

## **Health Impact Review—2009-03**

### **House Bill 1341: Motivating Students through Incentives to Pursue Postsecondary Education by Eliminating Statewide Assessments as a High School Graduation Requirement**

**January 8, 2010**

#### **I. Executive Summary**

The State Board of Health was asked to assess, in collaboration with the Governor's Interagency Council on Health Disparities, the potential impacts of House Bill 1341 introduced during the 2009 Legislative session. If passed, HB 1341 would remove the statewide assessment as a requirement for high school graduation. It also would dedicate any savings realized to conducting a review of incentive programs to motivate students to meet state standards and pursue postsecondary education.

If passage of HB 1341 were to have an impact on health disparities, there would have to be evidence demonstrating the following: (1) that policies requiring students to meet standards on exit exams in order to graduate result in changes in educational attainment; (2) that such policies disproportionately impact students of color; and (3) that educational attainment has significant consequences for health. The most immediate, direct, and widely studied measures of academic attainment for high school students are dropout rates and graduation rates. This review, therefore, focuses on the potential effects of exit exam requirements on dropout rates and high school graduation rates and on health-related consequences of whether a student completes high school and attains a diploma.

While the class of 2008 was the first in Washington to be required to pass the reading and writing portions of the WASL in order to graduate, at the time of this review, there is no available study evaluating the impact of the WASL graduation requirements on dropout rates or graduation rates. Therefore, this review needed to look to the scientific literature to understand whether policies requiring students to meet standards on exit exams have an effect on dropout or graduation rates.

There is ample evidence that high school graduates have better health behaviors, self-reported health, health outcomes, and longer life expectancy than adults with less than a high school education. However, while there is suggestive evidence from the literature that exit exams can have negative impacts on dropout and graduation rates, particularly for students of color, overall research findings are mixed and inconclusive. Further research is needed, particularly in Washington State, to understand the impacts of high school exit exam requirements on dropout and graduation rates. Until that research is completed, however, this review cannot definitively conclude what impact HB 1341 would have on health disparities.

## II. Introduction

RCW 43.20.285 requires the State Board of Health, in collaboration with the Governor's Interagency Council on Health Disparities, to conduct a health impact review if one is requested by the Governor or a legislator. A health impact review examines a legislative or budgetary proposal and analyzes the extent to which the proposal is likely to have a positive or negative impact on health disparities by race/ethnicity and gender. This is a review of HB 1341, which was introduced in the 2009 legislative session but did not pass. It could be reintroduced as a two-year bill during the 2010 legislative session.

The term "health disparities" describes the disproportionate burden of disease, disability, death, and other adverse health conditions that exist among specific populations or groups. Health disparities based on race/ethnicity, income, gender, education, and sexual orientation are well documented (U.S. Department of Health and Human Services 2000, Joint Select Committee on Health Disparities 2005). Many factors interact to produce the health disparities experienced by communities of color; biological/genetic factors do not fully explain these disparities in health (U.S. Department of Health and Human Services 2000).

## III. Background

### Short Summary of HB 1341

House Bill 1341 would repeal the requirement that students must earn a Certificate of Academic Achievement (CAA) by meeting the state standard on the high school Washington Assessment of Student Learning (WASL) for high school graduation. It would repeal the requirement that students in special education earn a Certificate of Individual Achievement (CIA). The bill would repeal all references to the CAA and CIA, retakes of the WASL, alternative assessments, and other policies associated with those requirements. In addition, it would require the Office of Superintendent of Public Instruction (OSPI) to redesign the high school WASL by 2010 to reduce the number of short answer and extended response questions. OSPI, the Higher Education Coordinating Board (HECB), and the State Board for Community and Technical Colleges (SBCTC) would be required to conduct a review of incentive programs in other states intended to increase the number of students meeting state standards and/or motivate students to pursue postsecondary education and to submit a joint report to the Legislature.

During the 2009 legislative session, Senate Bill 5260, the companion bill to HB 1341, was substituted. The substitute bill did not repeal the requirement that students meet standards on the statewide assessment as a requirement for high school graduation—it simply called for the review of incentive programs in other states. SB 5260 also did not pass.

### **Intended Impact of HB 1341**

The intended impact of HB 1341 was to remove the requirement that students meet standards on the statewide assessment as a precondition for high school graduation and rededicate any savings realized to increasing student success, closing the achievement gaps on the statewide assessment, and motivating students through incentives to pursue postsecondary education.

### **Additional Information and Updates since HB 1341 was Introduced**

The class of 2008 was the first required to pass the reading and writing portions of the WASL as a requirement for graduation. In 2008, OSPI began revising the WASL significantly and gave the new iterations new names. Beginning in spring 2010, students in grades 3-8 will take the Measurements of Student Progress and high school students will take the High School Proficiency Exam (HSPE). OSPI reports that the new tests are shorter and online versions will be phased in over the next few years, starting with reading and math in grades 6-8 in spring 2010.

Students in the classes of 2010-2012 will be required to pass a reading and writing assessment (the WASL if previously completed with a satisfactory score, the HSPE, or a state-approved alternative assessment) to be eligible to graduate. Beginning with the class of 2013, students will be required to pass reading, writing, math, and science assessments.

OSPI reports four alternate pathways for students to receive a CAA:

- Students can assemble a collection of classroom-based work showing they meet grade-level academic standards.
- Students' grades in certain classes can be compared to other students who took the same classes and met the standard.
- Students can meet certain established scores for math, reading, and writing on the SAT, ACT, or PSAT tests.
- Students can earn a three or higher on select Advanced Placement (AP) exams.

The conversion of the WASL into the HSPE does not make HB 1341 moot nor would it likely have a bearing on whether the proposed legislation would have an effect on health disparities, although the degree of impact may be influenced by the characteristics of the new test still in development—for example, an HSPE that is more or less onerous or more or less culturally relevant than the older WASL may have a differential impact on dropout rates or graduation rates for students of color.

## **IV. Methods**

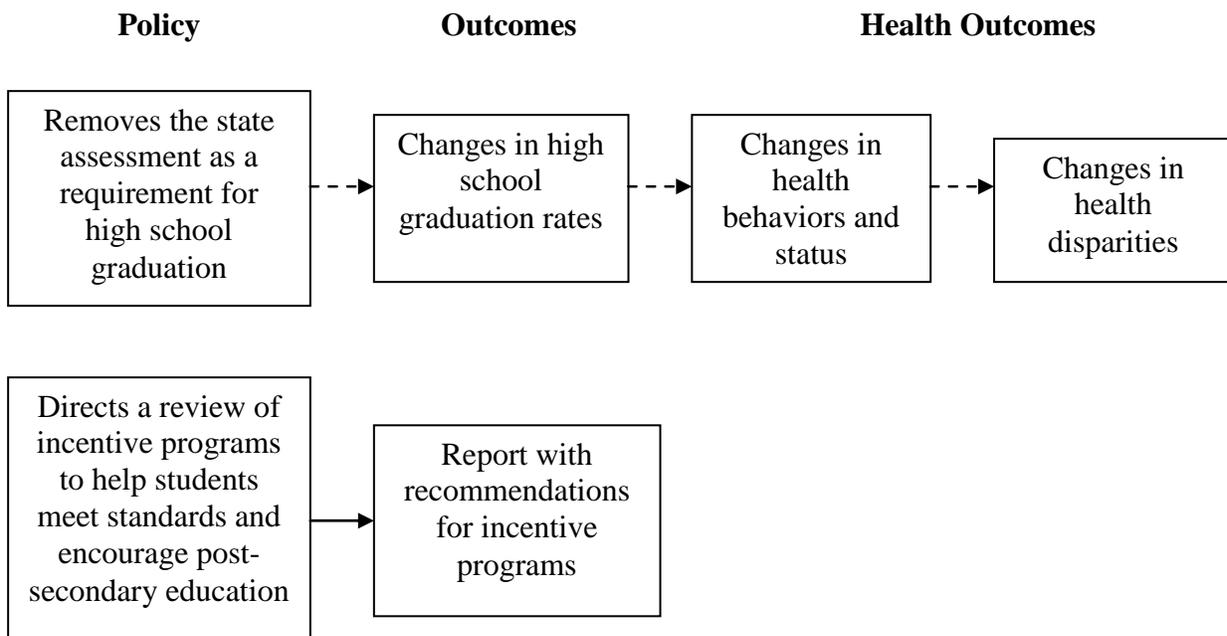
To complete this review, Board staff used data from OSPI and information from a review of the literature. Internet search engines and database searches were used to conduct the literature review including Google, ERIC, and PubMed.

A conceptual model was developed to focus the research for this review. The model shows the direct results of the proposed policy and the steps that must occur if the policy is to increase or reduce health disparities in Washington. Research was conducted on each of the dashed lines to

determine the validity of each assumption. The discussion that follows is based on each of the links outlined in the conceptual model.

Potentially, using any cost-savings to review incentive programs and develop a report with recommendations could also reduce health disparities in the long term if the savings were adequate to support a robust review, the recommendations were implemented, and the recommendations, as implemented, proved to be effective in incentivizing students to meet standards and encouraging participation in post-secondary education. This part of the conceptual model, however, was deemed to be speculative and theoretical and was not researched as part of this review.

**Figure 1: Conceptual model describing how the removal of the state assessment as a requirement for high school graduation could potentially result in increased or decreased health disparities**



## V. Findings and Discussion

### Effects of High School Exit Exams on Dropout and Graduation Rates

#### *Evidence from Washington State*

In Washington State, the class of 2008 was the first to be required to meet standard on the reading and writing portions of the WASL in order to graduate. To date, no study evaluating the effect of the requirement on graduation rates has been published.

In 2006, the Washington State Institute for Public Policy examined the historical relationship between student performance on WASL and graduation rates. The researchers found that for the class of 2004, graduates performed much better on the WASL than non-graduates. Specifically, 68% and 72% of students who graduated met standard on the writing and reading WASL respectively, compared to 38% and 41% of non-graduates. The researchers caution, however, that generalizations from the class of 2004 cannot be made to the class of 2008 for a number of reasons including that students can retake the WASL up to four times, meeting standard is now a requirement for graduation, and alternative assessments are an option for meeting graduation requirements, among others (Washington State Institute for Public Policy, 2006).

Between 2004 and 2008, Washington's on-time graduation rate has averaged about 72% with an extended graduation rate of about 77% (Office of Superintendent of Public Instruction 2009). Data for the class of 2008 and the class of 2009 reveal disparities in WASL performance and graduation rates by race/ethnicity, see Table 1.

**Table 1: Student Performance on the WASL and Graduation Rates by Race/Ethnicity**

	Class of 2008		Class of 2009	
	Met Reading and Writing Standard*	On-Time Graduation Rate	Met Reading and Writing Standard*	On-Time Graduation Rate
American Indian	85.9%	47.9%	87.2%	N/A
Asian	93.4%	80.5%	94.9%	N/A
Pacific Islander	86.0%	58.7%	83.2%	N/A
African American	86.8%	59.5%	88.7%	N/A
Hispanic	85.5%	60.4%	88.5%	N/A
Caucasian	93.4%	75.4%	94.0%	N/A
Multiracial	90.8%	56.3%	93.0%	N/A
All Students	92.0%	72.0%	93.0%	N/A

Data Source: Office of Superintendent of Public Instruction. Accessed at: [www.k12.wa.us/Communications/PressReleases2009/WASL-HSRelease.aspx](http://www.k12.wa.us/Communications/PressReleases2009/WASL-HSRelease.aspx)

\*The proportions of students meeting both reading and writing standards are reported among students who stayed in high school all four years.

To date no study evaluating the effect of the state assessment as a requirement for graduation has been published. Data from OSPI reveal that among students who stayed in high school for all four years, American Indian, Pacific Islander, African American, Hispanic, and Multiracial students met standard on the reading and writing WASL at lower rates than Caucasian and Asian students. This suggests that those groups of students' graduation rates would have been disproportionately impacted by the WASL requirement. However, students of color have historically had disproportionately higher dropout rates and lower graduation rates. Therefore, in the absence of evidence on whether the WASL requirement resulted in excess dropouts or an excess number of students not receiving a diploma, conclusions cannot be drawn from the very limited available data.

### ***Evidence from the Literature***

Those opposed to high school exit exams are concerned they increase the dropout rate and/or decrease the graduation rate. Opponents often claim the problem is particularly exacerbated for low-income students and students of color. Those in favor of exit exams argue they are necessary to assure a meaningful high school diploma. They claim exit exams motivate students to work harder, put pressure on educational systems to adapt in order to better prepare students, and ultimately increase student achievement (Greene and Winters 2004, Center on Education Policy 2003). If these latter advocates are correct, then exit exams could lead to not only increased graduation rates but also, by extension, greater college participation, college completion, advanced degrees, and earnings.

The research on the effects of high school exit exams on dropout and graduation rates reveals mixed findings. In 2003, the Center on Education Policy convened a national panel of researchers and practitioners with expertise in exit exam policy and dropout issues to review existing research and develop recommendations. The panel found that different studies using different research methods and data sources had different findings. In the end, it concluded there was only moderately suggestive evidence that exit exams lead to increased dropout. The panel also concluded there was no evidence that exit exams decrease dropout rates (i.e., they do not help to keep students in school).

Since 2003 when the panel was held, the Center on Education Policy has continued to track state implementation of exit exams and trends in student performance. In its 2008-2009 annual report, it recognized that the majority of American students were affected by exit exams despite little evidence to support their use. It stressed the need for further research, such as on whether policies requiring passage on exit exams for receipt of diploma lead to higher dropout rates (Center on Education Policy 2009).

Examples of research supporting the claims that high school exit exams increase dropout rates and/or decrease graduation rates follow:

- Madaus and Clark (2001) reviewed the literature primarily conducted at Boston College from 1970-2000 on the effects of high-stakes testing and found that assessments have been shown to increase dropout rates, particularly for students of color.
- Jacob (2001) assessed National Educational Longitudinal Study (NELS) data, which was designed to follow a nationally representative sample of students enrolled in the eighth grade in 1988 as they progressed through high school, postsecondary education, and work and controlled for a number of student-level and school-level variables. He reported dropout rates were higher in states with mandatory graduation tests and on average, students in test states had a 10.1% chance of leaving high school by senior year compared to 8.5% in non-test states. Moreover, low-achieving students were 25% more likely to dropout if they were from states with exit exams compared to students in non-test states.
- Amrein and Berliner (2002) conducted a study of sixteen states before and after the implementation of exit exams – states studied were those that implemented exit exams prior to 2000. They found high school exit exams led to higher dropout rates, lower graduation rates, and increased enrollments in General Equivalency Diploma (GED) programs in the majority of states.

- Martorell (2004) used data from 1991-1995 and examined the impact of the exit exam in Texas by comparing students who barely passed the test to those who barely failed the test. He found that failing the exam in the tenth or eleventh grades did not cause students to dropout early; however, students who failed the exam in the twelfth grade had significantly lower chances of earning a diploma or a GED and were less likely to attend post-secondary school than students who passed. Martorell estimated that 1% of students do not graduate because they fail the test.
- Warren et al. (2006) employed multivariate regression analyses to understand the independent association between state exit exam policies in all 50 states and the District of Columbia and high school completion rates for the graduating classes of 1975 - 2002. They found that exit exam requirements resulted in lowered high school completion rates and increased GED test taking rates. More specifically, they found that exit exams resulted in a decline in graduation rates of 1-2%, depending on the difficulty of the exam. Moreover, the authors found the negative effect of exit exams on graduation rates was stronger in states that were more racially/ethnically diverse and had higher poverty rates.
- Reardon et al. (2009) conducted research on three cohorts of students who were tenth graders in 2003, 2004, and 2005 from four large school districts in California; two of the cohorts were subject to the exit exam requirements and one was not. The authors found that exit exam requirements had no positive effect on student achievement, modest negative effects, or no effects at all on student persistence through eleventh and twelfth grade, but significant negative effects on graduation rates, particularly for students of color and low-achieving students. Reardon and colleagues estimated that overall graduation rates declined by 3.6 - 4.5% as a result of exit exam requirements, with rates declining as much as 15 - 19% for low-achieving Black, Hispanic, and Asian students.
- Jacob and Dee (2009) used two sets of data from the 2000 Census Public Use Microdata Sample to assess the impact of exit exams on dropout rates. Using one dataset, they found that exit exams reduced the likelihood of completing high school, particularly among Black students. Among the other dataset, they found exit exams reduced the dropout rate in tenth and eleventh grades, but increased the dropout rate in twelfth grade, with a particularly negative effect on students of color. They suggest that exit exams exacerbate the inequality in educational attainment.

Examples of research that has found no evidence of a relationship between exit exams and dropout and/or graduation rates include the following:

- Bishop et al. (2001) evaluated dropout rates in 41 states using data from 1994-1997 and found no impact of state exit exams on dropout rates.
  - Davenport and colleagues (2002) evaluated the effects of a policy in Minnesota requiring high school students to pass an exit exam in order to graduate. They followed the class of 2000, the first cohort required to pass as a precondition of graduation and found that the exam did not have an overall negative effect on graduation rates, though students in at-risk categories including students of color had more difficulty passing the tests and graduating within four years.
  - Carnoy and Loeb (2003) developed an index of accountability based on the use of high stakes testing, such as exit exams, and assessed whether the index was related to changes in high school completion rates, among other outcomes, using multiple data sources from 1992
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through 2001. The authors found no relationship between the use of high stakes testing and completion rates.

- Greene and Winters (2004) evaluated the effect high school exit exams had on graduation rates from 1991 to 2001 using two different methodologies and found that in both cases, exit exams had no effect on graduation rates.
- Warren and Edwards (2005) assessed NELS data from the early 1990s and found that exit exams were not associated with an increased chance of obtaining a GED or leaving school with neither a GED nor a diploma. This finding held for low-income and low-achieving students. The authors caution that their results cannot be generalized to more recent graduating classes, as tests exams have become more challenging.
- Warren and Jenkins (2005) used Current Population Survey data from 1968 – 2000 to examine whether exit exams were associated with dropout rates and racial/ethnic and socioeconomic inequalities in dropout rates in Florida and Texas. The authors found no evidence that high school exit exams were associated with higher dropout rates in either state, even among students most at risk for dropping out.

Overall, research findings on high school exit exams and potential impacts on dropout and graduation rates have been inconsistent. This is due to the use of different data sets and the different approaches for accounting for extraneous influences on the data, as well as conceptual and technical methodological shortcomings (Warren et al. 2006).

Nonetheless, there is suggestive and growing evidence, particularly from more recent studies (Warren 2006, Reardon 2009, Jacob and Dee 2009), that exit exams can have negative impacts on dropout and graduation rates and can exacerbate racial/ethnic inequalities in educational attainment. In a recent article discussing the effects of high school exit exams on a variety of student outcomes, Warren and Grodsky (2008) conclude “Exit exams are just challenging enough to reduce the high school graduation rate but not challenging enough to have any measurable consequences for how much students learn or for how prepared they are for life after high school.”

There is very little evidence to explain how exit exams factor into students’ decisions to dropout of school (Center on Education Policy 2003) or why exit exams might have differential effects on graduation rates for students of color (Reardon 2009). Reardon and colleagues (2009) provide some evidence that exit exams disproportionately affect students of color and girls as a result of a stereotype threat. Under the stereotype threat hypothesis, when an individual’s performance has the potential to confirm a negative stereotype about his or her group, the individual can experience performance-related stress or anxiety, which leads their performance to be biased in the direction of that stereotype. Reardon found that students of color and girls were more likely to underperform and fail the exit exam at substantially higher rates than otherwise similar white and male students, leading to lower graduation rates under the exit exam requirement.

### **Relationship between Education and Health**

There is ample evidence to support that education is an important predictor of health (Meara 2008, Topitzes 2009, Fiscella and Kitzman 2009, Dilley 2009). Recent publications acknowledge the complex and cyclical relationship between education and health that over time contributes to disparities in each (Dilley 2009, Fiscella and Kitzman 2009). Fiscella and Kitzman (2009) conclude that addressing the academic achievement gap is essential to reducing health disparities.

Recently, the Robert Wood Johnson Foundation’s Commission to Build a Healthier America, in its issue brief *Education Matters for Health*, summarized the large body of evidence linking greater educational attainment with better health behaviors, self-reported health, health outcomes, and longer life expectancy (RWJF 2009). For example, high school graduates live about three years longer than those with less than a high school education. In addition, across all racial/ethnic groups, high school graduates are less likely to rate their health as less than very good than adults with less than a high school education. Moreover, the health benefits of education are tied to per year of education, not just to the attainment of a diploma (Lleras-Muney 2005, Cutler and Lleras-Muney 2006). Such evidence led the Commission to Build a Healthier America to conclude that, “...one of the most effective strategies for reducing health disparities in this country could be to take steps to close the gaps in educational attainment” (RWJF 2009).

Data from the Washington State Department of Health (2007) reveal that lower levels of education are associated with greater prevalence of smoking, binge drinking, obesity, and eating fewer fruits and vegetables. Washingtonians with less education have lower levels of health literacy, are less likely to have health insurance, and are less likely to use medical services, particularly preventive health services, than those with more education. In addition, lower levels of education are associated with higher rates of diabetes, drug-induced deaths, and deaths from breast cancer, heart disease, stroke, and suicide.

Education influences health through three pathways (RWJF 2009). First, a higher level of educational attainment results in protective health behaviors such as eating nutritious foods, participating in recommended levels of physical activity, and refraining from excessive alcohol and tobacco use. Second, greater educational attainment results in better employment opportunities and higher income, which in turn are linked to better health outcomes. As examples, people with less education are more likely to be exposed to workplace hazards such as chemical exposures and workplace stress. Workers with less formal education are also more likely to have jobs with fewer benefits such as paid sick leave, workplace wellness programs, and employer-sponsored health insurance, among others. Workers with more education are also more likely to have higher paid jobs, which results in greater access to higher quality housing, safer neighborhoods, improved access to nutritious foods and opportunities for physical education, and lower levels of stress, all of which are associated with improved health. Finally, a higher level of educational attainment results in a greater sense of control and higher levels of social standing and social support. These psychosocial factors can improve health through reducing stress, influencing health-related behaviors, and providing practical and emotional support.

## VI. Policy Considerations

During the 2009 legislative session, a substitute was recommended for SB 5260, the companion bill to HB 1341. Under the substitute bill, students would still be required to pass the state assessment as a precondition of graduation. The recommended substitute simply called for a collaborative review of incentive programs in other states to increase the number of students meeting state standards and to motivate students to pursue postsecondary education.

This health impact review hinged on the question, “Do exit exam requirements for graduation result in changes in dropout and/or graduation rates?” Clearly, it would be best to look to evidence in Washington State regarding any impacts on dropout and graduation rates as a result of the requirement that students meet standards on the statewide assessment as a precondition for high school graduation. Unfortunately, such evidence is not yet available. The class of 2008 was the first to be required to meet standards in order to graduate and data are just now becoming available to measure any impact on dropout and or graduation rates. OSPI’s Comprehensive Educational Data and Research System is a longitudinal data warehouse of education data, which could allow researchers to identify the percentage of students overall and by race/ethnicity or other subgroups who do not graduate due to an inability to pass the statewide assessment.

Moreover, there is anecdotal information from select school districts in the state that educational systems are reallocating resources in order to help students meet standards. Teachers, schools, and administrators face strong external motivation to ensure their students meet standards, creating a strong incentive for the educational system to adapt and better meet student needs.

Washington data are just now becoming available to rigorously evaluate not only the effects of linking the assessment requirements to graduation, but also whether and how changes made within the educational system better support student success on the statewide assessment and help students to graduate. Evaluating incentive programs in other states is certainly worthwhile and has the potential to identify best practices that could be implemented in Washington. In addition, however, evaluation in our own state at this critical time should not be overlooked.

## VII. Conclusion

If passage of HB 1341 were to have an impact on health disparities, there would have to be evidence demonstrating the following: (1) that policies requiring students to meet standards on exit exams in order to graduate result in changes in the level of educational attainment; (2) that such policies disproportionately impact students of color; and (3) that educational attainment has significant consequences for health.

While the class of 2008 was the first in Washington to be required to pass the reading and writing portions of the WASL in order to graduate, at the time of this review, there is no available study evaluating the impact of the WASL graduation requirements on dropout rates or graduation rates. Therefore, this review needed to look to the scientific literature to understand whether policies requiring students to meet standards on exit exams have an effect on dropout or graduation rates.

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There is ample evidence that high school graduates have better health behaviors, self-reported health, health outcomes, and longer life expectancy than adults with less than a high school education. However, while there is suggestive evidence from the literature that exit exams can have negative impacts on dropout and graduation rates, particularly for students of color, overall research findings are mixed and inconclusive. Further research is needed, particularly in Washington State, to understand the impacts of high school exit exam requirements on dropout and graduation rates. Until that research is completed, however, this review cannot definitively conclude what impact HB 1341 would have on health disparities.

## VII. References

Amrein, A. and Berliner, D. (2002). An Analysis of Some Unintended and Negative Consequences of High-Stakes Testing. The Great Lakes Center for Education Research and Practice.

Carnoy M and Loeb S (2003). Does External Accountability Affect Student Outcomes? A cross-State Analysis. *Educational Evaluation and Policy Analysis*, 24(4):305-331.

Center on Education Policy (2003). Effects of High School Exit Exams on Dropout Rates: Summary of a Panel Discussion.

Center on Education Policy (2009). State High School Exit Exam: Trends in Test Programs, Alternate Pathways, and Pass Rates.

Cutler D and Lleras-Muney A. (2006). *Education and Health: Evaluating Theories and Evidence*. National Poverty Center Working Papers Series. Ford School of Public Policy, University of Michigan.

Davenport et al. (2002). Minnesota High Stakes High School Graduation Test and Completion Status for the Class of 2000. Office of Educational Accountability, College of Education and Human Development, University of Minnesota.

Dilley J (2009). Research Review: School-based Health Interventions and Academic Achievement. September 2009.

Fiscella K and Kitzman H (2009). Disparities in Academic Achievement and Health: The Intersection of Child Education and Health Policy. *Pediatrics* 123:1073-1080.

Greene JP and Winters MA (2004). Pushed Out or Pulled Up? Exit Exams and Dropout Rates in Public High Schools. Education Working Paper No. 5, May 2004. Center for Civic Innovation at the Manhattan Institute.

Jacob B and Dee T (2009). Do high school exit exams influence educational attainment or labor market performance? Center for Local, State, and Urban Policy, University of Michigan.

Joint Select Committee on Health Disparities (2005). Recommendations from the Joint Select Committee on Health Disparities, November 2005, Washington State Legislature, Olympia, WA.

Lleras-Muney A (2005). The Relationship Between Education and Adult Mortality in the United States. *Review of Economic Studies*.

Madaus G and Clarke M (2001). The Adverse Impact of High Stakes Testing on Minority Students: Evidence from 100 Years of Test Data..

Meara E et al. (2008). The Gap Gets Bigger: Changes in Mortality and Life Expectancy by Education, 1981-2000. *Health Affairs*, 27(2):350-360.

Office of Superintendent of Public Instruction (2009). Dorn: State Exam Results Solid, But Not Whole Story. Press Release Presentation Materials. Accessed at: [www.k12.wa.us/Communications/PressReleases2009/WASL-HSRelease.aspx](http://www.k12.wa.us/Communications/PressReleases2009/WASL-HSRelease.aspx).

Reardon S, et. al. (2009). Effects of the California High School Exit Exam on Student Persistence, Achievement, and Graduation. Institute for Research on Education Policy and Practice.

Topitzes J et al. (2009). Educational Success and Adult Health: Findings from the Chicago Longitudinal Study. *Prev Sci*, 10:175-195.

U.S. Department of Health and Human Services (2000). *Healthy People 2010: Understanding and Improving Health*, 2<sup>nd</sup> ed., Washington, DC: U.S. Government Printing Office.

Warren J et al. (2006). High School Exit Examinations and State-Level Completion and GED Rates, 1973-2000. *Educational Evaluation and Policy Analysis*, 28(2):131-152.

Warren J and Edwards M (2005). High School Exit Examinations and High School Completion: Evidence from the Early 1990s. *Educational Evaluation and Policy Analysis*, 27:53-74.

Warren J and Grodsky E (2008). State Exit Exams Harm the Students Who Fail Them and Do Not Benefit the Students Who Pass Them. Now What?

Warren J and Jenkins K (2005). High Stakes Graduation Tests and High School Dropout in Texas and Florida, 1979-2001. *Sociology of Education*, 78:122-143.

Washington State Department of Health (2007). The Health of Washington State. December 2007. Accessed at: <http://www.doh.wa.gov/HWS/default.htm>.

Washington State Institute for Public Policy (2006). A Historic Look at the WASL and High School Graduation. September 2006.