

Unemployment Insurance Changes

What is the goal of this health note?

Decisions made in sectors outside of public health and health care, such as in education, housing, and employment, can affect health and well-being. Health notes are intended to provide objective, nonpartisan information to help legislators understand the connections between these various sectors and health. This document provides summaries of evidence analyzed by the North Carolina Budget and Tax Center while creating a health note for North Carolina House Bill 713. Health notes are not intended to make definitive or causal predictions about how a proposed bill will affect health and well-being of constituents. Rather, legislators can use a health note as one additional source of information to consider during policy-making. The analysis does not consider the fiscal impacts of the bill.

How and why was this bill selected?

This bill was identified as one of several important policy issues being considered by the North Carolina General Assembly in 2019 and the most prominent policy proposal on the issue of employment and unemployment. The health note screening criteria were used to confirm the bill was appropriate for analysis. (See Methodology Appendix on Page 7). The NC Budget & Tax Center's focus areas for health notes include housing, education, and employment. BTC selected House Bill 713 for analysis because of its potential to affect connections to the labor force, employment outcomes, and financial stability. Research has consistently demonstrated a strong link between unemployment and negative health outcomes.¹ Unemployed workers with long duration of unemployment often are most at risk to move out of the labor market, and spells of unemployment have been linked to lower lifetime earnings, both of which undermine well-being across a number of dimensions.²

¹ Brand, Jennie, The Far-Reaching Impacts of Job Loss and Unemployment, *Annu Rev Sociol.* 2015 Aug; 41: 359–375 and Bivens, Josh. Long-Term Unemployment Has Not Damaged the Productivity of Workers. Economic Policy Institute, Accessed at: <https://www.epi.org/publication/long-term-unemployment-scarring/>

² Greenstone, et al, November 2011. Unemployment and Earnings Losses: A Look at Long-Term Consequences of the Great Recession on American Workers. Accessed at: <https://www.brookings.edu/blog/jobs/2011/11/04/unemployment-and-earnings-losses-a-look-at-long-term-impacts-of-the-great-recession-on-american-workers/>

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Bill Provisions Examined

- **Elimination of multiple waiting weeks for benefits**
- **Change from the sliding scale of weeks based on the state unemployment rate to a fixed 26 weeks**
- **Change to the calculation of average weekly benefit amount to be based on last two highest quarters of wages from the previous two completed quarters**
- **Replace the cap on the maximum benefit amount from \$350 with a percent of the weekly wage**
- **Allow people who leave employment for spousal relocation, health reasons, domestic violence, or undue family hardship to claim unemployment insurance**

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Summary of health note findings

This review found that providing workers who have lost their job with adequate wage replacement for 26 weeks could help to address financial stability of households, with potential benefits for health and well-being. Below is a summary of the key findings:

- **There is strong evidence that more adequate wage replacement from unemployment insurance and longer duration supports self-reported health and well-being.** This is because the program provides people with the support to stay connected to job searches and build skills while also counteracting, in part, the negative feelings associated with job loss and health impacts of long unemployment.
- **There is mixed evidence that higher wage replacement or longer duration impacts specific health conditions.** The limited range of studies and populations studied do not provide enough strong evidence that jobless workers receiving unemployment insurance have lower levels of chronic disease or health issues. Researchers posit that this could be due to the short time period in which a person receives unemployment insurance and the ways in which sustained disruptions to health care services and healthy behaviors are the primary drivers of chronic conditions.
- **There is a fair amount of evidence that low levels of receipt of unemployment insurance lead to enrollment in other public benefit programs.** Research reviewed suggests that loss of unemployment insurance due to too short a duration lead to uptake of other programs, but only limited evidence is available on low levels or amounts of unemployment insurance affecting receipt of other forms of assistance despite evidence that unemployment leads to housing instability and food insecurity.
- **There was no evidence found on the direct effect of unemployment insurance on the well-being of victims of domestic violence, caregivers, or those moving due to spousal relocation.**

Why do these findings matter for North Carolina?

As of January 2019, 17,222 North Carolinians were receiving unemployment insurance. In December 2008, more than 150,000 North Carolinians were receiving unemployment insurance.³

While the state's overall receipt of unemployment insurance is the lowest in the nation and the unemployment rate has declined since the start of the Great Recession, North Carolina has also experienced deeper and longer spells of unemployment than many other states.⁴ Moreover, because of the state's industry composition, many communities and workers have been affected by longer term trends in job loss driven by global trade and a shift away from manufacturing in the United States.⁵

3 Monthly Program and Benefit Data, Unemployment Insurance, US Department of Labor. Accessed at: <https://oui.doleta.gov/unemploy/> for January 2019.

4 Sirota, Alexandra, June 2019. Jobless workers need an unemployment insurance system that works. NC Justice Center: Raleigh, NC. Accessed at: <https://www.ncjustice.org/publications/jobless-workers-need-an-unemployment-insurance-system-that-works/>; Recession and Recovery in North Carolina, Accessed at: <https://gri.unc.edu/files/2012/08/GRI-Data-Snapshot-August-2012.pdf> and NC Department of Commerce, Unemployment and the Great Recession in North Carolina, Accessed at: https://nccareers.org/cfs/reports/Unemployment_and_the_Great_Recession_in_North_Carolina.pdf

5 Scott, Robert E. and Zane Mokhiber, October 23, 2018. The China toll deepens. Economic Policy Institute, accessed at: <https://www.epi.org/publication/the-china-toll-deepens-growth-in-the-bilateral-trade-deficit-between-2001-and-2017-cost-3-4-million-u-s-jobs-with-losses-in-every-state-and-congressional-district/> Scott, Robert E. January 2015. The Manufacturing Footprint in the US and the Importance of Manufacturing Jobs. Economic Policy Institute, accessed at: <https://www.epi.org/publication/the-manufacturing-footprint-and-the-importance-of-u-s-manufacturing-jobs/>

What are the potential effects of longer receipt and more adequate wage replacement to jobless workers?

- **Unemployment insurance duration standards and benefit calculations have been established through nearly a century of operation of the system and evaluations of the optimal amount and length of unemployment insurance.**⁶
- **Eligibility constraints in terms of types of work and reasons for job loss that exclude family responsibilities irrespective of performance have a growing impact on the workforce.** A third of workers have left jobs because of caregiving responsibilities and this trend has raised concerns about the financial security of households and productivity of the economy.⁷
- **The duration and level of unemployment insurance lets people to find better jobs.** While evidence is mixed as to the relationship between unemployment insurance levels and unemployment length, research has found that unemployment insurance ensures that workers find jobs that better match their skills.⁸

What are the potential health effects of unemployment insurance changes for jobless workers?

Effects of unemployment insurance changes on mental health

- **Access to state unemployment insurance (UI) benefits may help alleviate depression and anxiety.** One study found that states with more initial UI claims had fewer Google searches for “depression” and “anxiety.” Since individuals frequently seek medical advice through conducting Google searches, the author interprets this finding to suggest that it is possible that some psychological distress could be alleviated when unemployed workers make UI claims. However, no causal finding was developed.⁹
- **Higher UI benefits do not alleviate the adverse mental health effects of unemployment.**
 - One study finds that unemployed workers who are eligible for unemployment insurance report slightly better subjective well-being than those who are not, but this effect is not strong enough to achieve statistical significance.¹⁰ Unemployment insurance could not resolve the feelings of hopelessness and sadness associated with job loss.¹¹ Another meta-analysis of 104 studies on unemployment and well-being found that receipt of unemployment insurance did not mitigate mental health.¹²
 - One analysis of unemployed workers in New Jersey, where UI benefits rank high on measures of

6 Vroman, Wayne, 1998. The History of State UI Financing. The Upjohn Institute; National Academy of Social Insurance, accessed at: https://www.nasi.org/sites/default/files/research/Unemployment_Insurance_Administration.pdf

7 Fuller et al. 2019 The Caring Company. <https://www.hbs.edu/managing-the-future-of-work/research/Pages/the-caring-company.aspx>

8 Boushey et al. 2005. Finding the better fit. Economic Policy Institute. <https://www.epi.org/publication/ib205/>

9 Tefft, N. (2011). Insights on unemployment, unemployment insurance, and mental health. *Journal of Health Economics*, 30(2), 258-264.

10 Cylus and Avaldano (2017) Receiving Unemployment Benefits May Have Positive Effects On The Health Of The Unemployed. *Health Affairs*, 36(2):289-296.

11 Young, C. (2012). Losing a job: The nonpecuniary cost of unemployment in the United States. *Social Forces*, 91(2), 609-634.

12 McKee-Ryan, F., Song, Z., Wanberg, C. R., & Kinicki, A. J. (2005). Psychological and physical well-being during unemployment: a meta-analytic study. *Journal of applied psychology*, 90(1), 53.

adequacy¹³, found that while subjective well-being declined as unemployment duration increased, exhausting one's unemployment benefits did not meaningfully affect life satisfaction.¹⁴

Effects of unemployment insurance changes on physical and mental health

- **More generous UI benefits may improve life expectancy.** One study found that residents of countries with more generous unemployment insurance generally have longer life expectancies. The authors found that a one-unit increase in a UI system's "generosity score" was associated with a 0.225 year increase in life expectancy.¹⁵
 - Higher wage replacement from UI benefits may also reduce suicide rates by maintaining connections to the labor force and supporting feelings of self-efficacy and esteem. One recent study found that the impact of unemployment rates on suicide was mitigated in U.S. states with more generous unemployment benefits.¹⁶ The study did not evaluate whether receiving unemployment benefits directly affects one's risk of committing suicide.
 - One study found only a limited relationship between UI benefit levels and the incidence of cardiovascular disease, the leading cause of death in the United States, after positing that stress, poor diet and lower physical activity associated with job loss and loss of income can contribute to cardiovascular disease.¹⁷ States with higher unemployment benefit amounts had lower cardiovascular disease incidence, but this relationship may have been the result of other factors such as the analysis of just older workers and short-term spells of unemployment rather than lifetime receipt of unemployment insurance.¹⁸
- **Higher wage replacement from UI benefits may help reduce the prevalence of unhealthy behaviors, but only in some cases.**
 - One study on smoking behavior in the United States found that a \$100 increase in the maximum weekly unemployment insurance benefit corresponds to an increase of approximately 2.9 percentage points in smoking cessation among the UI-eligible unemployed.¹⁹ However, another study found that receiving UI did not in itself affect smoking behavior.²⁰
 - One study found that unemployed individuals who received UI were less likely to report an increase in alcohol consumption and a decrease in body weight than those who did not receive UI benefits.²¹
- **Receiving UI boosts self-reported health among unemployed workers.**

13 US Department of Labor, Quarterly Data Summary by State, Unemployment Insurance Data, accessed at: https://oui.doleta.gov/unemploy/data_summary/DataSum.asp

14 Krueger, A. B. and Mueller, A. (2011). Job search, emotional well-being, and job finding in a period of mass unemployment: Evidence from high frequency longitudinal data [with comments and discussion]. *Brookings Papers on Economic Activity*, 1-81.

15 Beckfield, J., & Bamba, C. (2016). Shorter lives in stingier states: social policy shortcomings help explain the US mortality disadvantage. *Social Science & Medicine*, 171, 30-38.

16 Cylus, J., Glymour, M. M., & Avendano, M. (2014). Do generous unemployment benefit programs reduce suicide rates? A state fixed-effect analysis covering 1968–2008. *American Journal of Epidemiology*, 180(1), 45-52.

17 Walter S, Glymour M, Avendano M (2014) The Health Effects of US Unemployment Insurance Policy: Does Income from Unemployment Benefits Prevent Cardiovascular Disease?. *PLOS ONE* 9(7): e101193. <https://doi.org/10.1371/journal.pone.0101193> and U.S. Centers for Disease Control and Prevention. (2017). Heart disease facts. Retrieved from <https://www.cdc.gov/heartdisease/facts.htm>

18 Walter, S., Glymour, M., & Avendano, M. (2014). The health effects of US unemployment insurance policy: does income from unemployment benefits prevent cardiovascular disease?. *PLOS One*, 9(7), e101193.

19 Fu, W., & Liu, F. (2019). Unemployment insurance and cigarette smoking. *Journal of Health Economics*, 63, 34-51.

20 Bolton, K. L., & Rodriguez, E. (2009). Smoking, drinking and body weight after re-employment: does unemployment experience and compensation make a difference?. *BMC Public Health*, 9(1), 77. https://www.annualreviews.org/doi/full/10.1146/annurev-publhealth-031811-124603?url_ver=Z39.88-2003&rft_id=ori%3Arid%3Aacrossref.org&rft_dat=cr_pub%3Dpubme

21 Ibid

- Multiple studies have found that receiving UI benefits boosts self-reported health. One study found that in the United States, low- and medium-skilled unemployed individuals who received unemployment benefits were less likely to report being in poor or fair health than those who did not.²² Another analysis found that unemployed workers who received UI benefits were about 5 percentage points less likely to report poor health in the year after job loss than those who did not.²³
- Providing a greater amount of UI benefits for a longer duration may further bolster UI's positive health effects. One study found that a 10 percent increase in states' maximum UI benefit replacement rate decreased poor health by 1.3 percentage points among men.²⁴ Another study found that higher UI generosity increases both general self-reported health and the likelihood that unemployed workers report being in excellent health.²⁵
- In contrast, exhausting UI benefits is associated with increased rates of self-reported work-limiting disability. One study found that following benefit exhaustion, self-reported disability rose by 3 percentage points among those who exhausted their unemployment insurance benefits. It's unclear whether these changes represent changes in health status or changes in reporting, but the authors note that there was no clear incentive for misreporting one's health status on the survey from which their data was sourced.²⁶

Effects of unemployment insurance changes on health insurance coverage and service utilization

- **Receiving UI increases the likelihood of having or maintaining health insurance.**
 - One analysis found that unemployed workers who had received UI benefits were more likely than unemployed workers who did not receive benefits to have employer-sponsored health insurance in their new jobs, possibly because their benefits enabled them to spend more time looking for a job with insurance.²⁷
 - Another study found that higher UI generosity was linked to higher rates of health care coverage among unemployed workers after they lost their jobs, in part because unemployed workers in states with higher UI benefits were more likely to maintain their private health coverage. Higher UI benefits did not affect the public insurance coverage rates.²⁸
- **UI benefit exhaustion is tied to increases in Medicaid enrollment.** One study found that among workers who eventually went on to exhaust their unemployment benefits, private health care coverage declined and Medicaid coverage increased by 7 percentage points after job loss. Once these workers exhausted their benefits, Medicaid coverage rates further increased, suggesting that unemployment insurance exhaustion is associated with increased participation in Medicaid.²⁹
- **Increasing the wage replacement and duration of UI benefits can increase the likelihood that**

22 McLeod, C. B., Hall, P. A., Siddiqi, A., & Hertzman, C. (2012). How society shapes the health gradient: work-related health inequalities in a comparative perspective. *Annual Review of Public Health*, 33, 59-73.

23 Cylus, J., & Avendano, M. (2017). Receiving unemployment benefits may have positive effects on the health of the unemployed. *Health Affairs*, 36(2), 289-296.

24 Cylus, J., Glymour, M. M., & Avendano, M. (2015). Health effects of unemployment benefit program generosity. *American Journal of Public Health*, 105(2), 317-323.

25 Kuka, E. (2018). Quantifying the benefits of social insurance: Unemployment insurance and health (No. w24766). National Bureau of Economic Research.

26 Rothstein, J., & Valletta, R. G. (2017). Scraping by: Income and program participation after the loss of extended unemployment benefits. *Journal of Policy Analysis and Management*, 36(4), 880-908.

27 Boushey, H., & Wenger, J. (2005). Finding the better fit: Receiving unemployment insurance increases likelihood of re-employment with health insurance. Retrieved from <https://www.epi.org/publication/ib205/>

28 Kuka, E. (2018). Quantifying the benefits of social insurance: Unemployment insurance and health (No. w24766). National Bureau of Economic Research.

29 Rothstein, J., & Valletta, R. G. (2017). Scraping by: Income and program participation after the loss of extended unemployment benefits. *Journal of Policy Analysis and Management*, 36(4), 880-908.

unemployed workers take advantage of preventative health services.

- **Higher UI benefits increase the likelihood of having a routine checkup.** One study found that a 10 percentage point increase in the income replacement rate of UI benefits leads to a 3.4 percentage point increase in the likelihood that an unemployed worker has had a routine checkup in the past year.³⁰
- **Higher UI benefits may increase the likelihood that workers have clinical breast exams.** One study found that a 10 percentage point increase in the income replacement rate of unemployment insurance corresponds with a 5 percent increase in the likelihood that an unemployed worker received a breast exam in the past year.³¹

Other potential health effects of unemployment insurance changes

- **Unemployment benefit exhaustion may substantially increase poverty rates among the unemployed.** One study found that following unemployment benefit exhaustion, the poverty rate among those who exhaust their unemployment insurance increased by 13 percentage points.³² Since poverty is associated with numerous poor health outcomes like lower life expectancy, higher levels of heart disease and diabetes, this finding suggests that benefit exhaustion could potentially have adverse effects on health.³³
- **Some research suggests that higher unemployment benefits may decrease the risk of spousal overwork which could lead to poorer health outcomes.** One study found that spouses are slightly less likely to overwork, or work more than 40 hours per week, if their spouse receives higher amounts of unemployment insurance. A \$100 increase in the UI benefit level decreases the probability that the recipient's spouse will overwork by 3.4 percentage points.³⁴

Which populations are most likely to be affected by this bill?

Certain groups of workers are more likely to experience job loss and be eligible for unemployment insurance: workers in industries susceptible to the business cycle like retail, construction and finance; older workers as well as entry-level workers; workers with children and workers in labor markets with fewer job openings, which, in North Carolina, constitute more rural communities in the state.

Workers of color in North Carolina experience unemployment at higher rates but are less likely to receive unemployment insurance. In the first quarter of 2018, the unemployment rate in North Carolina for African American workers was 6.7 percent, for Hispanic/Latinx workers was 4.8 percent, and for white workers was 3.7 percent. Data for Asian and Native American workers was not available due to sample size.³⁵ Analysis of data from the Bureau of Labor Statistics on the number of unemployed workers receiving unemployment insurance by race for North Carolina shows that since 2013, when unemployment insurance changes went into effect, the decline in receipt for white workers and black workers since that time has been the same for both groups.³⁶

30 Kuka, E. (2018). Quantifying the benefits of social insurance: Unemployment insurance and health (No. w24766). National Bureau of Economic Research.

31 Kuka, E. (2018). Quantifying the benefits of social insurance: Unemployment insurance and health (No. w24766). National Bureau of Economic Research.

32 Rothstein, J., & Valletta, R. G. (2017). Scraping by: Income and program participation after the loss of extended unemployment benefits. *Journal of Policy Analysis and Management*, 36(4), 880-908.

33 Marmot, M. (2005). Social determinants of health inequalities. *The Lancet*, 365(9464), 1099-1104.

34 Fu, W., & Liu, F. (2019). Unemployment insurance and cigarette smoking. *Journal of Health Economics*, 63, 34-51.

35 Jones, Janelle, May 2018. In 14 states and DC, the African American unemployment rate is at least twice the white unemployment rate. Economic Policy Institute, Washington DC. Accessed at: <https://www.epi.org/publication/state-race-unemployment-2018q1/>

36 Bureau of Labor Statistics, Unemployment Insurance Characteristics, Accessed at: <https://oui.doleta.gov/unemploy/chariu.asp>

Research has found that despite higher unemployment rates, workers of color who lose their jobs are less likely to apply and receive Unemployment Insurance than white workers, even when education and occupations are the same across groups.³⁷

The bill also explicitly names certain unique qualifying events that could impact certain groups more than others, including spousal relocation, health reasons, domestic violence, or undue family hardship.

How large might the impact be?

Where possible, the Budget & Tax Center describes how large the impact may be based on the bill language and literature, such as describing the size, extent, and population distribution of an effect. Given the numbers of unemployed people who are receiving unemployment insurance today and the historic level of unemployment insurance receipt as a share of all jobless workers, it is possible that between 17,000 and 150,000 North Carolinians could be impacted by this legislation.

Appendix: Methodology

To complete this health note, North Carolina Budget and Tax Center staff conducted an expedited literature review using a systematic approach to minimize bias and identify studies to answer each of the identified research questions. In this note, “health impacts” refer to effects on determinants of health, such as education, employment, and housing, as well as effects on health outcomes, such as injury, asthma, chronic disease, and mental health. The strength of the evidence is qualitatively described and categorized as: not well researched, mixed evidence, a fair amount of evidence, strong evidence, or very strong evidence. It was beyond the scope of analysis to consider the fiscal impacts of this bill or the effects any funds dedicated to implementing the bill may have on other programs or initiatives in the state. To the extent that this bill requires funds to be shifted away from other purposes or would result in other initiatives not being funded, policymakers may want to consider additional research to understand the relative effect of devoting funds for this bill relative to another purpose.

Once the bill was selected, a research team from the North Carolina Budget and Tax Center hypothesized a pathway between the bill, health determinants, and health outcomes. The hypothesized pathway was developed using research team expertise and a preliminary review of the literature. The bill components were mapped to steps on this pathway and the team developed research questions and a list of keywords to search. The research team reached consensus on the final conceptual model, research questions, contextual background questions, keywords, and keyword combinations. The conceptual model, research questions, search terms, and list of literature sources were peer-reviewed by an external subject matter expert. The external subject matter expert also reviewed a draft of the note. A copy of the conceptual model is available upon request.

The North Carolina Budget and Tax Center developed and prioritized 10 research questions related to the bill components examined:

- To what extent does unemployment insurance receipt affect income in the household?
- To what extent does unemployment insurance receipt affect duration of unemployment?
- To what extent does unemployment insurance receipt keep people in the labor market?
- To what extent does unemployment insurance receipt affect financial security?

³⁷ Nichols, Austin and Margaret Simms, June 2012. Racial and Ethnic Differences in Receipt of Unemployment Insurance Benefits during the Great Recession. Urban Institute, Washington, DC.

- To what extent does unemployment insurance affect behavioral health after job loss?
- To what extent does unemployment insurance receipt affect re-employment?
- To what extent does unemployment insurance affect availability of kin care/dependent care?
- To what extent does unemployment insurance affect access to housing?
- To what extent does unemployment insurance affect food security?

Next the research team conducted an expedited literature review using a systematic approach to minimize bias and answer each of the identified research questions.³⁸ The team limited the search to systematic reviews and meta-analyses of studies first, since they provide analyses of multiple studies or address multiple research questions. If no appropriate systematic reviews or meta-analyses were found for a specific question, the team searched for nonsystematic research reviews, original articles, and research reports from U.S. agencies and nonpartisan organizations. The team limited the initial search to electronically available sources published between January 2014 and June 2019. Select sources published earlier than January 2014 were included if located through systematic reviews or meta-analyses published between January 2014 and June 2019 or if found during a secondary search for reports from U.S. agencies and nonpartisan organizations.

The research team searched PubMed and Google Scholar along with the following leading journals in public health, social services, and homelessness to explore each research question: American Journal of Public Health, Social Science & Medicine, Health Affairs, Journal of Health Economics, Advances in Economic Analysis and Policy, Journal of Economic Perspectives, Journal of Public Health, Annual Review of Sociology and Annual Review of Economics. The team used the following keywords during searches: unemployment insurance, household income, financial security, duration, health, payments, health outcomes, health insurance, health care access, public benefits, Medicaid, food stamps, labor market participation, job search, housing, housing access, homelessness, transportation, self-esteem, mental health, volunteerism, civic engagement, stress, anxiety, physical health, and chronic conditions. The team also searched for relevant publications from the Economic Policy Institute, National Employment Law Project, Center on Budget & Policy Priorities, U.S. Department of Labor and National Bureau of Economic Research.

After following the above protocol, the team screened 2171 titles and abstracts,³⁹ identified 114 abstracts for potential inclusion and reviewed the full text corresponding to each of these abstracts. After applying the inclusion criteria, 101 articles were excluded. In addition, the team identified 4 resources with relevant research outside of the peer-reviewed literature. A final sample of 16 resources was used to create the health note. In addition, the team used 11 references to provide contextual information.

Of the studies included, the strength of the evidence was qualitatively described and categorized as: not well researched, mixed evidence, a fair amount of evidence, strong evidence, or very strong evidence. The evidence categories were adapted from a similar approach from another state.⁴⁰

- **Very strong evidence:** The literature review yielded robust evidence supporting a causal relationship with few if any contradictory findings. The evidence indicates that the scientific community largely accepts the existence of the relationship.

38 Expedited reviews streamline traditional literature review methods to synthesize evidence within a shortened timeframe. Prior research has demonstrated that conclusions of a rapid review versus a full systematic review did not vary greatly. Watt A. et al., "Rapid versus full systematic reviews: an inventory of current methods and practice in Health Technology Assessment," (Australia: ASERNIP-5, 2007): 1–105, https://www.surgeons.org/media/297941/rapidvsfull2007_systematicreview.pdf.

39 Many of the searches produced duplicate articles. The number of sources screened does not account for duplication across searches in different databases.

40 Washington State Board of Health, 2016 "Executive Summary: Health Impact Review of HB 2969," <http://sboh.wa.gov/Portals/7/Doc/HealthImpactReviews/HIR-2016-05-HB2969.pdf>.

- **Strong evidence:** The literature review yielded a large body of evidence on the association, but the body of evidence contained 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 some combination of those factors.
- **A fair amount of evidence:** The literature review 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 percent 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.
- **Mixed evidence:** The literature review yielded several studies with contradictory findings regarding the association.
- **Not well researched:** The literature review yielded few if any studies or yielded studies that were poorly designed or executed or had high risk of bias.

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