA recipients and young adults 19 to 26 years of age who are undocumented or who are legally-present but have not met the five-year-bar, there is very strong evidence that HB 1697 will decrease inequities by immigration status.

Annotated References

1. **Apple Health (Medicaid) coverage: Eligilbity. 2020; Available at: https://www.hca.wa.gov/health-care-services-supports/apple-health-medicaid-coverage/eligibility. Accessed.**
Health Care Authority provides eligiblity requirements for Apple Health programs, including program eligiblity for adults, children, and by immigration status.

2. **Authority Washington State Health Care. Citizenship and Alien Status Guide. 2018.**
The Washington State Health Care Authority provides an overview of potentially eligible programs based on four immigration status groups: 1) U.S. citizens; 2) Lawfully-present qualified immigrants; 3) Lawfully present non-qualified immigrants; and 4) individuals who are undocumented. This summary also provides further definitions and clarifications for immigration status categories for the purpose of health insurance coverage.

3. **Congress 111th. The Patient Protection and Affordable Care Act. *Public Law 111-148*2010.**
Subpart B--Eligiblity Determinations of the Patient Protection and Affordable Care Act outlines requirements related to citizenship and immigration status to access health coverage.

4. **Health Coverage for immigrants. 2020; Available at: https://www.healthcare.gov/immigrants/coverage/. Accessed.**
Through HealthCare.gov, the U.S. Centers for Medicare & Medicaid Services provides eligibility information for health insurance coverage by immigration status.

5. **Dehlendorf C., Rodriguez M. I., Levy K., et al. Disparities in family planning. *American Journal of Obestrics & Gynecology.* 2010;202(3):214-220.**
Dehlendorf et al. provide a descriptive summary of reproductive health disparities by race/ethnicity and socioeconomic status, and the barriers women of color and women of low socioeconomic status experience in accessing family planning services. They present background information that minority women and those with lower socioeconomic status are more likely to experience poor reprodutive health outcomes, including unintended pregnancy, unintended births, abortions, and teen pregnancies. They also state that low socioeconomic status has also been associated with earlier initiation of sexual intercourse, and adolescent pregancy and childbirth, and state that "undesired or mistimed pregnancies...significantly impact the course of a woman's life, and disparities in the ability to plan pregnancies as desired can contribute to the cycle of disadvantage experienced by vulnerable populations." Delendorf et al. present the barriers to accessing family planning services using a framework developed by Kilbourne 2006 to examine barriers related to patient preferences and behaviors, health care system factors, and provider-related factors. Patient preferences and behaviors include barriers such as health literacy; education level; culturally-based myths and misinformation; historical trauma and discrimination; cultural and familial differences in communication, attitudes, and practices related to reproductive health; and culturally and linguistically appropriate care and services. Health care system factors include, changes in federal and state legislation and funding (including Title X, Medicaid expansion and the Hyde Amendment), insurance status, insurance

coverage of contraception, and cost of care (e.g. abortions). Dehlendorf et al. also state that "immigrants often face unique challenges accessing family planning services due to language and insurance coverage barriers." Immigrants also face barriers due to legislative changes and the Personal Responsiblity and Work Opportunity Act of 1996 which, "restricted legal immigrants' access to publically financed health care for their first 5 years of residence." Dehlendorf et al. explain that immigrants are only elgible for "Emergency Medicaid" which only covers acute illnesses and obestric deliverty, not preventive services like contraception. Provider-related barriers to care include provider biases and discrimination. Dehlendorf et al. also present five potential solutions to reduce disparities in access to care: 1. Provide universal converage for contraceptive methods (similar to the Family PACT program in California); 2. Provide public funding for abortion services; 3. Increase training related to abortions in obstetrics and gynecology and family medicine residency programs; 4. Provide information about birth control options in ways that are culturally and linguistically appopriate; and 5. Train providers to provide quality and patient-centered family planning care to all women.

6. **Hasstedt K. Toward Equity and Access: Removing Legal Barriers to Health Insurance Coverage for Immigrants.** ***Guttmacher Policy Review.*** **2013;16(1):2-8.**
Hasstedt outlines curent and historic federal legislation restricting immigrants' access to health insurance and health care in the United States. The 1996 Personal Responsiblity and Work Opportunity Reconciliation Act states that individuals who immigrated to the United States after 1996 are ineligible for Medicaid or the Children's Health Insurance Program (CHIP) for the first five years they have "lawful status," effectively creating a "five year ban" on federally-funded health insurance. The act does specify that Medicaid will provide emergency coverage, including costs related to labor and delivery, regardless of immigration status. Also, in 2002 and 2013, the federal government issued exceptions to the law that allow states waive the 5 year ban and provide Medicaid and CHIP coverage to immigrant pregnant women and children. Washington State currently offers coverage to lawfully residing children and pregnant women without the 5-year wait period, and to all pregnant women regardless of their immigration status. While the Affordable Care Act (ACA) does not address the five-year-ban, it does enable lawful immigrants to purchase and recieve subsidies for private health insurance through the exchanges. Undocumented immigrants remain ineligible under the ACA to purchase private insurance, and grantees under the Deferred Action for Childhood Arrivals (DACA) program are ineligble for public and private health insurance. DACA grantees and undocumented immigrants are only eligible for Medicaid in states that do not use federal dollars to fund their Medicaid program and provide coverage regardless of immigration status, or for priviate insurance coverage obtained outside the exchanges. In addition, "immigrants are overrepresented in low-wage jobs that are unlikely to offere employer-sponsored health coverage." As a result, approximately 45% of noncitizen immigrant women of reproductive age are uninsured, compared to 24% of naturalized immigrants, and 18% of U.S. born women. The author concludes that current policies greatly hinder immigrants to access health insurance and health care.

7. **Association National Family Planning & Reproductive Health. Policy Brief--Title X: Helping Ensure Access to High-Quality Care. 2015.**
Title X of the Public Health Service Act was enacted in 1970 and is known as the "national family planning progarm." It is the only federal funding source for family planning services in the United States, and provides "high-quality family planning services and related preventive

health care to low-income and uninsured individuals who may otherwise lack access to health care." Funding provides care for both men and women regardless of ability to pay, insurance status, or immigration status. Approximately 70% of Title X patients have incomes below 100% of the Federal Poverty Level and 63% are uninsured. This policy brief outlines service by socioeconomic status, insurance status, race and ethnicty, and geography. It states that women, women of color, immigrant women, and women living in rural or frontier areas are less likely to have health insurance. An estimated 40% of women of reproductive age with low-incomes lacked health insurance. Of all women without health insurance, 39% are immigrants due to "policies and regulations restricting access to public and private health insurance as well as the overrepresentation of immigrants in jobs unlikely to provide health insurance."

8. **Dennis A., Blanchard K., Cordova D., et al. What happens to the women who fall through the cracks of health care reform? Lessons from Massachusetts. *Journal of Health Politics, Policy, and Law.* 2013;38(2):393-419.**
In 2006, Massachusetts created Commonwealth Care, which expanded coverage to people living in Massachusetts with an income at or below 300 percent of the federal poverty level, without access to employer-sponsored health insurance, and not eligible for other public insurance (including Medicaid). Under the Commonwealth Care program, primary and preventive services are covered, including family planning services, prescription contraceptives, and abortion care. This system served as a model for the Affordable Care Act. The authors evaluated the impact of Massachusetts heatlh care reform on the ability of low-income women to access health insurance and reproductive health services. They completed a review of all Commonwealth Care plans, conducted surveys with family planning staff from 12 Massachusetts Department of Public Health family planning clinics, completed in-depth interviews with 16 family planning staff, and held nine focus groups with low-income women. The authors found that, while access increased overall, immigrants, minors and young adults, and women living outside urban areas had less access to health services. The authors found four main barrires for immigrant women to access health care: lack of plan information available in Spanish, lack of insurance options avilable to immigrants, fear of deportation or other legal action, and lack of awareness about services available at public health clinics. The authors state the family planning clinics and other safety-net providers (defined as those that provide a significant level of care to low-income, uninsured, and vulnerable populations) can help to reduce barriers to access and "are critical for helping the newly insured navigate their insurance plans while also providing affordable services to those inelgible for subsidized plans or who are temporarily uninsured." The authors also state, "our results suggest that immigrants who do not qualify for coverage may be unaware that they can continue to get low- or reduced-cost care at safety net providers." They also support recommendations to simplify Medicaid eligibility forms and to extend the period between eligiblity checks to make it more likely that individuls recieve continuous coverage.

9. **Hacker K., Anies M., Folb B. L., et al. Barriers to health care for undocumented immigrants: a literature review. *Risk Management and Healthcare Policy.* 2015;8:175-183.**
Hacker et al. completed a literature review of 66 articles published in the 10 years prior to this review to examine barriers to accessing health care for undocumented immigrants, and identifying strategies to address these barriers. Articles in the review included research from multiple countries, including the United States. Policy barriers to accessing health care included health insurance laws and documentation requirements to get services. Health system barriers

included constraints related to work conflicts and transporation, constraints related to lack of translation services and culturally competent care, discriminantion in the clinic environment, and complex paperwork or registration systems to receive care. Individual level barriers included fear of deportation, stigma, shame about seeking services, lack of social capital, lack of financial capital to pay for services, limited health literacy or knowledge about the health care system, limited English proficiency, and cultural differences. Overall, the largest barrier identified through the review was "national policies excluding undocumented immigrants from receiving health care" with the majority of policies restricting access to health insurance. The authors state, "because insurance was generally required for affordable care or required to recieve services at all, these laws effectively barred access to care [for undocumented immigrants]." The authors identified five catetories of recommendations: 1. Change policies; 2. Extend insurance options; 3. Expand the safety net; 4. Train providers; 5. Educate undocumented immigrants on navigating the health care system. Specific to changing policy, recommendations include expanding health care access regardless of immigration or citizenship status, giving full rights to health care for all immigrants, and delaying deportation until care is completed. Recommendations related to insurance included allowing all immigrants access to a state funded health plan, providing insurance to all workers regardless of immigration status, providing a limited insurance option to preventive care or by disease, and offering sliding-scale payment systems. Safety net recommendations included expanding the capcity of clinics (e.g. federally qualified health centers, public hospitals, community health centers, state and local public health clinics) to provide care to immigrants through additional state support, and providing health education in alternative settings (e.g. faith-based organizations). Training recommendations included educating providers to understand the specific medical needs of immigrant communities, to use interpretation services, and to understand immigration laws. Health literacy recommendations included educating immigrants about the health care system and their right to health care as well as connecting immigrants with "culturally appopriate navigators in health care environments" to help navigate services. The authors note that an important limitation is that, "many of the recommendations we have identified in the reviewed articles have not been tested so it is difficult to ascertain whether or not they would be deemed successful."

10. **Martinez O., Wu E., Sandfort T., et al. Evaluating the impact of immigration policies on health status among undocumented immigrants: a systematic review. *J Immigr Minor Health.* 2015;17(3):947-970.**

Martinez et al. completed a literature review of 40 articles published between 1990 and 2012 to determine how immigration laws impact access to health services and health outcomes for undocumented immigrants. The review included research from multiple countries, including the United States. Thirty articles were related to access to health services. The authors noted barriers including policies that limit or restrict access to insurance or care, financial barriers and cost of care, complex administrative prodecures to apply for care, fear of deportation or legal action, harrassment and discrimination from providers, institutalized discrimination, cultural differences, language barriers, low health literacy and knowledge of the health care system, presence of police checkpoints at health departments, identification requirements to recieve care, and criminalization of undocumented status. Specific to the Affordable Care Act, the atuhors note, "healthcare safety net hospitals and clinics, which are the main providers of health care and services for undocumented immigrants, might face funding and reimbursement challenges by [Affordable Care Act], making it impossible to continue providing services to undocumented immigrants. [Affordable Care Act's] exclusion and denial of participation of undocumented immigrants may lead to further marginalization of undocumented immigrants and alienation from health services..." The authors also noted recommendations from the literature. They recommend revising national policies to extend access to comprehensive primary care (including preventive care like vaccinations and infectious disease screening), prenatal care, and chronic disease management to decrease risk to public health and reduce the cost of emergency care. They recommend developing culturally and linguistically appopriate programs and training providers in cultural competency, linguistic competency, and cultural diversity. They also recommend that health care providers develop relationships and referral systems with community organizations to connect immigrants with information about their rights, citizenship pathways, and educational opportunities. Lastly, they recommend developing new support strategies for safety-net health care facilities (e.g. federally qualified health centers, community health centers).

11. **Rich E. Policy Solutions to Improving Access to Coverage for Immigrants. National Family Planning and Reproductive Health Association; 2016.**
This report from the National Family Planning and Reproductive Health Association outlines policy solutions to improve access to health coverage for immigrants in the United States. The report states that access to health coverage and care for immigrants was strongly limited by the 1996 Personal Responsibility and Work Opportunity Reconciliation Act. The act prevented and delayed many immigrants from accessing federal health insurance coverage and care. Other barriers to accessing services include immigration status, limited English proficiency, socioeconomic status, geography, stigma, marginalization, reimbursement rates, provider shortages, and cultural competency. The report states that, without federal changes, states and safety-net providers will continue to be responsible for filling gaps in care. Recommendations to improve access include, establishing a State Basic Plan, which would provide coverage for the ten categories of essential health services outlined in the Affordable Care Act to low-income individuals who have completed or are in the five-year-bar and provide federal dollars for coverage; eliminate the five-year-bar on Medicaid and CHIP enrollment; allowing all immigrants regardless of status the opportunity to purchase marketplace plans with tax credits; and remove proof of citizenship requirements to enroll in health coverage.

12. **Munro K., Jarvis C., Munoz M., et al. Undocumented pregnant women: What does the literature tell us? *Journal of Immigrant and Minority Health.* 2013;15:281-291.**
Munro et al. completed a literature review of 23 articles published between 1987 and 2010 evaluating access to prenatal and obstetric health services for undocumented pregnant migrants. The authors define migrants as, "individuals who...choose to leave their home countries and establish themselves either permanently or temporarily in another country." Based on their review, the authors found that pregnant undocument migrants were more likely to be young, unmarried, engaged in low-income domestic work, and have unintended pregnancies. They were also less likely to access prenatal care than documented migrant women and women in the general population. Reasons for not seeking care were related to lack of legal residency status, lack of health insurance, cost of care, fear of deportation, and confusion about healthcare policies. The authors did not consider strength of study design or quality of research as inclusion criteria for the literature review. In addition, articles included research completed in the United

States, Canada, and Europe. Therefore, articles may be of varying quality and lower generalizability.

13. **Perez-Escamilla R., Garcia J., Song D. Health Care Access Among Hispanic Immigrants: ¿Alguien esta escuchando? [Is anybody listening?].** ***NAPA Bulletin.*** **2010;34(1):47-67.**
Perez-Escamilla et al. completed a systematic literature review of 77 articles related to health care access for Hispanic immigrants in the United States. Major barriers to accessing health care included lack of health insurance, stigma, fear of deportation, and low English proficiency. For adolescents, parental citizenship and immigration status has also been identified as a barrier to accessing health care, even for children who are U.S. citizens. Eleven articles examined barriers to accessing women's health care. In addition to general barriers, the review found additional barriers specific to access of women's health services like mammography and prental care, including: lack of culturally competent services (including outreach practices), low self-efficacy, lack of social support, and mobility. The authors also note that, "deeply rooted cultural beliefs about the origin of health and disease within the context of limited access to health insurance may be associated with more prevalent use of traditional healing...as alternative means to access care." Studies have found that language differences, differences in cultural beliefs about health, and percieved discrimination may limited access to health care in the U.S. Based on their reivew, the authors note that "programs relying heavily on community health workers, also known as promotoras, have improved health care access."

14. **Harvey S. M., Branch M. R., Hudson D., et al. Listening to immigrant latino men in rural Oregon: exploring connections between culture and sexual and reproductive health services.** ***American Journal of Mens Health.*** **2013;7(2):142-154.**
Harvey et. al. completed 49 in-depth interviews with male, 18-30 year old, Latino immigrants in rural Oregon to explore access to and use of reproductive health services. The authors cite previous research about barriers to Latino immigrants accessing health care generally, including cost of care, lack of health insurance, language barriers, fear of discrimination and stigma, lack of time to seek services, misinformation, and lack of knowledge about available services. Based on their in-depth interivews with male immigrants, the authors identified barriers to accessing reproductive health care at the individual and structural levels. Individual level barriers included lack of knowledge about services, care and treatment options, clinic locations, and financial assistance; low perception of risk; lack of understanding about what "family planning" entails; cultural norms and beliefs (including *machismo*-related beliefs); and fear and potential shame of diagnosis. The authors state, "when combined with a cultural history that has not embraced the male role in sexual and reproductive health, the cultural belief of *machismo* perpetuates the idea that Latino men do not have to be responsible for their own sexual health or that of their partner." Structurally, the authors identified the importance of *confianza* or privacy, confidentiality, and trust when interacting with providers and front desk staff at clinics. Other structural barriers included lack of formative sexual health education, lack of respect by clinic staff and providers, being treated differently or recieving different counseling due to racism, cost of care, unemployment, lack of health insurance, concerns about documentation, lack of bilingual and/or male providers, and lack of translators (especially male translators). Interviewees also talked about clinic-related barriers, including distance from the clinic, wait times, and clinic hours. The authors suggest that using promotores or other lay health workers to provide reproductive health

education may not be successful with male immigrants, especially due to cultural beliefs and norms. They recommend provider training to improve culturally appropriate care, and to create a "client-provider partnership as a mechanism for Latino men to gain a sense of control over their own health by acting collaboratively."

15. **Ho J. R., Hoffman J. R., Aghajanova L., et al. Demographic analysis of a low resource, socioculturally diverse urban community presenting for infertility care in a United States public hospital.** ***Contracept Reprod Med.*** **2017;2:17.**
Ho et al. summarized the literature about access to infertility care. They stated that only 24% of the demand for assisted reproductive technogies are met in the United States and that geography, income, insurance status, language and cultural barriers, and beaurocracy within the public health system all create barriers to accessessing infertility care. As part of this study, Ho et al. also recurited women who were presenting for infertility treatment at a public, county-based, low resource clinic and at a a high resource infertility clinic in San Francisco. They surveyed 87 patients and collected information related to English proficiency, parity, ethnicity, immigrant status, income level, and education level. They compared these demographics with length of infertility and infertility diagnosis to determine if there were differences by subgroup. Length of infertility served as a proxy for difficulty in accessing health services. Patients at the low-resource clinic were more likley to speak a langauge other than English, to have immigrated to the United States, to have a lower annual income, amd to have less than a college degree as compare to patients at the high resource clinic. They found that, "after controlling for age at the initiation of pregnancy attempt, lower education level, lower income, and immigrant status were significantly correlated with a longer duration of infertility." For example, the authors found that, "[patients] reporting an income [greater than or equal to] $100,000 presented to clinic approximately 6 months earlier than those with an income [less than] $100,000 ([beta]= -6.2, p= 0.04)." They also found that, "women with insufficient income to pay for [assisted reproductive technologies] services experience an insurmountable gap in access to care." They note that infertility treatments are excluded from coverage under the Affordable Care Act, and that most county, state, and federal public health programs do not cover basic infertility services. The authors state, "in the US, price is a barrier that separates those that are able to pay for standard of care treatment vs those that must accept substandard or no care in many cases." In addition to cost of care, the authors also point out that provider bias and implicit assumptions about income, patient ability to navigate the health care system, and low health literacy may also serve as barriers to recieving care.

16. **Mehta P. K., Saia K., Mody D., et al. Learning from UJAMBO: Perspectives on Gynecologic Care in African Immigrant and Refugee Women in Boston, Massachusetts.** ***Journal of Immigrant Minority Health.*** **2018;20(2):380-387.**
Mehta et al. analyzed results from 6 focus groups completed with 31 Congolese and Somali female immigrants in Boston, Massachussetts to understand access to and use of gynecological services. They identifed a number of barriers to accessing reproductive health care, including fear of stigma (that seeking care means sexual promiscuity), concerns about privacy and sexual modesty, fear of discrimination, prior experiences with sexual trauma or violence, lack of providers who understand female circumcision/genital cutting, lack of partner support, lack of financial resources and cost of care, lack of insurance, attitudes and beliefs (including cultural beliefs about when to see a doctor and what constituted pain/discomfort), and environmental

constraints (e.g. transportation, cultural limitations on mobility, lack of childcare). Recommendations to improve access include training providers in culturally humble communication and culturally-appropriate and trauma informed care, including understanding of female circumcision/genital cutting; providing health education about preventive care in community-based and religious settings; and developing peer support programs to reduce social stigma.

17. **Raymond-Flesch M., Siemons R., Pourat N., et al. "There is no help out there and if there is, it's really hard to find": a qualitative study of the health concerns and health care access of Latino "DREAMers".** ***J Adolesc Health.*** **2014;55(3):323-328.**
Raymond-Flesch et al. completed nine focus groups with 61 Latino immigrants in California who qulified for the Deferred Action for Childhood Arrivals (DACA) program. The Affordable Care Act excluded DACA recipients from obtaining Medicaid or private insurance through the Health Care Exchanges. The purpose of the focus groups was to understand DACA recipients' access to health care and current health conditions. The authors also identified evidence-based policy changes to address the health needs of undocumented immigrant communities (including DACA recipients). The study was the first to examine the health needs of DACA recipients. The authors identified a number of barriers to accessing health care generally, including cost of care, competing financial priorities (e.g. food, tuition, rent), lack of knowledge about the health care system, low health literacy, long wait times and delays getting appointments, lack of provider knowledge and sensitivity about immigration status and health needs of immigrants, lack of a consistent medical home, lack of a driver's license, fear of discrimination, and fear of deportation or consequences for future citizenship. The authors recommend training providers in culturally-sensitive and trauma-informed care, educating providers about immigration law and status, strengthening relationships between providers and community-based organizations, creating local health care and insurance options for undocumented individuals, and educating DACA-elgible youth about health care options.

18. **Yen W. Health Coverage Disparities Associated with Immigration Status in Washington State's Non-elderly Adult Population: 2010-17. Washington State Health Services Research Project. Washington State Office of Financial Management; May 2019 2019.**
The Washington State Office of Financial Management (OFM) provided a summary of health coverage from 2010 to 2017 for four immigration groups in Washington State: U.S.-born citizens, naturalized citizens, legal immigrants, and individuals who are undocumented. Overall, they found that the percentage of individuals who were uninsured decreased across all four sub-groups as a result of the Patient Protection and Affordable Care Act (ACA). Approximately 40.7% of individuals who are undocumented in Washington State are uninsured. OFM also found that, "because of the faster health coverage gains in the citizen groups through [key Affordable Care Act coverage expansion programs], the coverage disparities between the non-citizens, particularly [individuals who are undocumented], and citizens widened." The found that, "the gap between the [individuals who are undocumented] group's uninsured rate and that of the U.S.-born citizen group more than doubled between 2013 and 2017. In 2017, [individuals who are undocumented] were 11.1 times as likely to be uninsured as U.S.-born citizens, when other population characteristics are held as equal." Legally present immigrants were twice as likely to be uninsured. While approximately 5.7% of U.S.-born citizens are uninsured, 40.7% of

individuals who are undocumented in Washington State are uninsured. Prior to the Affordable Care Act, legally present immigrants and individuals who are undocumented accounted for 22.1% of individuals who were uninsured in Washington State. Following the ACA, this percentage increased to 34.7% of Washington State's uninsured population. OFM concluded that, "as gains in expanding coverage among citizens become hard to achieve because of their current very low uninsured rates, new policy considerations aimed at further reducing overall uninsured and health care costs may need to search for ways to reduce the health coverage disparities associated with immigration status."

19. **Citizen and immigration status definitions. 2018; Available at: https://www.hca.wa.gov/health-care-services-supports/program-administration/citizen-and-immigration-status-definitions. Accessed June 2018.**
Washington State Health Care Authority defines four citizenship and immigration status groups for the purpose of health insurance coverage eligibility. In Washington State, the four eligibility groups include Lawfully Present "Qualified Alien," Lawfully Present "Unqualified Alien," Not Lawfully Present (Undocumented) Immigrant, and Citizen or U.S. National. For the purposes of insurance coverage, a Lawfully Present "Qualified Alien" includes any non-citizen presently permitted to remain in the U.S. and who has met or is exempt from the 5-year-bar to apply for federal health insurance (Medicaid and Children's Health Improvement Plan (CHIP)). In addition, certain immigrants are exempt from the 5-year-bar, including Hmong or Highland Laotian Tribe members born before May 8, 1975 and their spouses and unmarried dependent children under age 19; Cuban/Haitian individuals approved for the H aitian Family Reunification Parole program; and Iraqi and Afghan Special Immigrants. Lawfully Present "Qualified Aliens" are eligible to apply for federal health insurance (Medicaid and CHIP), to purchase and recieve subsides on the Exchanges, and to enroll in employer-sponsored health insurance. A Lawfully Present "Non-qualified alien" includes any non-citizen presently permitted to remain in the U.S. and who has not met or is not exempt from the 5-year-bar. These individuals are inelgible for federal health insurance, though they can access Alien Emergency Medical program coverage for certain emergencies and can access temporary 8-month coverage under the Refugee Medical Assistance program if they meet eligiblity requirements. "Non-qualified aliens" are also eligible to purchase and recieve subsidies on the Exchanges, and to enroll in employer-sponsored health insurance. In addition, in Washington State, "non-qualified alien" pregnant women and children can recieve a waiver from the state to enroll in Medicaid during the 5-year-bar. Lastly, not lawfully present (undocumented) immigrants are ineligible for federal health insurance and cannot purchase coverage on the Exchanges. They can access Alien Emergency Medical program coverage for certain emergencies. Undocumented immigrants include recipients of Deferred Action for Childhood Arrivals (DACA). In Washington State, undocumented pregnant women can receive a waiver from the state to receive Medicaid coverage during their pregnancy and three months postpartum.

20. **Healthy People 2020: Access to Health Services. 2018; Available at: https://www.healthypeople.gov/2020/topics-objectives/topic/Access-to-Health-Services. Accessed October 2018, 2018.**
Although the Affordable Care Act of 2010 increased opportunities to access health insurance, many individuals still lack coverage. Access to health insurance and healthcare varies by race/ethnicity, socioeconomic status, age, sex, disability status, sexual orientation, gender

identity, and geography. As a result, one goal of the Healthy People 2020 initiative is to improve access to healthcare by improving access to health insurance coverage, health services, and timeliness of care. Healthy People 2020 found that “access to comprehensive, quality health care services is important for promoting and maintaining health, preventing and managing disease, reducing unnecessary disability and premature death, and achieving health equity for all Americans.” Barriers to accessing healthcare “lead to unmet health needs, delays in receiving appropriate care, inability to get preventive services, financial burdens, [and] preventable hospitalizations.” Access to health insurance is the first step to improving access to health services generally as it provides entry into the healthcare system. Individuals who are uninsured are, “more likely to have poor health status, less likely to receive medical care, more likely to be diagnosed later, and more likely to die prematurely” than individuals with insurance. Improving access to health services includes ensuring people have a “usual and ongoing source of care (that is, a provider or facility where one regularly receives care.” Patients with a usual source of care experience better health outcomes, fewer health inequities, lower health costs, and better use of preventive health services. Lastly, delay in healthcare can negatively impact health outcomes and also result in, “increased emotional distress, increased complications, higher treatment costs, and increased hospitalizations.” Healthy People 2020 noted that “future efforts [to improve access to care] will need to focus on the deployment of a primary care workforce that is better geographically distributed and trained to provide culturally competent care to diverse populations.”

21. **Hadley Jack. Sicker and poorer--the consequences of being uninsured: a review of the research on the relationship between health insurance, medical care use, health, work, and income. *Medical Care Research Review.* 2003;60(June 2003):3S-75S.**
As part of this systematic review of literature more than 9,000 citations were screened for inclusion; 285 distinct, potentially relevant articles were identified for more detailed review; and 54 analyses (in 51 distinct studies) were included in the detailed review. The final set of studies of health outcomes were organized into three major groups: (1) studies of the relationship between insurance status and the outcomes of specific diseases or conditions, (2) studies of the relationship between insurance status and either general mortality or morbidity/health status, and (3) studies of the relationship between medical care use and mortality. "Overall, 43 analyses report statistically significant and positive relationship, and 11 have results that are not statistically significant. However, of those 11, 4 have quantitative estimates that are similar to those of comparable studies with statistically significant results, and 4 provide partial results supporting a positive relationship between health insurance or medical care use and health." Despite all studies reviewed suffered from methodological flaws, "one general observation emerges: there is a substantial degree of qualitative consistency across the studies that support the underlying conceptual model of the relationship between health insurance and health." The author concludes, "there is a substantial body of research supporting the hypotheses that having health insurance improves health and that better health leads to higher labor force participation and higher income."

22. **Van Der Wees Philip J., Zaslavsky Alan M., Ayanian John Z. Improvements in health status after Massachusetts health care reform. *The Milbank Quarterly.* 2013;91(4):663-689.**

Van Der Wees et al. aimed to compare trends in the use of ambulatory health services and overall health status before and after health reform in Massachusetts. In 2006, Massachusetts underwent a health care reform that, among other provisions, established, "...an individual mandate to obtain health insurance if affordable, expanded Medicaid coverage for children and long-term unemployed adults, subsidized health insurance for low and middle-income residents, and a health insurance exchange to help higher-income residents obtain unsubsidized insurance." This study utilized data from the Behavioral Risk Factor Surveillance System (BRFSS) from 2001-2011 for Massachusetts as well as surrounding states that did not undergo reform (Connecticut, Maine, New Hampshire, Rhode Island, and Vermont). The total number of survey participants aged 18-64 that were included in this study was 345,211. The authors found that compared to residents in neighboring states, Massachusetts residents reported better general, physical and mental health, increased use of screening tests for cervical and colorectal cancer, and cholesterol, and a higher likelihood of being covered by insurance and having a personal doctor. These differences remained significant after adjusting for individual sex, age, race/ethnicity, income, employment, marital status, and education, and the annual unemployment rates in each state. In a subgroup analysis, the authors found that Massachusetts residents with an income less than 300% of the federal poverty level had the greatest increase in health status outcomes. The authors conclude that although health care reform in Massachusetts was associated with some meaningful gains, health disparities still exist for low-income residents and that further innovations, as well as federal health care reform, may be necessary.

23. **Baker David W., Sudano Joseph J., Albert Jeffrey M., et al. Lack of health insurance and decline in overall health in late middle age. *The New England Journal of Medicine.* 2001;345(15):1106-1112.**

Baker et al. conducted a prospective cohort study using data from the Health and Retirement Study, a national survey of adults age 51 to 61 in the United States (n=7577). The aim of the study was to examine the relationship between health insurance, or a lack thereof, and changes in overall health from 1992-1996. The authors found that compared to continuously insured participants, continuously and intermittently uninsured participants were more likely to report a major decline in overall health between 1992-1996 ($p<0.001$), with the continuously uninsured being at the highest risk (adjusted relative risk, 1.63). This increased risk remained even after adjusting for sex, race and ethnicity, and income. Further, continuously uninsured participants were 23% more likely to have a new physical difficulty that affected walking or climbing stairs than privately insured participants. The authors conclude that a lack of health insurance, even intermittently, is associated with increased risk of a decline in overall health and that further efforts are needed to reform the U.S. health insurance system, particularly for older adults.

24. **Goldin J., Lurie I.Z., McCubbin J. Health Insurance and Mortality: Experimental Evidence from TaxPayer Outreach. NBER Working Paper Series. National Bureau of Economic Research (NBER); 2019.**

Goldin et al. conducted a randomized study of U.S. taxpayers who paid a tax penalty for not having health insurance as required by the individual mandate provision of the Patient Protection and Affordable Care Act (ACA). Of 4.5 million U.S. households that paid the penalty, 3.9 million were randomly selected to recieve a letter from IRS. Researchers then analyzed data to determine the subsequent uptake of insurance and impact on mortality. They concluded, "our results provide the first experimental evidence that health insurance reduces mortality."

Following the intervention, the "rate of mortality among previously uninsured 45-65-year-olds was lower in the treatment group than in the control by approximately 0.06 percentage points, or one fewer death for every 1,648 individuals in this population who were sent a letter. We find no evidence that the intervention reduced mortality among children or younger adults over our sample period." However, the authors note that using mortality as an outcome is more likely to impact middle aged adults than children or young adults.

25. **Hadley Jack. Insurance coverage, medical care use, and short-term health changes following an unintentional injury or the onset of a chronic condition. *Journal of the American Medical Association.* 2007;297(10):1073-1085.**
Hadley used longitudinal data from the Medical Expenditure Panel Surveys from 1997-2004 to compare medical care use and short-term health changes among both insured and uninsured adults following a health shock caused by either a new chronic condition or unintentional injury. The sample included 10,485 cases of new chronic conditions and 20,783 cases of unintentional injury. In looking at the demographic characteristics of the two populations, uninsured individuals were more likely to report being in fair or poor health, have family income below 100% of the federal poverty level, and be a racial/ethnic minority. Uninsured individuals in both the injury and chronic condition groups were significantly less likely to receive care for their new condition and less likely to receive follow-up care if it were recommended. Uninsured individuals also had fewer office-based visits and prescription medicines. At the first follow-up interview, 3.5 months after the health shock, uninsured individuals with chronic conditions reported significantly worse short-term health, and uninsured individuals in the unintentional injury group were more likely to not be fully recovered and no longer in treatment. At 7 months, the difference in health change for insured versus uninsured individuals with new chronic conditions remained significant. Hadley concludes that adverse health outcomes following a health shock may continue to persist and cause deteriorating health unless the problem of uninsurance in the United States is addressed.

26. **Institute of Medicine. America's Uninsured Crisis: Consequences for Health and Health Care. Washington, DC: The National Academics Press; 2009.**
In this report published by the Institute of Medicine, the authors present data from two systematic reviews that were commissioned by the Institute to look at the consequences of uninsurance on health outcomes. The primary review of interest, McWilliams 2008 (unpublished), focused on evidence from the adult U.S. population between 2002 and 2008 and resulted in a number of conclusions. First, the authors found that without health insurance, adults are less likely to receive effective preventive services and chronically ill adults are more likely to delay or forgo necessary care and medications. Next, without health insurance, adults are more likely to be diagnosed with cancer (including breast, colorectal, and others) at a later stage and are therefore more likely to die or have poorer outcomes as a result. Without insurance, adults with cardiovascular disease or cardiac risk factors are less likely to be aware of their conditions and experience worse health outcomes, including higher mortality. Further, uninsurance is associated with poorer outcomes for stroke, heart failure, diabetes, heart attack, serious injury or trauma, and serious acute conditions with hospital admission. The report concludes this section by recognizing that even with the availability of safety net health services, there is a need to close the gap in health insurance coverage in the United States.

27. **McManus M., Ovbiagele B., Markovic D., et al. Association of insurance status with stroke-related mortality and long-term survival after stroke.** ***Journal of stroke and cerebrovascular diseases : the official journal of National Stroke Association.*** **2015;24(8):1924-1930.**
McManus et al. used data from the National Health and Nutrition Examination Survey(NHANES) to examine the association between health insurance status and long-term mortality after a stroke. The authors used data from NHANES 1999-2004 for adults aged less than 65 years with a follow-up assessment through 2006 for mortality (n=10,786 participants). The risk of mortality from stroke was not significantly different for insured versus uninsured individuals without self-reported history of stroke at the baseline interview. After adjusting for age, sex, race, BMI, poverty-to-income ratio, number of major medical conditions, history of hypertension, and NHANES cycle, uninsured individuals without stroke at baseline were 3 times more likely to die of stroke than insured individuals, although this figure did not reach statistical significance. There was also no difference in all-cause mortality according to insurance status among stroke survivors. While the authors conclude that insurance status influences the risk of mortality from stroke as well as the all-cause mortality among stroke survivors, these findings were not considered significant and further research is needed in this area.

28. **Amini Arya, Rusthoven Chad G., Waxweiler Timothy V., et al. Association of health insurance with outcomes in adults ages 18 to 64 years with melanoma in the United States.** ***Journal of the American Academy of Dermatology.*** **2016;74(2):309-316.**
Amini et al. analyzed data from the Surveillance, Epidemiology, and End Results (SEER) program of the National Cancer Institute (NCI) in order to investigate whether health insurance correlates with more advanced disease, receipt of treatment, and survival among persons diagnosed with melanoma. The authors included all people age 18 to 65 who were diagnosed with cutaneous malignant melanoma between January 1, 2007 and December 31, 2012 (n=61,650). Using logistic regression, the authors found that after adjusting for patient characteristics, uninsured patients compared with non-Medicaid insured patients more often presented with advanced disease, such as increasing tumor thickness and presence of ulceration, and less often received surgery and/or radiation. In the univariate analysis, the authors found that one important factor associated with worse overall and cause-specific survival was, among others, race, including Asian or Pacific Islander (p=.002 and p=.004 respectively), and insurance status (medicaid insurance p=.001 and uninsured p=.001). The authors conclude that socioeconomic and insurance status may contribute to the disparities in treatment and survival and that policies to address issues of access and quality of care may help improve outcomes.

29. **Baker David W., Shapiro Martin F., Schur Claudia L. Health insurance and access to care for symptomatic conditions.** ***Archives of Internal Medicine.*** **2000;160:1269-1274.**
Baker et al. developed a list of 15 symptoms that, "...a national sample of physicians had rated as being highly serious or having a large negative effect on quality of life" to include in the 1994 Robert Wood Johnson Foundation National Access to Care Survey. The survey was administered in the spring and summer of 1994 as a follow-up to the 1993 National Health Interview Survey (n=3480). Symptoms included in the survey included, for example, shortness of breath with light work or exercise, back or neck pain that makes it difficult to walk, sit, or perform other daily activities, and loss of consciousness or fainting. Respondents were asked if they had experienced any of the 15 symptoms in the last 3 months. If respondents answered yes to any of the

symptoms, they were asked whether they received medical care and if not, did they think that care would have been necessary. 16.4% of respondents (n=574) indicated experience with a new serious or morbid symptom and of these, 13.1% (n=75) were uninsured. Compared to insured participants, uninsured participants were less likely to have received medical care for their symptoms and were more likely to say that they thought medical care was needed even though they did not receive it (p=.001). The most commonly cited reason for not receiving care even though they thought it was necessary among the uninsured was inability to pay for care (95.2%, p<.001). Further, uninsured participants said that not receiving the necessary care impacted their health (63.2%) and that because they could not receive care, they had personal, household, or work problems (57.1%). The authors conclude that even for serious and morbid symptoms, lack of health insurance is a major barrier to obtaining needed care.

30. **Hogan D. R., Danaei G., Ezzati M., et al. Estimating the potential impact of insurance expansion on undiagnosed and uncontrolled chronic conditions. *Health affairs.* 2015;34(9):1554-1562.**
Hogan et al. aimed to estimate the relationship between health insurance status and the diagnosis and management of diabetes, hyperchoesterolemia, and hypertension using a nationally representative sample of U.S. adults. The authors analyzed data from the National Health and Nutrition Examination Survey (NHANES) from 1999-2012 for adults aged 20-64. In order to account for potential confounders, the authors used a matching approach where for each uninsured participant in the sample they, "...selected as a match from the insured population an individual who was similar in terms of the following observed characteristics: sex, age, race/ethnicity, household income, marital status, current smoking status, body mass index, and survey round." The total sample included 28,157 respondents and of this, 11,548 had complete data on diabetes, 25,327 had complete data for cholesterol, and 25,576 had complete data for blood pressure. Compared to those without insurance, participants with insurance had a probability of diagnosis that was 13.5% high for diabetes and hypercholesterolemia, and 8.8% higher for hypertension. Among those with a diagnosis, having insurance was further associated with improved management and control of these conditions. The authors conclude that this study provides data to support the relationship between health insurance and diagnosis and control of a number of chronic conditions among nonelderly adults. They further conclude that because nonelderly adults are the primary target of the Affordable Care Act (ACA), these findings suggest that the ACA could have a significant impact on the recognition and management of chronic diseases.

31. **Niu X., Roche L. M., Pawlish K. S., et al. Cancer survival disparities by health insurance status. *Cancer medicine.* 2013;2(3):403-411.**
Niu et al. utilized the New Jersey State Cancer Registry (NJSCR) to examine the association between health insurance status and survival of patients diagnosed with seven common cancers. The cohort included persons aged 18-64 with a primary diagnosis of invasive breast, cervical, colorectal, lung, prostate, and bladder cancers and non-Hodgkin lymphoma (NHL) for a total sample size of 54,002 cases. The authors found that patients without insurance had a significantly higher risk of death within 5 years of diagnosis than privately insured patients for all the examined cancer types except for cervical cancer (hazard ratios 1.41-1.97). This higher risk of death for uninsured patients remained significant after controlling for prognostic factors such as gender, age, race/ethnicity, marital status, SES, and stage of diagnosis. Similarly, patients

with Medicaid also had a 21% to 198% higher risk of dying within 5 years of diagnosis than patients with private insurance for breast, colorectal, prostate, lung cancer, and NHL, even after adjusting for prognostic factors. Finally, the authors examined the 5-year cause-specific survival rates by health insurance status and cancer type for two periods of diagnosis, 1999-2001 and 2002-2004. They found that 5-year survival significantly improved or remained the same across all cancer types, except for cervical cancer, for those with private insurance while survival did not improve for those who were uninsured or Medicaid insured. The authors list a number of possible explanations for the results including, "poorer health with more comorbidity and unhealthy behaviors; no or inadequate preventive health care and management of chronic conditions prior to cancer diagnosis; barriers to receiving treatment and adhering to a treatment regimen such as high cost, inability to navigate the health care system, misinformation about and mistrust of the health care system, lack of a usual source of health care, lack of transportation, lack of time off from work; no treatment or delay in receiving treatment; not all providers accept uninsured or Medicaid insured patients; and lower quality treatment by providers primarily serving the uninsured and Medicaid insured." The authors conclude that the first step to addressing cancer survival disparities is ensuring that everyone has access to adequate health insurance, but they also acknowledge that additional measures will be needed in order to make significant strides.

32. **Cheung Min Rex. Lack of health insurance increases all cause and all cancer mortality in adults: an analysis of National Health and Nutrition Examination Survey (NHANES III) data. *Asian Pacific Journal of Cancer Prevention.* 2013;14(4):2259-2263.**
Cheung et al. utilized National Health and Nutritional Examination Survey (NHANES) III data in order to investigate the relationship between insurance status, all cause, and all cancer mortality. NHANES III was conducted between 1988-1994 and all participants were followed passively until December 31, 2006. In this time period, there were 5,291 all cause and 1,117 all cancer deaths out of a total sample of 33,994 persons. In the univariate logistic regression analysis for all cause mortality, the significant variables were age, poverty income ratio, and alcohol consumption. In the multivariate logistic regression, after controlling for additional socioeconomic, behavioral, and health status variables, the variables that remained significant predictors of all cause mortality included age, having no health insurance, black race, Mexican Americans, poverty income ration, and drinking hard liquor. When considered all together, these variables account for a 70% increase in the risk of all cause mortality associated with having no health insurance. For all cancer mortality, the significant variables in the univariate analysis were age, drinking hard liquor, and smoking. Age, having no health insurance, black race, Mexican Americans, and smoking were the significant and independent predictors of all cancer mortality in the multivariate analysis after controlling for other potential confounders. In total, this equates to an almost 300% increased risk of all cancer death for people without any health insurance. The authors conclude that health insurance significantly impacts all cause and all cancer death and therefore universal health insurance coverage may be a way to remove this disparity in the United States.

33. **American Psychological Association. Evidence-Based Practice in Psychology: APA Presidential Task Force on Evidence-Based Practice. 2006;61(4):271-285.**
The American Psychological Association (APA) created a policy indicating that the evidence-base for a psychological intervention should be evaluated using both efficacy and clinical utility

as criteria. The Association President appointed the APA Presidential Task Force on Evidence-Based Practice and the task force published this document with the primary intent of describing psychology‟s commitment to evidence-based psychological practices. This document, though, also references many research articles providing evidence for the efficacy of a number of psychological treatments and interventions. The reference list for this document highlights the growing body of evidence of treatment efficacy from the 1970s through 2006. Note that this does not indicate that all treatments are effective, but rather than there is a very large body of evidence supporting that evidence-based treatments are available.

34. **R Chou, S Selph, T Dana, et al. Screening for HIV: systematic review to update the U.S. Preventive Services Task Force recommendation. Evidence synthesis No. 95. *Agency for Healthcare Research and Quality.* 2012.**
The U.S. Preventive Services Task Force (USPSTF) is an independent panel of experts who systematically reviews the evidence and provides recommendations that are intended to help clinicians, employers, policymakers, and others make informed decisions about health care services. This review, which focused benefits and harms of screening for Human Immunodeficiency Virus (HIV) in adolescents and adults, included randomized clinical trials and observational studies. Findings indicate that screening for HIV is accurate, screening only targeted groups misses a large number of cases, and that antiretroviral therapy (ART) reduces the risk death and sexual transmission of HIV.

35. **CP Patnode, JT Henderson, JH Thompson, et al. Behavioral counseling and pharmacotherapy interventions for tobacco cessation in adults, including pregnant women: a review of reviews for the U.S. Preventive Services Task Force. Evidence synthesis No. 134. *Agency for Healthcare Research and Quality.* 2015.**
The U.S. Preventive Services Task Force (USPSTF) is an independent panel of experts who systematically reviews the evidence and provides recommendations that are intended to help clinicians, employers, policymakers, and others make informed decisions about health care services. This summary focused on the effectiveness and safety of pharmacotherapy and behavioral interventions for tobacco cessation and included a total of 54 systematic reviews. The findings indicate that behavioral interventions had a significant impact on increasing smoking cessation at 6 months (risk ratio= 1.76 [95% CI, 1.58 to 1.96]), and that various pharmacotherapy interventions also demonstrated effectiveness. In combination, behavioral therapy and pharmacotherapy demonstrated an 82% increase in tobacco cessation when compared to minimal intervention or usual standard of care. The authors conclude that behavioral and pharmacotherapy interventions are effective interventions to improve rates of smoking cessation both individually and in combination.

36. **Hasstedt K., Desai S., Ansari-Thomas Z. Immigrant Women's Access to Sexual and Reproductive Health Coverage and Care in the United States. Guttmacher Institute; 2018.**
In this report, the Guttmacher Institute summarize evidence related to immigrant women's access to reproductive health care. They conducted a rapid literature review of 24 published articles and grey literature since 2011. They found that "existing research suggests immigration status influences women's sexual and reproductive health coverage, care, and outcomes." The authors highlight two main findings: 1) "A smaller proportion of immigrant women-- including both undocumented and those lawfully present-- have health insurance coverage and are less likely to

use sexual and reproductive health services, compared with U.S.-born women." The report cites data from 2016 that 34% of noncitizen immigrant women of reproductive age in the U.S. were uninsured, compared to 9% of U.S.-born women. 2) "Among immigrant women who do obtain contraceptive care, they are signficantly more likely than their U.S.-born counterparts to visit publicly funded family planning centers." They cite data that 41% of immigrant women who obtained contraceptive coverage used safety-net family planning centers, compared to 25% of U.S.-born women. Approximately 70% of immigrant women reported safety-net providres as their usual source of care. The authors recommend improving access to reproductive health care for immigrant women by expanding insurance eligiblity, providing additional support to health care safety net providers, and supporting community health workers.

37. **Officials Association of State and Territorial Health. Immigration Status Definitions. 2010.**
The Association of State and Territorial Health Officials (ASTHO)developed a resource of terminology used to describe the documentation status of immigrants in the United States. It is intended as a reference for state and territorial health agency officials, decision-makers, and staff about the eligibility and qualification of immigrants for federal and state programs. The definitions were compiled from the United States Citizenship and Immigration Services, Department of Health and Human Services, and Congressional Research Service. An Immigrant is defined as individuals that have entered the United States legally as well as those that have entered the United States without inspection. The document provides definitions for various immigration terms and statuses, including legal alien, illegal alien, undocumented individual, lawful permanent resident, parolee, asylee, refugee, non-immigrant, qualified immigrant, non-qualified immigrant, sponsor, public charge, native-born citizen, and naturalized citizen.

38. **Thiel de Bocanegra H., Carter-Pokras O., Ingleby J. D., et al. Addressing refugee health through evidence-based policies: a case study. *Annals of Epidemiology.* 2018;28(6):411-419.**
The American College of Epidemiology convened an international workgroup of experts in refugee health, epidemiology, policy, and program administration from the United States, Canada, and the European Union to examine literature published between 1999 and 2016 related to examples and challenges of providing health services to refugees. They organized their results by eight key lessons learned for epidemiologists: 1. Definitions for "refugee" and "asylum seeker" vary. 2. Efficent systems are needed to idenify health needs and begin integration into the health system upon arrival at port of entry. This should include questions about pregnancy, pregnancy intention, contraception needs, and chronic diseases. US federal policy only requires documentation of pregnancy status, and states can require more comprehensive assessments of reproductive health needs. 3. Data sources need to be linked in order to allow for ongoing monitoring of refugee health indicators, and data about refugee status should be collected consistently and in additional sources. 4. A "health in all policies" approach is needed to ensure health-promoting environments for refugees and asylum seekers. 5. Refugees and asylum seekers must have equitable access to health services. The authors cite evidence showing that migrants often lack information about how to navigate the health care system and do not recieve culturally appropriate care. 6. Health services for refugees and asylum seekers must be integrated into the existing health care system and be culturally appropriate. 7. Initiatives to improve access to care

need to be evaluated. 8. Epidemiologists need training to engage with policymakers and the public.

39. **Wojnar D. M. Perinatal experiences of Somali couples in the United States. *J Obstet Gynecol Neonatal Nurs.* 2015;44(3):358-369.**
Wojnar completed a literature review and conducted interviews with 48 Somali immigrants (26 women and 22 men) who had arrived in the United States within the past five years to understand their experience with perinatal care (care during and after birth). The review of literature cited past research that identified barriers to Somali immigrants accessing reproductive health care, including lack of transportation, limited access to interpretation services, lack of provider understanding of female genital cutting/circumcision, fear of Western medicine and procedures (e.g. cesarean section). All interviewees lived in the Pacific Northwest and had at least one child born in the United States. He found that access to perinatal care was complicated by lanaguage access, cultural beliefs and preferences (e.g. family size), fear of discrimination or bias, distrust of medical providers and practices, misinformation, limited access to resources, and exclusion of husbands from prenatal education and care. Recommendations to improve access include offering prenatal education in a culturally appopriate setting (ie. separate classes for men and women), training providers in culturally-appropriate care, and training providers in the care of patients with female genital cutting/circumcision.

40. **Gelatt J., Zong J. Fact Sheet: Settling In—A profile of the Unauthorized Immigrant Population in the United States. Migration Policy Institute; 2018.**
This report by the Migration Policy Institute presents population estimates and sociodemographic characteristics for unauthorized immigrants living in the U.S. The Migration Policy Institute, in collaboration with Pennsylvania State University and Temple University, developed a methodology to estimate whether an individual is authorized to be in the U.S. Their methodology uses a multiple imputation statistical model to compare measures in the Census Bureau's American Community Survey with measures in the Census Bureau's Survey of Income and Program Participation, which asks participants to report whether they have Lawful Permanent Resident status. They compare measures such as country of birth, year of U.S. entry, age, gender, and educational attainment between the two surveys to estimate unauthorized status. Migration Policy Institute presents data for the U.S. overall, for 41 states, and for 135 counties with the largest population of unauthorized immigrants. This factsheet presents information about country of origin, U.S. designations, length of U.S. residence, educational attainment, English proficiency, employment, income, and homeownership. Overall, Migration Policy Institute estimates there are 11.3 million unauthorized immigrants living in the U.S. Nationally, the majority (53%) of individuals who are undocumented arrive from Mexico, and Yakima County, Washington has the highest share of unauthorized immigrants from Mexico (97% of unauthorized immigrants in Yakima County are from Mexico). The majority of individuals who are undocumented in Washington work in agriculture. Washington is also among the top 10 states with children under the age of 18 who have at least one parent who is undocumented. Migration Policy Institute estimates that 88,000 children in Washington State have at least one parent who is undocumented, and approximately 30% of this group has two parents who are unauthorized.

41. **Profile of the Unauthorized Population: Washington. 2018; Available at: https://www.migrationpolicy.org/data/unauthorized-immigrant-population/state/WA. Accessed 11/19/2018.**
The Migration Policy Institute, in collaboration with Pennsylvania State University and Temple University, provides population estimates and sociodemographic characteristics for unauthorized immigrants living in the U.S. The Migration Policy Institute estimates that 229,000 individuals who are undocumented live in Washington State. Of these individuals, 55% were born in Mexico, 68% are employed, 47% are female, 8% are under the age of 18, and 46% are uninsured.

42. **Deferred Action for Childhood Arrivals (DACA) Recipients and Program Participation Rate, by State. 2018; Available at: https://www.migrationpolicy.org/programs/data-hub/deferred-action-childhood-arrivals-daca-profiles. Accessed 11/19/2018.**
The Migration Policy Institute, in collaboration with Pennsylvania State University and Temple University, provides population estimates and sociodemographic characteristics for unauthorized immigrants living in the U.S. Nationally, Migration Policy Institute estimates that 1.3 million individuals are eligible for DACA, and 699,350 (54%) had DACA status in August 2018. For Washington State, they estimate that 25,000 individuals are eligible for DACA, and 17,140 (67%) had DACA status in August 2018.

43. **Yen W. Washington State's Immigrant Population: 2010-2017. Washington State Health Services Research Project. Washington State Office of Finanical Management March 2019 2019.**
The Washington State Office of Financial Management (OFM) provided a summary of immigrants residing in Washington State between 2010 and 2017. Approximately 14% (1,000,000 individuals) of Washington State's population is immigrants, including naturalized citizens, legal immigrants, and individuals who are undocumented. This percentage has stayed relatively stable over time from 2010 to 2017. OFM provided information by four immigrantion status groups, including U.S.-born citizens, naturalized citizens, legal immigrants, and individuals who are undocumented. In 2017, approximately 3.5% (264,000 individuals) of Washington State's population included individuals who are undocumented. Adults 18 to 64 years of age made up the majority (90.4%) of individuals who are undocumented in Washington State. Approximately 40% of individuals who are undocumented had a family income below 200% of the federal poverty level.

44. **Churilla T., Egleston B., Dong Y., et al. Disparities in the management and outcome of cervical cancer in the United States according to health insurance status. *Gynecologic oncology.* 2016;141(3):516-523.**
Churilla et al. aimed to characterize the presentation, management, and outcomes of patients with cervical cancer with regard to insurance status. The authors analyzed data from the National Cancer Institute Survival, Epidemiology, and End Results (SEER) database for women aged 18-64 who were diagnosed with invasive cervical cancer between 2007-2011 (n=11,714). Among patients with early stage disease, uninsured patients were less likely to receive surgical management, however, after adjusting for clinical and demographic variables, this association was no longer significant. Among patients that presented with later stage disease, patients that

were uninsured were significantly less likely to receive optimal radiation treatment and this association remained significant after adjusting for clinical and demographic variables. Further, patients with Medicaid or who were uninsured were more likely to present with advanced stage cervical cancer. Finally, overall survival at a median follow-up of 21 months was significantly higher among insured patients (86.6%) versus Medicaid (75.8%) or uninsured patients (73.0%). The authors conclude that health insurance remains an important barrier for receipt of treatment and outcomes for cervical cancer. The authors also suggest that further studies may be necessary in order to understand the impact that the Affordable Care Act may have on insurance coverage and cervical cancer care.

45. **Inverso G., Mahal B. A., Aizer A. A., et al. Health insurance affects head and neck cancer treatment patterns and outcomes.** ***Journal of oral and maxillofacial surgery : official journal of the American Association of Oral and Maxillofacial Surgeons.*** **2016;74(6):1241-1247.**
Inverso et al. conducted a retrospective study using Surveillance, Epidemiology, and End Results (SEER) data to examine the effect of insurance status on the stage of presentation, treatment, and survival among individuals with head and neck cancer. The cohort included 34,437 individuals diagnosed with head and neck cancer between 2007-2010 who were under the age of 65. Uninsured individuals were more likely to present with metastatic cancer than insured individuals, which remained significant even after adjustment for patient demographic data and socioeconomic factors (adjusted odds ratio, 1.60; CI, 1.30 to 1.96). Uninsured patients without metastatic cancer were more likely to not receive definitive treatment after adjusting for patient demographics, socioeconomic factors, and tumor characteristics (AOR, 1.64; 95% CI, 1.37 to 1.96). Head and neck cancer specific mortality was significantly lower among insured patients and remained significant after adjustment. The authors conclude that this gap in treatment and outcomes for uninsured individuals should serve as a target for future health policy reform.

46. **Gelman A., Miller E., Schwarz E. B., et al. Racial disparities in human papillomavirus vaccination: does access matter?** ***J Adolesc Health.*** **2013;53(6):756-762.**
Gelman et al. used nationally representative data from the National Survey of Family Growth to assess HPV vaccination initiation in 2,168 females aged 15-24 years. Researchers performed a series of regression analyses to determine the independent effect of race/ethnicity on HPV vaccination. They found significant racial/ethnic disparities in HPV vaccination. US-born Hispanics, foreign-born Hispanics, and African Americans were less likely to have initiated vaccination than were whites (p<.001). Sociodemographic characteristics and health care access measures (i.e., insurance status and whether the participant had a usual place for receiving health care) both independently reduced disparities for both US-born and foreign-born Hispanics. Adjusting for sociodemographic variables increased the odds of vaccination among Hispanics (AOR, .88; 95% CI, .48-1.63); adding health care access variables into the model further increased the odds of vaccination (AOR, 1.03; 95% CI, .54-2.00). However, African-Americans remained significantly less likely to have initiated vaccination after adjusting for sociodemographic factors and health care access measures (OR, .46, 95% CI, .27-78 ; AOR, .47, 95% CI, .27-82; and AOR, .51, 95% CI, .29-88, respectively). The disparity persists among younger (aged 15-18 years) and older (aged 19-24 years) African-Americans. Authors note that other analyses suggest that HPV vaccination patterns are changing rapidly among adolescent girls, with the greatest increase in vaccination initiation among Hispanics and African-

Americans. Authors conclude that sociodemographic factors and health care access measures largely explain disparities in in HPV vaccination among Hispanics (US- and foreign-born), but further research is needed to understand disparities experienced by African-American adolescents.

47. **Jadav S., Rajan S. S., Abughosh S., et al. The Role of Socioeconomic Status and Health Care Access in Breast Cancer Screening Compliance Among Hispanics.** ***J Public Health Manag Pract.*** **2015;21(5):467-476.**
Jadav et al. completed a retrospective pooled cross-sectional analysis of 2000-2010 Medical Expenditure Panel Survey data of women aged 40 years and older. Researchers used the Nonlinear Blinder--Oaxaca decomposition method to identify and quantify the contribution of each individual-level factor (predisposing characteristics: race/ethnicity, marital status, age; enabling characteristics: education, employment, income, insurance status, usual source of care, metropolitan statistical area, region; and need characteristics: health status and obesity) toward racial-ethnic disparities in breast cancer screening use among Hispanic versus non-Hispanic White (NHW) women. Authors cite evidence identifying lack of insurance coverage, cultural and linguistic differences, and underrepresentation of Hispanics in health care fields as significant barriers to health care access for Hispanics. Researchers used mammogram screening (MS) and breast cancer screening (BCS), defined as the receipt of both MS and a clinical breast exam, as outcome indicators. Hispanic women included in the study were statistically significantly younger, less likely to be married, less educated, less likely to be employed, more likely to be uninsured, less likely to have a usual source of care, more likely to live in urban areas, less likely to have a good health status, and predominantly overweight or obese, and had lower income as compared with the NHW women. Researchers found "the enabling characteristics (especially education, income, insurance, and having a usual source of care) explained most of the disparities between Hispanics and NHWs." For example, the analysis indicates that "if Hispanic women were insured at the same rate as the NHW women, then the disparity in screening would have reduced by 76.8% for MS and 69.18% for BCS." Furthermore, "If the Hispanic women had similar access to usual source of care as the NHW women, this would have reduced the disparity in MS by 48.92% and BCS by 52.87%." The analysis suggests that if the Hispanic study participants had access to the same enabling resources as the NHWs, "the Hispanics might have a better compliance with screening guidelines than the NHWs." Researchers identified education, income, insurance, and having a usual source of care as the most important factors leading to breast cancer screening disparities between Hispanics and NHWs. Note, cultural beliefs, preferences, and provider characteristics were not incorporated into the analysis due to database limitations, yet they also influence screening rates.

48. **Hoffman C., Paradise J. Health insurance and access to health care in the United States.** ***Annals of the New York Academy of Sciences.*** **2008;1136:149-160.**
Hoffman and Paradise present a synthesis of the literature from the late 1980's to 2006 regarding the evidence that health insurance is associated with access to health care in the United States. Articles are summarized in subgroups relating to access to primary care, acute and trauma care, managing chronic conditions, health outcomes, and premature mortality. The most relevant finding was that a number of studies indicated that uninsured adults reported greater unmet health needs and a large proportion of adults stated that the cost of insurance is the main reason for being uninsured. Further, uninsured adults were twice as likely to report that they, or a family

member, skipped treatment, cut pills or did not fill a prescription medication some time in the last year because of cost. The authors indicate that there are great personal benefits to having health coverage although health insurance alone is not enough to eliminate disparities or equalize access to care across subgroups of Americans.

49. **Villarroel Maria A., Cohen Robin A. Health Insurance Continuity and Health Care Access and Utilization, 2014. Hyattsville, MD: National Center for Health Statistics; 2016.**
Villarroel et al. present a data brief from the National Center for Health Statistics using data from the 2014 National Health Interview Survey. Adults aged 18-64 who were insured for more than a year were more likely than those who were insured at the time of the interview but had a period of uninsurance in the past year to have a usual place for medical care (90.8% versus 73.6%). This difference was even greater when they compared those currently insured versus those currently uninsured but had a period of insurance in the past year and those uninsured for more than a year (57.8% and 44.3% respectively). Next, the authors found that having insurance for more than a year was associated with being more likely to have visited a doctor during the past year compared to those with any period of being uninsured. One in five adults in the sample reported an unmet medical need due to cost in the past year, and this was more likely to be reported by those with any period without health insurance than those with coverage for more than a year. Finally, persistent coverage was associated with a higher likelihood of having been vaccinated against the flu. The authors conclude that the presented data reflect the experiences of those without health insurance and the barriers they may face to receiving health services.

50. **Wang Tze-Fang, Shi Leiyu, Zhu Jinsheng. Race/ethnicity, insurance, income and access to care: the influence of health status. *International Journal for Equity in Health.* 2013;12(29).**
Wang et al. examined health care access disparities in relation to health status and the presence of functional limitations using data from the 2009 Family Core component of the National Health Interview Survey (NHIS). The authors limited the sample to adults who had visited a doctor or health care professional in the previous two weeks in order to attenuate the differences between those with and without health care experience. The main indictors analyzed with regards to access to care were defined as: (1) no usual place of care, (2) unable to get medical care, (3) delayed medical care, (4) unable to get dental care, (5) unable to get mental health care, and (6) unable to get prescription drugs. The main finding was that participants who were uninsured more frequently reported being unable to get medical care, dental care, mental health care, prescription drugs, and were more likely to have no usual place of care and delaying medical care than insured participants. Further, participants in the lowest income bracket (<$20,000) had the largest proportion of participants reporting an inability to get medical care, dental care, mental health care, and prescription drugs as well as delaying medical care. In conclusion, the authors noted that insurance and health status were the two most important factors that were associated with access to care and that the Affordable Care Act is expected to contribute even further to reducing these disparities.

51. **Centers for Disease Control and Prevention. Vital Signs: Health Insurance Coverage and Health Care Utilization- United States, 2006-2009 and January-March 2010. MMWR. 2010.**

In this Morbidity and Mortality Weekly Report (MMWR), published by the Centers for Disease Control and Prevention, the authors use data from the National Health Interview Survey (NHIS) to look at the association between lack of health insurance and delaying or forgoing health care. Data from NHIS was analyzed from 2006 through the first quarter of 2010 with an average participation rate of 82.2% in 2009. Data indicated that adults aged 18 to 64 who did not have health insurance for more than a year at the time of the survey were nearly six times as likely to not have a usual source of care compared to those who were continuously insured (55.2% versus 9.3%). Further, compared to those with continuous coverage and the same chronic conditions, persons without health insurance in the previous year were five to six times as likely to forgo needed care if they had hypertension (42.7% versus 6.7%), diabetes (47.5% versus 7.7%) and asthma (40.8% versus 8.0%). Even short periods of being uninsured showed meaningful differences. Currently insured persons who had a 1 to 3 month gap in coverage were twice as likely to not have a usual source of care (16.4% versus 9.3%) and three times as likely to delay seeking care due to the cost compared to those with continuous coverage (26.5% versus 7.1%). These differences in care seeking behavior persisted irrespective of family income level. The authors conclude that the requirements of the Affordable Care Act may help reduce the proportion of uninsured persons in the United States but that outreach will be necessary to increase enrollment and retention in programs such as Medicaid. They further conclude that continuous health care coverage will allow for increased access to preventative services and will reduce long-term health care costs down the line.

52. **Lu P. J., O'Halloran A., Williams W. W. Impact of health insurance status on vaccination coverage among adult populations. *American journal of preventive medicine.* 2015;48(6):647-661.**
Lu et al. analyzed data from the 2012 National Health Interview Survey (NHIS), which had a response rate of 61.2%. The authors used the data to estimate vaccination coverage among adults over the age of 18 by health insurance status for seven routinely recommended vaccines: influenza, pneumococcal (PPSV), tetanus and diptheria toxoid (Td) or tetnus, diptheria, and acellular pertussis (Tdap), hepatitis A (Hep A), hepatitis B (Hep B), herpes zoster (shingles), and human papillomavirus (HPV). Having health insurance was significantly associated with a greater likelihood of receiving the influenza vaccine, Td, Tdap, and PPSV, even after adjusting for age, gender, race/ethnicity, marital status, education, employment status, poverty level, number of physician contacts in the past year, usual source of care, self-reported health status, U.S.-born status, and region of residence. Further, vaccine coverage for influenza, PPSV, shingles, and HPV were two to three times higher among those with health insurance. Overall, individuals who reported having a regular physician were more likely to have received the recommended vaccines, regardless of their insurance status. The authors conclude that comprehensive strategies need to be tailored to improve vaccination coverage among adults, especially those without health insurance.

53. **Baicker Katherine, Taubman Sarah L., Allen Heidi L., et al. The Oregon Experiment — effects of Medicaid on clinical outcomes. *New England Journal of Medicine.* 2013;368(18):1713-1722.**
Baicker et al. examined the effects of health insurance coverage on health care use and health outcomes approximately 2 years after the Oregon Medicaid lottery. The Oregon Health Plan Standard is a Medicaid program for adults aged 19-64 who have an income below 100% of the

federal poverty level. The program closed to new enrollment in 2004 but began a waiting list in 2008 to fill a limited number of new openings. Between March and September of 2008, approximately 30,000 people were selected through a lottery drawing from the waiting list of nearly 90,000 names. This lottery process allowed for a quasi-experimental approach to studying the effects of insurance on health with the use of a random assignment. The authors of this study interviewed a sample population of 12,229 people in Portland, Oregon, half of which were selected in the lottery and half of which were not, between September 2009 and December 2010. The findings indicated that Medicaid coverage did not have a significant effect on the prevalence or diagnosis of hypertension or high cholesterol levels but did increase the probability of a diagnosis for diabetes and the use of medications to control diabetes. Further, Medicaid coverage was associated with a substantial reduction in the risk of a positive screening for depression. Compared to those without coverage, Medicaid coverage was associated with a 7.84% increase in the proportion of people who indicated that their health was the same or better than 1 year previously. Finally, Medicaid coverage led to a reduction in financial strain from medical costs, and an increase in the number of prescription drugs received, office visits made in the previous year, perceived access to care, and use of preventative services such as cholesterol screening, mammograms, and pap smears in women. The authors conclude that while Medicaid coverage led to no significant improvements in measured physical health, it did increase access to and utilization of health care and can serve as evidence of the effects of expanding Medicaid to low-income adults in the United States.

54. **Finkelstein Amy N., Taubman Sarah L., Wright Bill J., et al. The Oregon Health Insurance Experiment: evidence from the first year. *Quarterly Journal of Economics.* 2012;127(3):1057-1106.**
Finkelstein et al. utilize data from the Oregon Health Insurance Experiment to examine the effects of expanding access to public health insurance on health care utilization, financial strain, and health outcomes of low-income adults. The Oregon Health Plan Standard is a Medicaid program for adults aged 19-64 who have an income below 100% of the federal poverty level. The program closed to new enrollment in 2004 but began a waiting list in 2008 to fill a limited number of new openings. Between March and September of 2008, approximately 30,000 people were selected through a lottery drawing from the waiting list of nearly 90,000 names. This lottery process allowed for a quasi-experimental approach to studying the effects of insurance on health with the use of a random assignment. In this study, the authors obtained individual-level hospital discharge data for the entire state or Oregon from January 2008-September 2009. The authors matched this data to the lottery list based on information such as full name, zip code, and date of birth. In addition, the authors obtained credit records, mortality data from the Oregon Center of Health Statistics, and mailed out a supplemental survey to nearly all individuals selected through the lottery. In total, the authors were able to survey 29,834 individuals who were selected by the lottery and 45,088 who were not selected and acted as controls. The data indicate that enrollment in Medicaid is associated with an iincreased hospital admissions, outpatient visits, and prescription drug use, and increase in compliance with recommended preventative care, improvement in self-reported mental and physical health measures, perceived access to and quality of care, and overall well-being. Further, the authors found a decline in substantial out-of-pocket medical costs and total medical debts. The authors conclude that these results provide meaningful insights into the benefits of Medicaid but also call for a careful cost-benefit analysis of Medicaid expansion taking into account the inputs provided in this study.

55. **Marino M., Bailey S. R., Gold R., et al. Receipt of preventive services after Oregon's randomized Medicaid experiment.** ***American journal of preventive medicine.*** **2016;50(2):161-170.**

Marino et al. assessed the long-term impact of the Oregon Health Insurance Experiment on the receipt of 12 preventative care services. The Oregon Health Plan Standard is a Medicaid program for adults aged 19-64 who have an income below 100% of the federal poverty level. The program closed to new enrollment in 2004 but began a waiting list in 2008 to fill a limited number of new openings. Between March and September of 2008, approximately 30,000 people were selected through a lottery drawing from the waiting list of nearly 90,000 names. This lottery process allowed for a quasi-experimental approach to studying the effects of insurance on health with the use of a random assignment. In this study, the authors probabilistically matched individuals aged 19-64 who were selected from the lottery reservation list to an individual in the Oregon Community Health Information Network (OCHIN), which is a network of health systems that supports over 300 community health centers. The total sample included in this study was 4,049 patients selected by the lottery and 6,594 patients from OCHIN who were not selected. The primary outcomes of interest were whether or not the individual had received the following services in the post-lottery period: "...screenings for cervical, breast, and colorectal cancer (fecal occult blood testing and colonoscopy); screenings for diabetes (glucose and hemoglobin A1c [HbA1c]), hypertension, obesity, and smoking; lipid screening; chlamydia testing; and receipt of influenza vaccination." The results indicate that patients who were selected by the lottery were significantly more likely to receive preventives screening services for BMI, blood pressure, smoking, Pap test, mammography, chlamydia and HbA1c. After adjusting for age and the number of chronic conditions diagnosed prior to the selection date, where appropriate, all of the previously mentioned services remained significant with the addition of fecal occult blood testing. The authors indicate that while community health centers provide quality health services for millions of uninsured and underinsured persons, continued efforts are needed to expand access to health insurance for vulnerable populations.

56. **Wherry L. R., Miller S. Early coverage, access, utilization, and health effects associated with the Affordable Care Act Medicaid expansions: a quasi-experimental study.** ***Annals of internal medicine.*** **2016;164(12):795-803.**

Wherry et al. used data from the National Health Interview Survey (NHIS)from 2010 to 2014 to evaluate whether state Medicaid expansion was associated with changes in insurance coverage, access to and utilization of care, and self-reported health. The authors used data for adults aged 19-64 with incomes below 138% of the federal poverty level in states that did and did not expand Medicaid. Compared with nonexpansion states, respondents in expansion states reported significant increases in diagnoses of diabetes and high cholesterol but no differences in diagnoses of hypertension, access to care, health status, or mental health. Medicaid expansions were also associated with significant increases in visits to a general physician. The authors conclude that these data provide evidence that the Affordable Care Act Medicaid expansions are associated with an increase in insurance coverage and health care utilization and that fully understanding the impacts of the expansion are crucial to future policy debates.