

**Sex Education in New Haven:**

**The Case of the Michigan Model for Health**

Education Studies Capstone

Liza Rodler  
Adviser: Carla Horwitz  
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## Introduction

Thirty-two faces stared blankly back at me as I pulled a condom out of my drawstring backpack. The small blue package read *Lubricated*, and my heart sank. Not only had the group teaching before me forgot to replace the wooden phallus, but they had also run out of non-lubricated condoms. I tried to remain calm as I reached for my own backpack, and fished around the bottom for the banana I was saving for lunch.

As a workshop teacher with Community Health Educators, I was trained to respond to tough personal questions, reign in rowdy students and draw quiet ones out of their shells. However, no amount of training can truly compensate for the fact that a public school district had to rely on a group college volunteers to design and teach a health education curriculum after funding was cut for health education in the early 1990s. No amount of training can make up for the fact that some students will be sick on a workshop day and never receive the information, or a volunteer will accidentally sleep through her alarm and never teach the class, or a volunteer will have no choice but to lead a demonstration with a lubricated condom and over-ripe banana.

Even the existence of an organization like Community Health Educators demonstrates the need for community and district buy-in to a more permanent system of sex education. In 2013, the New Haven Public School District took a major step towards this goal by purchasing the Michigan Health Model (MHM), a health education curriculum for K-12 students that included an abstinence-based sex education unit. Rather than dissolve completely, CHE has shifted its resources towards assisting schools in the rollout of the new model by matching its workshops more closely with the MHM standards and teaching workshops in schools whose teachers are still in the process of health certification training. Although on some level CHE's goal is to become unnecessary to the New Haven community after schools fully take on the responsibility of providing students with comprehensive health education, the adoption of the MHM does not guarantee the end of CHE.

## Road Map

As a member of CHE, I hope to evaluate the Michigan Health Model as it is likely to function in New Haven Public Schools, and make recommendations for the gaps that must be filled by community organizations and partners. I will begin by outlining the history of sex education in the United States from both a social and policy standpoint. Current attitudes towards sex education, both in terms of content and the role of public schools in providing instruction, is very much a product of the past century of sex education policy, which in itself is a reflection of broader shifts in attitudes towards the subjects of sex and public health crises. Although education reformers may hope that strong connections exist between research, policy and practice in the domain of sex education, social and political trends act as limits to these connections. As multiple strategies for teaching sex education have developed, a body of research has grown, but federal and policy has rarely kept up with the recommendations of researchers for fear of disrupting the support of socially conservative constituents.

After this broad review, I will zoom in to the case of New Haven. Reviewing a brief history of New Haven's progressive policies will help to put the city in the context of the state and surrounding areas, particularly as it relates to New Haven Public Schools' tumultuous relationship with sex education.

This review will lay the groundwork for an evaluation of the recently adopted Michigan Model for Health curriculum of sex education. Because the rollout of the curriculum only began in 2014, the goal of my evaluation will be to identify gaps in the curriculum and provide suggestions for resources the New Haven Public Schools could seek out to fill them. To evaluate the Michigan Health Model for the case of New Haven, I will first include a literature review of the past 50 years' worth of investigations into various sex education models and an economic approach. I will then

qualitatively approach the topic as an economist would with education production function, which involves distilling the complex collection of relevant factors into inputs and outputs.

### History of Sex Education in the United States

The roots of the American system of sex education can be found in the Social Hygiene campaigns of the early twentieth century.<sup>1</sup> As some Americans formed a consensus that public drunkenness, prostitution, and general immorality represented a growing problem in the country, Prince A. Morrow began to argue that these problems arose out of ignorance, rather than evil human nature.<sup>2</sup> The social hygiene, or “sex hygiene” movement, argued that sex should remain within the context of marriage to prevent the spread of STIs and other negative consequences of sex. As the U.S. transitioned into World War I, perceived need for this instruction increased with fears that soldiers would continue to acquire venereal disease abroad. The Chamberlain-Kahn Act of 1918 was enacted to establish a protocol for quarantining individuals suspected of having an STI, but it also established the first federal funding stream to sex education through creating the Division of Venereal Disease in the Bureau of the Public Health Service.<sup>3</sup>

With new momentum in the need for sex education, the next question to address pertained to which governmental bodies would take on the responsibility of educating American youth about sexual health. Although funding streams flowed through the Public Health Services, public schools emerged as the main source of health education instruction in 1912, as the National Education Association passed the first regulations for sex education in schools.<sup>4</sup> This legislation mandated education for primary school students, as only a fraction stayed in school past then. As Chicago

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<sup>1</sup> Huber, V., & Firmin, M. (2014). A History of Sex Educaiton in the United States Since 1900. *International Journal of Educational Reform*, 23(1), 25–51.

<sup>2</sup> Ibid.

<sup>3</sup> Chamberlain-Kahn Act. (2016, December 12). In *Wikipedia*.

<sup>4</sup> Huber, V., & Firmin, M. (2014). A History of Sex Educaiton in the United States Since 1900. *International Journal of Educational Reform*, 23(1), 25–51.

emerged as the first major public school district to implement sex education, it also took on a role as a pilot study for future curricula. In 1922, the Public Health Service published a manual for high school sex education, which included lessons from the Chicago pilot, such as incorporating sex education into physical education or science classes to avoid controversy, or calling it “family life education” to avoid pushback from conservative parents and the Catholic Church.<sup>5</sup>

Over the next few decades as public school districts designed and piloted health education programs, improvements in contraceptive technology and growing women’s rights movements gave rise to the American Birth Control League in 1921, which would become Planned Parenthood in 1942.<sup>6</sup> These organizations would later represent another stream through which federal funds would travel to deliver sex education instruction, as well reproductive health care. The last major body to form was the Sexuality Information and Education Council of the United States (SIECUS) in 1964, which continues to stand as a major research and advocacy institution for sex education.

Throughout these same decades, the nation saw dramatic shifts in ideology and attitudes concerning sex, marriage, and reproductive health care. The “moral decay” of the early twentieth century gave way to conservatism, which shifted again as the Sexual Revolution of the 1960s pushed for sex positivity and liberalism. Sex education followed these trends closely, as support shifted away from abstinence-only programs and towards sex-positive and comprehensive instruction in the 1960s and 1970s. However, a counterrevolution led support to swing back towards abstinence-based programs, which was in turn supported by a conservative legislature in the U.S. Congress. As the divide grew between factions that supported comprehensive sex education and the more conservative groups calling for a return to abstinence-based sex education, legislation passed in the 1970s helped to solidify and legitimize both groups. In 1970, Richard Nixon signed Title X into law, which guaranteed federal funds to support community-based family planning education and services.

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<sup>5</sup> Huber, V., & Firmin, M. (2014). A History of Sex Educaiton in the United States Since 1900. *International Journal of Educational Reform*, 23(1), 25–51.

<sup>6</sup> Ibid.

In 1978, Jimmy Carter amended Title X to specifically mandate that unmarried teens must be a target of pregnancy prevention measures. In the same year, the Adolescent Health Services and Pregnancy Prevention and Care Act legalized contraceptive and abortion counseling as topics of sex education classes.<sup>7</sup>

Shortly after this wave of progressive sex education legislation, a more conservative series of congressional acts solidified funding for programs in favor of abstinence-based education. In 1981, Ronald Reagan passed the Adolescent Family Life Act (AFLA), also known as Title XX of the Public Health Service Act, without any floor votes or hearings in Congress.<sup>8</sup> AFLA designated funds for religious and government bodies to promote “self-discipline and other prudent approaches to the problem of adolescent premarital sexual relations,” in addition to funding services for pregnant and parenting teenagers and their families.<sup>9</sup> The American Civil Liberties Union (ACLU) filed a lawsuit against the legislation, claiming that its support for religious organizations violated the First Amendment. In *Bowen v. Kendrick* (1987), the Supreme Court ruled that the AFLA had valid nonreligious purposes, as long as the religious institutions that received funds did not use the money to teach or promote religion.<sup>10 11</sup>

The arrival of the HIV epidemic in the 1980s led to increased concern and need for sex education in public schools, but federal and state policies requiring HIV education lagged far behind the prevalence of the disease itself. President Ronald Reagan did not mention HIV/AIDS in a public speech until 1986, by which point over 16,000 people in America had died from AIDS.<sup>12</sup> That same year U.S. Surgeon General Everett Koop called for sex education to include information about

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<sup>7</sup> Huber, V., & Firmin, M. (2014). A History of Sex Educaiton in the United States Since 1900. *International Journal of Educational Reform*, 23(1), 25–51.

<sup>8</sup> SIECUS - A Brief History of Federal Funding for More Comprehensive Approaches to Sex Education FY10. (n.d.). Retrieved February 16, 2017, from <http://www.siecus.org/index.cfm?fuseaction=page.viewpage&pageid=1341>&

<sup>9</sup> Huber, V., & Firmin, M. (2014). A History of Sex Educaiton in the United States Since 1900. *International Journal of Educational Reform*, 23(1), 25–51.

<sup>10</sup> *Bowen v. Kendrick*, 1987.

<sup>11</sup> SIECUS - A History of Federal Abstinence-Only-Until-Marriage Funding FY10. (n.d.).

<sup>12</sup> AIDS Timeline. (n.d.). Retrieved April 26, 2017, from <http://www.factlv.org/timeline.htm>

HIV/AIDS, at which point the regulations requiring sex education and HIV education began to diverge. As of 2016, 24 states and Washington DC require public schools to teach sex education, while 33 states and DC require HIV/AIDS education.<sup>13</sup>

The AFLA stood as the primary funding source for many abstinence-based programs in the U.S. until 1996, when Bill Clinton passed the Welfare Reform Act. This triggered Title V, Section 510(b) of the Social Security Act, which established a new set of block grants to states for abstinence-only-until-marriage education programs. The HIV/AIDS epidemic that began in the 1980s played a key role in gaining bipartisan support for reforming sex education and encouraging states to adopt mandates for HIV education. Under this legislation, Health and Human Services allocated \$50 million each year to states based on a calculation of the number of low-income students in each state, and in turn states had to agree to match funds (\$3 state dollars per \$4 federal dollars) and determine which community-based organizations, local health departments, schools, media groups, or faith-based organizations would receive the money.<sup>14</sup> Section 510(b) established eight points to define abstinence-only-until-marriage education (see chart on p. 8). When the HHS's Maternal and Child Health Bureau administered the funds, programs were given some wiggle room in meeting each piece of criteria, though all were prohibited from discussing any aspect of contraceptive technology, including failure rates.

As George Bush campaigned with an outspoken goal to achieve parity in funding between abstinence-only-until-marriage and comprehensive sex education, many comprehensive sex education programs rebranded themselves as “abstinence-plus.”<sup>15</sup> However, when Bush switched the funding to the HHS's more conservative Administration for Children and Families, grant-receivers were held more strictly to each piece of criteria. In 2001, the introduction of the Special

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<sup>13</sup> State Policies on Sex Education in Schools. (2016, December 21).

<sup>14</sup> SIECUS - A History of Federal Abstinence-Only-Until-Marriage Funding FY10. (n.d.).

<sup>15</sup> Huber, V., & Firmin, M. (2014). A History of Sex Educaiton in the United States Since 1900. *International Journal of Educational Reform*, 23(1), 25–51.

<b>Section 510 (b) of Title V of the Social Security Act, P.L. 104–193</b>	
For the purposes of this section, the term “abstinence education” means an educational or motivational program which:	
<b>A</b>	has as its exclusive purpose teaching the social, psychological, and health gains to be realized by abstaining from sexual activity;
<b>B</b>	teaches abstinence from sexual activity outside marriage as the expected standard for all school-age children;
<b>C</b>	teaches that abstinence from sexual activity is the only certain way to avoid out-of wedlock pregnancy, sexually transmitted diseases, and other associated health problems;
<b>D</b>	teaches that a mutually faithful monogamous relationship in the context of marriage is the expected standard of sexual activity;
<b>E</b>	teaches that sexual activity outside of the context of marriage is likely to have harmful psychological and physical effects;
<b>F</b>	teaches that bearing children out-of-wedlock is likely to have harmful consequences for the child, the child's parents, and society;
<b>G</b>	teaches young people how to reject sexual advances and how alcohol and drug use increase vulnerability to sexual advances, and
<b>H</b>	teaches the importance of attaining self-sufficiency before engaging in sexual activity.

Programs of Regional and National Significance – Community Based Abstinence Education

(SPRANS-CBAE) became the largest federal funding program for community-based programs.<sup>16</sup>

These programs were the main instrument to work towards achieving parity in funding, even as they required grantees to strictly meet all eight Section 510(b) requirements, focus on students ages 12-18, and refrain from offering any information about contraception. These grants bypass the state governments and are distributed directly to community-based groups.<sup>17</sup>

Years later, Barack Obama brought the end of federal funding for abstinence-based education.<sup>18</sup> The first wave came in 2010, with Obama’s decision to let the Welfare Reform Act’s block grants expire, but the Affordable Care Act set up a new stream of \$50 million per year for

<sup>16</sup> Dailard, C. (2002). Abstinence Promotion and Teen Family Planning: The Misguided Drive for Equal Funding. *Guttmacher Institute Report on Public Policy*, 5(1), 1–3.

<sup>17</sup> Ibid.

<sup>18</sup> Kotz, D. (2009, May 7). Obama Budget Eliminates Funding for Abstinence-Only Sex Education.

abstinence-based education block grants. These grants expired with the 2015 federal budget, and all remaining funds for abstinence-only-until-marriage education was cut in the FY 2017 budget.<sup>19,20</sup>

It is important to note that federal funding for comprehensive sex education was still far greater than that for abstinence-based education, but the fact that funding increased for abstinence-based education in spite of mounting evidence of its ineffectiveness showed the power of conservative legislators in pushing policies through. Along these lines, comparisons of the 1995 and 2002 National Surveys of Family Growth show that the percentage of youth who reported receiving formal instruction about birth control declined during this period, from 81% to 66% of females and 87% to 70% of males.<sup>21</sup> It is unclear from these surveys whether this instruction was medically accurate, or emphasizing the success rates or failure rates of contraceptive methods, but the trend still suggests the increases in funding for abstinence-based education had a noticeable effect on student learning.

### Research: Evidence for Curricula

Although many factors influenced the major and subtle shifts in public opinion about how sex education should be administered to students, academic research into the efficacy of various programs has had a limited impact. Following the American consensus that sex education is needed to teach students the information and skills needed to prevent unwanted pregnancies, STIs, and harmful psychological consequences of sex, research has focused on the differences in effects of abstinence-only, abstinence-only-until-marriage, abstinence-plus, and comprehensive sex education. These curricular ideologies belong on a spectrum rather than split into four categories, as the differences between them rely heavily on the perspectives of teachers and communities.

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<sup>19</sup> Nelson, S. (2014, March 5). Obama's Budget Proposal Slashes Obamacare Abstinence Grants.

<sup>20</sup> President Obama cuts funding for all abstinence-only sex education. (2016, February 18).

<sup>21</sup> Lindberg, L. D., Santelli, J. S., & Singh, S. (2006). Changes in Formal Sex Education: 1995–2002. *Perspectives on Sexual and Reproductive Health*, 38(4), 182–189.

Researching sex education curriculum is complicated by the many different – and difficult-to-measure – goals of such programs. With this in mind, most researchers aim to compare the frequency of behaviors in youth that dramatically increase risk of contracting STIs or becoming pregnant without intending to, including the age at which students begin having sex, frequency of sex, number of sexual partners, and use of contraception. The second category of outcomes of interest includes health measures, such as incidence of STIs and unwanted pregnancies. Most research relies on self-reported data from school-administered surveys, and is therefore vulnerable to reporting bias. Beyond the question of medical accuracy, researchers and educators still face the broad question of which sex education strategies succeed in decreasing students' risky behavior and improving reproductive health. A variety of strategies have been investigated, from virginity pledges to “safer-sex” curricula.

Douglas Kirby, one of the most prominent scholars in the field of sex education, has published multiple reviews of research on various sex education models. In general, he suggests that abstinence-focused education is less effective than comprehensive sex education, and that even the most effective programs do not reduce sexual risk taking by a large magnitude. After reviewing 450 studies of sex education in the United States, completed between 1990 and 2007, Kirby found that only 60% analyzed programs that decreased students' frequency of sex, 41% reduced the number of students' sexual partners, and 41% increased the use of condoms.<sup>22</sup> The remainder of studies reported programs had no significant impacts in these areas. However, in spite of Kirby's report of a muddled consensus about sex education broadly, there is reliable research that supports certain methods of sex education over others.

Jemmott et al. (1998) performed a randomized control trial to assess whether abstinence-only or safer-sex curricula could increase a group of African American students' precautions against

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<sup>22</sup> Kirby, D. (2007). *Emerging Answers*. The National Campaign to Prevent Teen and Unplanned Pregnancy.

HIV.<sup>23</sup> The authors found that both types of curricula decreased HIV sexual risk behaviors, but safer-sex interventions had a longer lasting effect and work better in populations that are already sexually active, and led to greater decreases in sexual activity and increases in condom use.

In line with abstinence-only education, virginity pledges emerged as a strategy to reduce risky sexual behavior in the early 1990s, sponsored in large part by the Southern Baptist Church.<sup>24</sup> Research into these pledges has shown they work to delay students' first sexual intercourse, but are only effective in areas where very few students take the oath. Additionally, students who break their virginity pledges were less likely to use contraception during first intercourse.<sup>25</sup>

Beyond curricula, Pearson (2006) studied the relationship between measures of personal control and sexual risk, and found that girls tend to engage in more sexual risk than boys.<sup>26</sup> However, the predicted probability of having sex decreased as the level of personal control increased for girls, but not boys. Pearson suggests instilling personal control and self-esteem should be a prominent goal of sex education curriculum.

In 2007, the U.S. Congress commissioned Mathematica Policy Research to investigate the effectiveness of Title V abstinence-only programs. After nine years of data collection, the report indicated that none of the four programs involved in the study had any significant impact on students' sexual behavior.<sup>27</sup> According to the study, students that received Title V programs reported having first intercourse at the same age, having the same number of sexual partners, and participating in unprotected sex at the same rates. The study dispelled some criticism that Title V programs were actively harmful to students, but students in Title V programs were more likely to

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<sup>23</sup> Jemmott, J. B., Jemmott, L. S., & Fong, G. T. (1998). Abstinence and safer sex HIV risk-reduction interventions for African American adolescents: a randomized controlled trial. *JAMA*, 279(19), 1529–1536.

<sup>24</sup> Bearman, P. S., & Bruckner, H. (2001). Promising the Future: Virginity Pledges and First Intercourse. *American Journal of Sociology*, 106(4), 859–912.

<sup>25</sup> Ibid.

<sup>26</sup> Pearson, J. (2006). Personal Control, Self-Efficacy in Sexual Negotiation, and Contraceptive Risk among Adolescents: The Role of Gender. *Sex Roles*, 54, 615–625.

<sup>27</sup> Trenholm, C., Devaney, B., Fortson, K., Quay, L., Wheeler, J., & Clark, M. (2016, December 8). Impacts of Four Title V, Section 510 Abstinence Education Programs.

underestimate the effectiveness of various contraceptive methods at preventing the spread of STIs. Overall, the report indicated that the four Title V programs had no significant impact on students three and five years after completing the curricula.<sup>28</sup>

### Federal Policy Reacts to Evidence

Although the body of scientific literature supporting comprehensive sex education over abstinence-only education grew throughout the 1980s, 1990s, and 2000s, federal policy has still succeeded in increasing funding for abstinence-only education relative to comprehensive programs.<sup>29</sup> Lindberg et al. (2006) found that the percentage of students receiving any type of formal instruction about birth control, a topic banned from Title V classrooms, decreased in the years following the passage of the Welfare Reform Act. The authors found that these changes are a direct result of policy changes, and that the magnitude of decreases in students receiving formal education about birth control are significant – 15% for female students and 6% for male students.<sup>30</sup> However, in 2003, Landry et al. found that over 95% of students between the ages of 15 and 19 had sex education, with significant variation in the details of those instructions. The rates vary by region and student income level, with high-poverty schools in the Midwest and South reporting the lowest rates of sex education instruction.<sup>31</sup> Although this research has interacted with policy, it had relatively little impact on policy decisions at the federal level.

One of the first bodies of research to have a more public impact was involved with federal officials from the beginning. In 2004, an investigation commissioned at the request of Rep. Henry A.

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<sup>28</sup> Trenholm, C., Devaney, B., Fortson, K., Quay, L., Wheeler, J., & Clark, M. (2016, December 8). Impacts of Four Title V, Section 510 Abstinence Education Programs.

<sup>29</sup> Huber, V., & Firmin, M. (2014). A History of Sex Education in the United States Since 1900. *International Journal of Educational Reform*, 23(1), 25–51.

<sup>30</sup> Lindberg, L. D., Santelli, J. S., & Singh, S. (2006). Changes in Formal Sex Education: 1995–2002. *Perspectives on Sexual and Reproductive Health*, 38(4), 182–189.

<sup>31</sup> Landry, D. J., Darroch, J. E., Singh, S., & Higgins, J. (2003). Factors Associated with the Content of Sex Education In U.S. Public Secondary Schools. *Perspectives on Sexual and Reproductive Health*, 35(6), 261–262.

Waxman in the U.S. House of Representatives Committee on Government Reforms found that over 80% of abstinence-only curricula used by over two thirds of the SPRANS grant recipients contain factually inaccurate or misleading information about sexual and reproductive health.<sup>32</sup> These inaccuracies included overstating contraceptive failure rates, exaggerating the instances of complications from abortions, infusing religious ideology into scientific explanations, and reinforcing societal gender stereotypes as fact.<sup>33</sup>

Shortly after this report called many of the abstinence-only curricula into question, the Government Accountability Office released a report indicating that the Agency for Children and Families (government body in charge of distributing Title V and CBAE funds) had no policies to review curricula for accuracy.<sup>34</sup> Rather, all requirements for medical accuracy were written at the state level. For example, as of 2008, only seven states required all sex education curricula to be verified or research-supported, include material published in peer-reviewed journals, and be recognized as accurate and objective in mainstream professional organizations.<sup>35</sup>

Although adjustments were made in reaction to the Waxman Report, federal policy has generally been slow to react to scientific research. Rather than wait for guidance at the federal level, states have been quicker to adjust to the evidence. As of 2009, 23 states had opted out of Title V funding and instead pursued other funding streams for programs that do not meet the strict Section 510(b) requirements.<sup>36</sup> However, the significant variation that remains throughout state policies has pushed more of the ownership of sex education instruction to school districts themselves.

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<sup>32</sup> US House of Representatives Committee on Government Reform - Minority Staff Special Investigations Division. (2004). *The Content of Federally Funded Abstinence-Only Education Programs* (pp. 1–22).

<sup>33</sup> SIECUS - Waxman Report. (n.d.).

<sup>34</sup> Santelli, J. S. (2008). Medical Accuracy in Sexuality Education: Ideology and the Scientific Process. *American Journal of Public Health*, 98(10), 1786–1792.

<sup>35</sup> Ibid.

<sup>36</sup> Boonstra, H. D. (2009, March 3). Advocates Call for a New Approach After the Era of “Abstinence-Only” Sex Education.

## **History of the Michigan Health Model**

The decision process to bring the Michigan Health Model to New Haven was not discussed with the public, so the details of the debate remain largely confidential. The final decision was announced in early 2013, including the plan to start the rollout in middle schools in the 2014-2015 school year, and in high schools in 2015-2016.

However, the Michigan Health Model has existed since long before New Haven Public Schools began considering it for implementation. The Michigan Health Model was officially created in 1984, but creation process began years earlier both in political and educational spheres. In 1982, Governor James Blanchard established the State Health Coordinating Council Task Force on Comprehensive School Health Education. This Task Force released recommendations for a new era of health education in Michigan, which were endorsed by the Michigan Board of Education endorsed the Task Force's findings in 1983. The following year, representatives from the Department of Education, Department of Health, and the State Police Department collaborated to create a State Steering Committee. This team pooled together resources to create the Michigan Health Model in 1985, and relied on grants from the Department of Public Health to fund the writing and distribution of the curriculum, as well as the training of teachers.<sup>37</sup>

The MHM was originally created to act as a mandatory curriculum for all K-6 students in Michigan, but over time additional units were created for middle school and high school students. The MHM is a comprehensive health curriculum, meaning it contains units on many topics including nutrition, substance abuse and mental health. The Healthy and Responsible Relationships unit for high school students includes topics relating to STIs, pregnancy, contraception and relationships. This curriculum was created in three versions to align health education regulations at

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<sup>37</sup> MDHHS - Program History. (n.d.).

the district and community level: abstinence-only, abstinence-based for disease risk-reduction (with condoms but no contraception), and abstinence-based with contraception (including condoms).

Although the creation of the MHM was mostly achieved through top-down reforms, the Steering Committee also designed infrastructure at the community level to assist with the implementation and maintenance of the curriculum. The Steering Committee also established School Health Coordinators at each site in the network to facilitate the implementation of the MHM, as well as Educational Materials Centers to publish and distribute the curriculum.

Since its creation, the MHM has received approval by the Collaborative for Academic and Social Emotional Learning (CASEL), a nongovernmental organization that evaluates curriculum and provides recommendations regarding curriculum selection. The only quantitative study that has been done to evaluate the effectiveness of the MHM was in 2011, and only assessed the effectiveness of the nutrition unit for a small sample of fourth and fifth grade students.<sup>38</sup> In spite of this lack of quantitative evaluations, the MHM has been implemented in school districts throughout 39 states.

### History of New Haven Policy

Throughout the shifts in attitudes towards sex and contraception in the nation as a whole, New Haven established itself as a city willing to invest in progressive solutions to controversial public health issues. I will highlight three policies that established New Haven as innovator in the region for policies that support the mission of health educators: the Polly T. McCabe School, the Celotto Nursery, and the 1993 condom distribution plan.

Before the passage of Title IX, which required pregnant mothers to receive the same education as other students, the Polly McCabe School opened in 1966 to allow pregnant teenagers in New Haven to continue receiving high school education when the traditional public schools would

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<sup>38</sup> O'Neill, James M., Jeffrey K. Clark, and James A. Jones. 2011. "Promoting Mental Health and Preventing Substance Abuse and Violence in Elementary Students: A Randomized Control Study of the Michigan Model for Health." *Journal of School Health* 81(6):320–30.

not.<sup>39</sup> Though the school was originally founded by doctors in the basement of St. Luke’s Episcopal Church, it moved to a permanent facility in 1985.<sup>40</sup> The main goal of the school was to decrease the proportion of students who dropped out of school upon becoming pregnant, and to make up for the lack of counseling and services available to pregnant girls in traditional public schools.

Beyond largely positive anecdotal evidence, a few quantitative evaluations of Polly McCabe also support the effectiveness of New Haven’s strategy to support pregnant high school students. Apfel and Seitz, two Yale researchers, followed the cohort of students that gave birth between 1979 and 1980, and reported that girls who were allowed to stay enrolled in Polly McCabe for longer periods were significantly less likely to have subsequent births in the next two years, as compared to girls only allowed to stay for less than seven weeks.<sup>41</sup> Apfel and Seitz also found that mothers at Polly McCabe were significantly less likely to give birth to low birth weight babies than other “urban poor young mothers in the United States” (5% vs. 15-20%, respectively).<sup>42</sup>

The number of students attending Polly McCabe decreased in the 1990s and 2000s, but the school continued to provide students with door-to-door bus service, on-site childcare, prenatal care, and counseling.<sup>43</sup> In 1994, an estimated 60% of New Haven students who became pregnant chose to transfer to Polly McCabe, leaving the school with a population of 76.<sup>44</sup> In 2006, enrollment was down to 38,<sup>45</sup> and in 2016 it was down to nine.<sup>46</sup> In April 2016, Principle Belinda Carberry told the *New Haven Independent* that in recent years, more pregnant students have opted to receive counseling, health education, and other supports from their mainstream public schools, rather than enroll in

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<sup>39</sup> Swaby, A. (2016, April 7). School Shrinks As Teen Moms Mainstream.

<sup>40</sup> Morris, G. (1994, May 29). Where Student Moms Learn to Keep Going. *New York Times*, p. 13.

<sup>41</sup> Seitz, V., & Apfel, N. H. (1993). Adolescent mothers and repeated childbearing: effects of a school-based intervention program. *The American Journal of Orthopsychiatry*, 63(4), 572–581.

<sup>42</sup> Morris, G. (1994, May 29). Where Student Moms Learn to Keep Going. *New York Times*, p. 13.

<sup>43</sup> Halpern, J. (2011, February 27). New Haven school educates just one kind of student: pregnant teens. *Boston Globe*.

<sup>44</sup> Morris, G. (1994, May 29). Where Student Moms Learn to Keep Going. *New York Times*, p. 13.

<sup>45</sup> Abraham, M., & Buchanan, M. (n.d.). Greater New Haven Community Index 2016.

<sup>46</sup> Swaby, A. (2016, April 7). School Shrinks As Teen Moms Mainstream.

Polly McCabe.<sup>47</sup> In September 2016, the Board of Education moved to close Polly McCabe to teenage mothers and reallocate funds towards supporting childcare and counseling services at mainstream high schools.

A resource that contributed to the decline in demand for Polly McCabe's services can be found in Wilbur Cross High School, at the Celotto Nursery. The nursery was created in 1995, after a Yale Law School student discovered 60 pregnant girls attended Wilbur Cross during the 1993-94 school year.<sup>48</sup> In this same period, New Haven was emerging as the epicenter of the AIDS epidemic in the state of Connecticut, and the city stood at the frontlines of developing HIV education policies in response.<sup>49</sup> New Haven became the first city in the state, and second in the country after New York City, to offer condoms to public school students to students starting in Grade 5.<sup>50</sup> As evidenced by these many interventions, New Haven has a history of progressive health programs for public school students. The reasons for the removal of health education spending from the education budget in the early 1990s has not been discussed in public, and for the purpose of understanding the potential of the Michigan Health Model it is not currently relevant. However, it is important to emphasize that this move was a break from New Haven's history of progressive policy.

### **Plan for Evaluating the Michigan Health Model**

#### *Metrics of Evaluation: Inputs and Outputs*

The methods for my evaluation are roughly based on the theoretical framework that economists use to model the education production function, or the relationship between the factors that go into an education system and the outcomes researchers are interested in measuring. These

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<sup>47</sup> Swaby, A. (2016, September 22). Polly McCabe Transformed.

<sup>48</sup> Calagiovanni, 2013.

<sup>49</sup> Levy, C. J. (1993, July 28). Condom Plan Is Authorized In New Haven. *The New York Times*.

<sup>50</sup> Ibid.

methods treat education as a labor production function in which inputs are added to the model, interacted through a production function, and then observed as a collection of outputs.<sup>51</sup>

*Framework:*

$$\text{Health} = f(\text{curriculum}, \text{community resources}) + \text{controls} + \text{error}$$

This framework also highlights why sex education curriculum is particularly difficult to evaluate. For this to be possible, we would need a solid understanding of the factors that act as inputs in the model, a method of observing the production function itself, a method of measuring the outcome variables of interest, and a reasonable unit of measurement (i.e. the school level, the district level, state level, etc.). For this case study, I selected variables that I have deemed to be feasible to measure and reasonable targets of a sex education curriculum.

#### **Inputs: Curriculum, Community Resources**

Curriculum is one of the most important input factors in the sex education production function, but by no means the only one. In this case, the curriculum in question will be the Michigan Health for Health – specifically the Healthy and Responsible Relationships unit, which contains information about sexuality, reproductive health, HIV/AIDS and STIs, and unwanted pregnancy. Although the way sex education is situated within health education more broadly is an important subject of research, it will remain outside the scope of my analysis. To evaluate the curriculum in this context, I will apply Kirby’s 17 Principles of Effective Sex Education Curriculum (2007) using the *Tool to Assess Characteristics of Effective Sex and STD/HIV Education Programs (TAC)*, which has been developed to assess curricula regardless of where it falls along the spectrum between abstinence-only and comprehensive sex education.

Another key set of inputs will be community and school resources available to students to supplement the educational materials provided in class. These include clinics based in schools and

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<sup>51</sup> Hanushek, E. A. (n.d.). Education Production Functions.

local neighborhoods that provide access to contraception, STI testing, and abortions. The quality and accessibility of these resources, as well as their ability to supplement Michigan Health Model materials, will be assessed through school visits and observations at high schools within the New Haven district.

Local, state, and federal policy can also be thought of as inputs in this case. The presence of mandates to provide sex education, or specific guidelines to meet, are likely to change the behaviors of schools in how they navigate choices about sex education. I have already briefly reviewed the Connecticut Department of Education's requirements for health and sex education, and will factor these requirements into the ultimate assessment.

***Function: Implementation (teachers, schools), Structural factors***

This section can be thought of as the pieces of the function that cannot be changed by the inputs. For example, the curriculum selected by a school or school district has no power to address the levels of parental education, income, or access to health care within the student body. That is not to say these factors are unimportant – rather, they must be controlled for in evaluating any set of inputs, because they are tied to the outputs we are interested in measuring. In this case, the structural factors important to understand the population of New Haven include income and poverty levels, access to health services, levels of parental education, race, and historical rates of unwanted teen pregnancies and STIs. These factors are all correlated with different rates of sexual health and unwanted teen pregnancy, regardless of the sex education curriculum provided to students.

The production function itself may be the most difficult piece of the puzzle to measure, but arguably the most important. Even given the exact same curriculum, implementation may differ significantly based on the characteristics of teachers and the surrounding community. The key components here can be broken down at the school and community level. Within each school, the

opinions and training of teachers has a large impact on the way the curriculum is delivered. With this in mind, I will consider the levels of community and parental support in the areas.

### *Outcomes of Interest*

Much of the current body of sex education research uses a broad collection of outcomes that relate to risky sexual behavior, which may include number of sexual partners, age at first intercourse, and frequency of sex. Even as these risk behaviors do increase the likelihood of acquiring STIs and becoming pregnant, I will argue that many of these considerations are left over from previous eras of social conservatism.

In the case of New Haven, the purpose of sex education should not be to discourage sex, but rather to make informed choices about sexual activity. With this in mind, I will focus instead on the measures of contraceptive use, rates of STDs, and rates of unwanted pregnancy. To get this information, I will rely on the Centers for Disease Control's Youth Risk Behavior Survey, which provides estimates of many metrics of teens' sexual risk taking through bi-annual surveys dating back to 2007. This information is only provided at the state level, but the CDC provides supplemental estimates of teen birth rate and other relevant statistics that can be used to roughly gauge how New Haven's students compare to students throughout the rest of the state in these categories.

Knowing the implementation of the Michigan Model for Health is still in the early stages, it is too early to confidently assess how successful it will be in this context. For this reason, I will not report any results for this section, and reiterate the need for improved systems of measurement at the school level. However, mapping out this production function can offer insight into the areas of strength and weakness of this curriculum in this context, as well as provide a roadmap for future evaluations of the curriculum once it has been fully implemented long enough to observe changes in student behavior that come as a result.

## **Evaluation of Michigan Health Model for New Haven**

### **Input: Curriculum**

In partnership with the Healthy Teen Network and ETR Associates, health education researcher Doug Kirby developed a *Tool to Assess Characteristics of Effective Sex and STD/HIV Education Programs (TAC)* in 2007.<sup>52</sup> After completing his systematic review of 83 sex education programs and performing a meta-analysis of other relevant research, Kirby identified 17 points of criteria that characterized the majority of “effective” sex education programs. These criteria are not quantitative in nature – rather, they are intended to outline general characteristics that educators of all backgrounds can use to review potential curricula for a specific set of students.

Kirby split this set of criteria into three categories: curriculum development, curriculum, and implementation. In doing so, he points to the importance of factors outside the realm of the curriculum itself, including the way the curriculum was created, the alignment of curricula with community values, and the rigor of implementation. To apply the TAC to the Michigan Model for Health, I will use the same three categories of criteria.

However, rather than assess the curriculum as it was designed for implementation in Michigan in the mid-1980s, I will evaluate the MHM as if it were designed specifically for the New Haven Public School District. I will incorporate the intentions of the MHM’s creators, as they are relevant to this case, while also keeping in mind that the success of this model in the state of Michigan may not tell educators much about how well the model may function in a modern day New Haven.

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<sup>52</sup> Kirby, D., Roller, L. A., & Wilson, M. M. (2007). *Tool to Assess Characteristics of Effective Sex and STD/HIV Education Programs*. Healthy Teen Network & ETR Associates.

## *I. Curriculum Development*

- 1. Involved multiple people with different backgrounds*
- 2. Assessed relevant needs and assets of target group*
- 3. Logic model approach*
- 4. Designed activities consistent with community values and available resources*
- 5. Pilot-tested*

The first set of criteria all represent characteristics that could be identified about a curriculum before implementation in a real case setting. To the first point, Kirby found that the most effective curricula tended to involve the input of people from different backgrounds in education, research, and theory. Although the general project of the Michigan Health Model involved input from all members of the Steering Committee, which included representatives from the fields of health, education, and police, this first point focuses more directly on the expertise of those designing the curriculum as it relates directly to sex education.

The second and fourth points speak generally to the scale of the curriculum design. The refinement of curriculum designers' understanding of the target group, community values, and available local resources, decreases as the scale of implementation increases. The task of creating a statewide health curriculum comes with inherent limits that do not exist in case of creating a health model for a single school or single district, which would give designers a much stronger sense of exactly which subject areas are most relevant for local needs. That said, a curriculum that is perhaps less focused, but more flexible to respond to fit the needs of a wider range of students, may strike the balance of scale and focus, while still meeting Kirby's criteria. In the case of New Haven, the District Board of Education was responsible for selecting and beginning the rollout of the MHM throughout the district. The MHM does call for the incorporation of local experts and resources into lesson plans. However, while this strategy increases the flexibility of the model, it also increases reliance on the teachers to faithfully implement the curriculum as they see fit.

Kirby also refers to a logic model, which promotes the identification of specified health goals that tie directly to instruction about the behaviors that affect those goals. Curriculum that meets this criterion identifies short-term, intermediate, and long-term effects of risky behavior, and incorporates activities that target these specific behaviors. The MHM does follow a logic model, but the identified risk behaviors are quite conservative, considering the rates of sexual activity observed in surveys of New Haven teenagers. In 2015, nearly one in four students in the state of Connecticut reported being sexually active and one in three reported having had sexual intercourse at some point in their lives.<sup>53</sup> The MHM emphasizes any type of sexual intercourse as a risk factor, which according to the logic model would mean that the curriculum deters engaging in sexual intercourse at all. While this ideology matches the abstinence-only version of the MHM, it does not fit with the more modern attitudes of students and community members in New Haven. Unprotected sex or sex with multiple partners would stand as better targeted risk factors, knowing rates of STIs and unintended teen pregnancies are the health issues most relevant to New Haven students.

## ***II. Curriculum***

- 1. focused clearly on at least one of three health goals*
- 2. focused narrowly on specific behaviors leading to health goals*
- 3. addressed multiple sexual psychosocial risk and protective factors*
- 4. created safe social environment for youth to participate*
- 5. multiple activities to change targeted risk and protective factors*
- 6. employed appropriate activities, methods, messages*
- 7. cover topics in logical sequence*

Kirby is a strong proponent of curricula that clearly states the goals of reducing unwanted pregnancies, STDs and HIV, and follows up by specifically targeting identified risk behaviors associated with those goals. The Michigan Health Model's Healthy and Responsible Relationships unit may be broader than Kirby calls for in his criteria, but makes up for that breadth with a heavy

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<sup>53</sup> Centers for Disease Control. (n.d.). YRBS CT 2015 - Tables. Retrieved February 11, 2017, from [http://www.ct.gov/dph/lib/dph/hisr/pdf/yrbs2015ct\\_summary\\_tables.pdf](http://www.ct.gov/dph/lib/dph/hisr/pdf/yrbs2015ct_summary_tables.pdf)

emphasis on discussing risky behaviors. The MHM includes many scenarios of conversations relating to avoiding situations that could lead to unprotected sex, and these scenarios include lists of specific phrases and actions students can take if they find themselves in such a situation. The MHM also includes activities that specifically require conversations with parents about the topics presented in class, which Kirby insists is an important mechanism to reinforce factual information as well as openness for future conversations.

Review refusal skills using the poster and/or slide master, "How to Refuse." Apply them in a hypothetical sexual risk situation.

*In risky situations, you may be pressured to act in a way you do not want to or in a way you think is wrong or illegal, such as engaging in a sexual activity or drinking alcohol. In these situations, it is critical that you state clearly that you have decided not to participate in the activity. This is where your refusal skills come in. These are effective refusal skills.*

Display the slide or poster and explain:

- Say "no" without laughing, looking away, or making excuses.
- Say "no" repeatedly.
- Restate "no" with increasing intensity by stating how you feel and describing the consequences.
- Suggest another activity that is realistic and appealing.
- Suggest another activity that gets you out of the situation.
- Move; leave the situation.

*Now let's look at another situation.*

Figure 1 – Michigan Model for Health, Healthy & Responsible Relationships, Lesson 13, Pg. 237

For example, Figure 1 shows an example of strategies for avoiding underage drinking, which is considered to be a risk behavior that increases the likelihood of unprotected sex. This scenario is one of many included in the model that is both relevant and realistic, and includes responses that match the register of how real students speak.

That being said, the portions of the curriculum that are not directly focused on reducing risk behaviors allude to the conservatism of the decade in which MHM was originally written. There is a recurrent emphasis on *waiting* – presumably waiting until marriage to have sex as a means to reduce risk of contracting STIs. Although this is indeed one way to reduce the risk of STIs, it is one rooted in religious commandments to abstain from sex until marriage. A more inclusive way to frame this

strategy could be to discuss the reductions in risk that come with sex in committed or monogamous relationships rather than casual relationships. Kirby's eighth curriculum criterion speaks to the inclusion of multiple strategies for appealing to students, ranging from knowledge and logic to values to perceived norms. The MHM meets this requirement, but in doing so prescribes "waiting until marriage" as a correct value, rather than placing it in the context of New Haven student values.

Kirby also calls for speaks to the importance of the classroom environment promoted by the curriculum. In general, the curriculum itself only has so much power over the social environment of the classroom, but this is surely one of the weaknesses of the MHM as it would be implemented in New Haven. Kirby recommends that curricula incorporate ice-breakers and group ground rules to help students feel comfortable, as well as positive reinforcement from facilitators for good questions and offering different viewpoints. The MHM does not specifically include any of these recommendations. More subtly, the strategy of appealing to students' morality as a means to dissuade them from drinking underage and having sex before marriage also runs the risk of discouraging students to voice questions or opinions that make them out to be immoral.

In terms of the more technical aspects of the curriculum, such as sequence of topics and the use of developmentally appropriate instructional methods, the MHM is strong. The research that informed the curriculum's original development is still considered accurate and appropriate for adolescents, and the behaviors targeted by the curriculum as a whole are still highly relevant to students in New Haven.

### ***III. Implementation***

- 1. secured at least minimal support from appropriate authorities*
- 2. selected educators with desired characteristics, trained them, provided support*
- 3. if needed, implemented activities to recruit and retain youth*
- 4. implemented virtually all activities with reasonable fidelity*

Although implementation of the MHM is still in the early phases in New Haven, many of Kirby's criteria discuss the importance of widespread support for the curriculum regardless of the state of implementation. Specifically, the long-term success of any health curriculum relies on the total buy-in of multiple partners, including the departments of health and education, school districts and principals, local organizations, school board members, and donors. As the State of Connecticut's 2021 deadline to make sex education mandatory in public schools approaches, all of these partners have every incentive to stay invested in the chosen model.

#### Other Inputs: New Haven Characteristics

In this section I will discuss the capacity of School Based Health Clinics (SBHC) to support whatever health curriculum is implemented in New Haven. The first New Haven SHC was created in 1981 as a joint venture between the New Haven Board of Education, the Fair Haven Community Health Center, and the Yale Adolescent Medicine Department.<sup>54</sup> Currently, 13 health centers operate out of elementary, middle and high schools, and the list of collaborators has grown to include Yale-New Haven Hospital, Cornell Scott Community Health Center, Clifford Beers Guidance Clinic, and the New Haven Health Department.<sup>55</sup> Facilities at elementary and middle schools include services such as routine check-ups, nutrition counseling, and crisis intervention. The NHPS brochure for SBHCs does not include any mention of contraception or recommendations for STI and HIV testing, but these are services that are also provided at most high school SHBCs in New Haven. It is not uncommon for schools to refrain from advertising these services to parents, but as long as access to these services is still advertised and clear, students may benefit.

With this infrastructure in place, the Michigan Health Model can incorporate access to these services into its lesson plans. The MHM includes many opportunities to educate students about local

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<sup>54</sup> School Health Centers | NHPS. (n.d.). Retrieved April 24, 2017, from <http://www.nhps.net/node/1706>

<sup>55</sup> Ibid.

resources for advice, access to contraception, and STI/HIV testing services, and the network of SBHCs and New Haven community resources strengthen the MHM's capacity to achieve this.

With the exception of defunding health education in the early 1990s, New Haven has historically been as a progressive city with policies that promote sexual and reproductive health for its residents. The city demonstrated that commitment in the opening of Polly T. McCabe School for pregnant girls in the 1960s, and later by providing condoms to students during the height of the HIV/AIDS epidemic. The end of funding for health education came as a break from the earlier trajectory of New Haven's commitment to supporting adolescent health, but the fact that this break was not a result of widespread public opposition or parental discomfort is evidence that Kirby's concerns over the support from community opposition are not relevant in this case.

### **Function: How the Inputs Will Interact in a New Haven Context**

#### Policy Atmosphere

As of 2017, Connecticut is one of the 24 states that do not require public schools to provide students with sex education. As early as the 1980s, the majority of states had developed rough guidelines in requiring some sort of health education, though they may have fallen under the category of "family life education" or another label unrelated to sex, but these guidelines often do not make instruction mandatory for students.<sup>56</sup> The majority of these guidelines emphasize local autonomy in designing health education programs, including requirements to seek parental involvement, public review of curriculum, and special training for teachers.<sup>57</sup> Connecticut instead requires schools to develop curriculum to guide local and regional boards of education in providing family life education to public schools (C.G.S. Section 10-16c), but students are not required by law to take these classes (C.G.S. Section 10-16e). Instruction about AIDS is required to be offered at

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<sup>56</sup> Kirby, D., & Scales, P. (1981). An Analysis of State Guidelines for Sex Education Instruction in Public Schools. *Family Relations*, 30(2), 229–237.

<sup>57</sup> *Ibid.*

some point between Kindergarten and 12<sup>th</sup> grade within a regular school day, but parents and guardians have the right to opt their child out of such programming (C.G.S. Section 10-16(b)). In addition to HIV/AIDS instruction, the state of Connecticut requires “instruction regarding the use of alcohol, nicotine, tobacco and drugs every academic year to all students in kindergarten through Grade 12,” including how these substances effect “health, character, citizenship and personality development” (C.G.S. Section 10-16(a)). With this piece of policy, Connecticut offers room to schools to incorporate information about sexual health and risk into broader health programming, but does not require it.

Although family life education does not mandate the inclusion of sex education, schools report that the majority of their required health education classes do include topics related to sex. Connecticut schools reported that 88% included information on human sexuality in health education classes, 78% included information about pregnancy prevention, and 87% included STI prevention.<sup>58</sup> This puts Connecticut slightly ahead of national estimates, which support the existence of a downward trend in the percentage of American students who received information about birth control in school in the late 1990s.

#### Controls: Current Demographics and Risk Behaviors of Connecticut and New Haven Students

Although the structural characteristics of the New Haven School District cannot be changed by any health model, the demographics and reported behavior of New Haven students are important considerations for education officials in selecting a health curriculum. New Haven Public Schools (NHPS) serve a diverse set of approximately 21,500 students, split between 32 elementary schools, 10 high schools, and five transitional schools.<sup>59</sup> In terms of race, the demographics of the City do not match that of the County as a whole: while the City is 43% white, 35% black, and 27%

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<sup>58</sup> Brener, N. D., McManus, T., Foti, K., Shanklin, S. L., Hawkins, J., Kann, L., & Speicher, N. (2009). *School Health Profiles 2008*. US Department of Health and Human Services Centers for Disease Control and Prevention Coordinating Center for Health Promotion.

<sup>59</sup> Demographics | NHPS. (n.d.). Retrieved April 26, 2017, from <http://www.nhps.net/nhpsdemographics>

Hispanic or Latino, the County of New Haven is 75% white, 13% black, and 17% Hispanic or Latino.<sup>60</sup> NHPS reports that 42% of its students are African-American, 41% are Hispanic, 14% are white, and 2% are Asian American.<sup>61</sup>

Using projections from the 2010 U.S. Census, the population of New Haven County was approximately 857,000 in 2015, with the City of New Haven itself being home to roughly 130,000. The City's residents tend to have lower levels of income and lower levels of education.<sup>62</sup> About 74% of high school students in Greater New Haven enroll in college within one year of graduating, 65% of NHPS students do so, and 79% persist to a second year as compared to 89% in Greater New Haven.<sup>63</sup> While 38% of students in both New Haven County and the state of Connecticut qualify for free or reduced lunch, 59% of students in the NHPS qualify for free or reduced lunch.<sup>64</sup> This is higher than the rest of Connecticut, but comparable to United States averages. Approximately 10% of residents over age 25 in Greater New Haven have less than a high school diploma and 39% have at least a bachelor's degree, whereas in the City of New Haven 18% of people over age 25 have less than a high school diploma and 35% have a bachelor's degree or higher. Knowing that students in New Haven are more likely to have parents with lower incomes and lower levels of education, sex education is necessary to counteract students' predicted lower access to health services.

Although many health indicators show improvements over the past decade, as measured by life expectancy, low birth weights, and health insurance coverage, inequality has increased in New Haven in recent years.<sup>65</sup> The distribution of high, middle, and low-income people across

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<sup>60</sup> Population estimates, July 1, 2016, (V2016). (n.d.). Retrieved April 25, 2017, from <http://www.census.gov/quickfacts/table/PST045216/09009,0952000>

<sup>61</sup> Demographics | NHPS. (n.d.). Retrieved April 26, 2017, from <http://www.nhps.net/nhpsdemographics>

<sup>62</sup> Abraham, M., & Buchanan, M. (n.d.). Greater New Haven Community Index 2016. Retrieved February 12, 2017, from <http://www.ctdatahaven.org/sites/ctdatahaven/files/GNH%20CWI%20plus%20HGNHP.pdf>

<sup>63</sup> Demographics | NHPS. (n.d.). Retrieved April 26, 2017, from <http://www.nhps.net/nhpsdemographics>

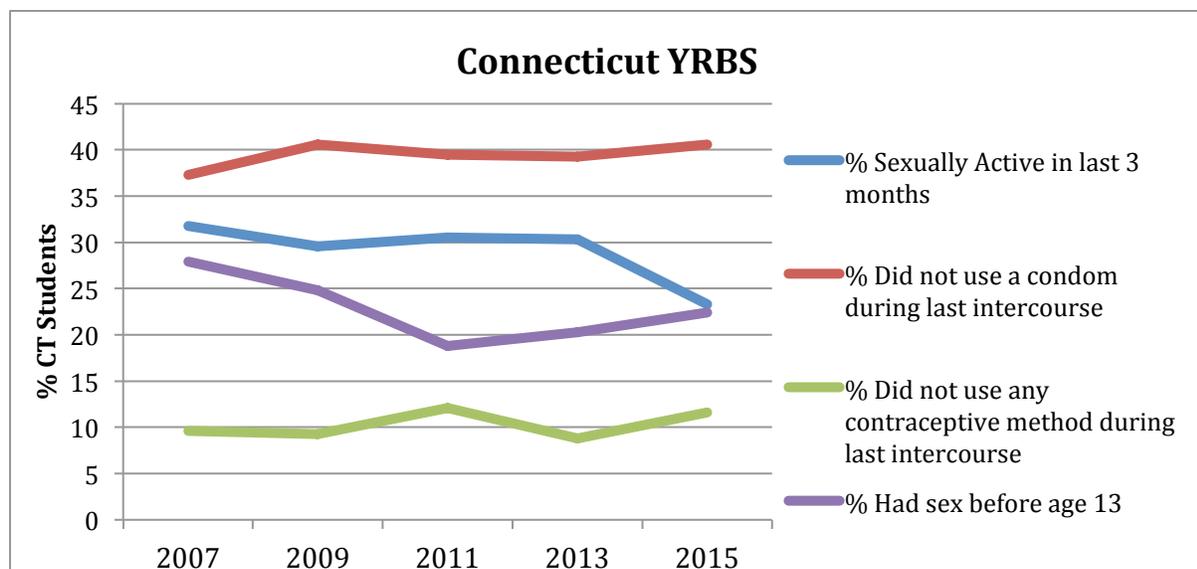
<sup>64</sup> Abraham, M., & Buchanan, M. (n.d.). Greater New Haven Community Index 2016. Retrieved February 12, 2017, from <http://www.ctdatahaven.org/sites/ctdatahaven/files/GNH%20CWI%20plus%20HGNHP.pdf>

<sup>65</sup> Abraham, M., & Buchanan, M. (n.d.). Greater New Haven Community Index 2016. Retrieved February 12, 2017, from <http://www.ctdatahaven.org/sites/ctdatahaven/files/GNH%20CWI%20plus%20HGNHP.pdf>

neighborhoods has worsened since 1980, and the population of low-income children ages 0-17 has increased since 2000 to a rate of 61% in 2014.<sup>66</sup>

Although some of these statistics paint a challenging picture of New Haven, they are not wholly uncharacteristic of other cities and district across the country. The Center for Disease Control’s Youth Risk Behavior Survey (YRBS) can offer rough insight into the specific behaviors that merit attention from health educators. The YRBS is only administered at the state level, and can therefore not offer any insight into how New Haven stands in the context of the state, but it can shed light on the general trends of the area. The survey has been administered every two years for nearly two decades, and a key takeaway from the last five surveys is the lack of change in the rates of reported sexual risk behaviors – or lack thereof. The percentage of students who report sexual activity, using alcohol or drugs before sex, and having unprotected sex has remained largely unchanged over the last 10 years (see graph).

The rates of STIs in New Haven is difficult to accurately measure, but the Connecticut Department of Public Health reports mixed trends in recent decades. The rate of gonorrhea has decreased steadily from 171 per 100,000 in 1992 to 62 per 100,000 in 2014, while the rate of



<sup>66</sup> Abraham, M., & Buchanan, M. (n.d.). Greater New Haven Community Index 2016. Retrieved February 12, 2017, from <http://www.ctdatahaven.org/sites/ctdatahaven/files/GNH%20CWI%20plus%20HGNHP.pdf>

( 23% )

Sexually active in  
past 3 months

( 12% )

Did not use any  
contraceptive method

( 22% )

Drank alcohol or used  
drugs before last  
intercourse

( 8% )

Experienced physical  
dating violence in past  
year

Source: YRBS 2015, CT

chlamydia has risen from 263 per 100,000 in 1992 to 365 per 100,000 in 2014.<sup>67</sup> Although HIV/AIDS was once highly prevalent in New Haven, new infections have decreased in the past decade, and the vast majority of people living with HIV/AIDS are over the age of 40.<sup>68</sup>

Although rates of STIs are difficult to estimate among student populations, teen pregnancy rates are more accessible. Teenage birthrates have been in decline in the United States in the past decade, with Connecticut offering some of the largest decreases in recent years.<sup>69</sup> In spite of this promising trend, the teenage birthrate in New Haven remains much higher than average at 29.8 per 1,000, as compared to 14.9 per 1,000 in the state of Connecticut.<sup>70</sup> Teenage birthrates in Connecticut tend to be highest among Hispanic women (41.9) and black women (24.9), and the large populations of black and Hispanic students in New Haven Public Schools make this a very relevant health target for any health curriculum. In a related trend, a high percentage of children in New Haven come from single-parent households, which is a known correlate to increased likelihood of those children in turn having children at a young age and raising them alone.<sup>71</sup> About 35% of children in New Haven County lived in single-parent household from the period of 2008 to 2012, and knowing the demographic differences between the country and the city, the proportion of children in New Haven Public Schools that fall into this category is likely higher.<sup>72</sup>

<sup>67</sup> DPH: Vital Statistics (Registration Reports). (n.d.). Retrieved April 25, 2017, from <http://www.ct.gov/dph/cwp/view.asp?a=3132&q=394598>

<sup>68</sup> Connecticut Department of Public Health. (2016). *Epidemiological Profile of HIV Connecticut, 2016*.

<sup>69</sup> Chang, A. (2015, August 11). How teenage pregnancy rates are plummeting in Connecticut.

<sup>70</sup> About Teen Pregnancy | Teen Pregnancy | Reproductive Health | CDC. (n.d.).

<sup>71</sup> Blake, S. M., Simkin, L., Ledsy, R., Perkins, C., & Calabrese, J. M. (2005). Effects of a Parent-Child Communications Intervention on Young Adolescents' Risk for Early Onset of Sexual Intercourse. *Family Planning Perspectives*, 33(3), 52–61.

<sup>72</sup> Social Factors: Children in single-parent households. (n.d.).

Demographic data may provide evidence that the demographic makeup of New Haven, and Connecticut more broadly, differ greatly from the population for which that the MHM was designed, but the MHM is flexible enough to accommodate differences such as these. The New Haven Public Schools should be advised to focus extra attention on the prevention of unintended pregnancy and STIs, knowing these are mostly likely to affect youth in New Haven.

### Gaps in the Michigan Health Model

The key weakness within the domain of implementation is that the MHM does not specify which teachers within a school should take the role of teaching sex education. Although research in this area is limited, surveys demonstrate significant differences in instruction content between types of teachers, which suggest that *who* teaches sex education in a school impacts the information received by students. In 1999, the Guttmacher Institute survey of teachers in America found that physical education teachers were more 43 percent more likely to emphasize the ineffectiveness of contraception or not teach about instruction at all, as compared to a designated health teacher.<sup>73</sup> Alternatively, biology teachers are significantly less likely than health teachers to teach about specific STIs, refusal skills, or correct use of contraception.

Currently in New Haven, teachers will require a health certification or dual health and physical education certification before teaching the MHM in high schools. In 2014, two MHM representatives travelled to New Haven to lead two eight-hour training days to familiarize teachers about the model itself, and PE teachers completed a few additional classes to receive a dual certification. Although this training is intended to cover all units in the MHM and only a portion will include the Healthy and Responsible Relationships section, all teachers must be familiar with the content before teaching. In middle schools, three health teachers were hired to rotate between

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<sup>73</sup> Landry, D. J., Darroch, J. E., Singh, S., & Higgins, J. (2003). Factors Associated with the Content of Sex Education In U.S. Public Secondary Schools. *Perspectives on Sexual and Reproductive Health*, 35(6), 261–262.

schools and provide all MHM instruction. High schools are next on schedule to complete the rollout, and the district hopes to hire additional health teachers or incentivize more physical education teachers to become dual certified to teach. In the meantime, many New Haven Public Schools will continue to rely on Community Health Educators to teach workshops which align with stated objectives of the MHM, but do not follow the curriculum exactly.

Another key gap in the MHM is its lack of consideration for LGBTQ and gender non-binary students. The curriculum does not include any sections on spectrums of sexual orientation or gender identity, and educators in Michigan instead must rely on resources like the Michigan Organization on Adolescent Sexual Health's *LGBTQ Youth Inclusivity Toolkit*.<sup>74</sup> The recommendations of this toolkit include how to reframe baseline assumptions for the sexual orientations and experiences of children in a given classroom, as well how to shift language to be more inclusive of different types of familial and romantic relationships (e.g. promoting the use of “long-term committed relationship” rather than marriage; “significant other” rather than “boyfriend” or “girlfriend”).

In Connecticut, and in the United States overall, students who identify as LGBTQ are more likely to report having experience dating violence than students who identify as heterosexual (18% vs. 10%, respectively) and are more likely to have not used contraception during their last sexual intercourse (25% vs. 10%, respectively).<sup>75</sup> With this in mind, the high rates of violence and sexual risk behaviors amongst LGBTQ students should be treated as one of the main goals of New Haven health education. Although there is room for this in the Michigan Health Model, teachers must take on the responsibility to educate students about these issues and create an inclusive classroom on their own accord, unless New Haven adopts official policy that mandates teachers to take these extra considerations.

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<sup>74</sup> Michigan Organization on Adolescent Sexual Health. (2014, February). *LGBTQ Youth Inclusivity Toolkit*.

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## **Conclusions & Recommendations**

If existing research supports any single conclusion, it is that there is no perfect model of sex education – there are far too many limitations in current research and the capacity of school districts to evaluate and monitor student needs. However, in the case of New Haven, the MHM offers a promising foundation for institutionalized sex education. The curriculum itself is primarily strong in terms of medical accuracy and the incorporation of parent engagement and realistic student behaviors. The biggest weaknesses of the curriculum are its reliance on conservative moral arguments and lack of information about LGBTQ issues. However, these issues do not prohibit the establishment of a strong foundation in understanding, and they leave teachers with the capacity to fill in gaps in the official curriculum.

The outlook for the MHM is even brighter once factoring in the strong presence of community resources that can provide students with additional access to information and services. School-based and community-based clinics offer accessible services, as well as assistance for teachers who may feel ill equipped to explain biological, medical, or social issues to students. Additionally, Community Health Educators will continue to facilitate the rollout of the MHM for as long as that support is deemed necessary. Rather than filling the role of curriculum developers and workshop facilitators, Community Health Educators can finally step back to assist teachers who are more familiar with student needs.

New Haven must act as a role model for the rest of Connecticut the 2021 deadline for mandatory sex education in all public schools approaches. The Michigan Model for Health has the potential to bring New Haven back to its position as a leader in progressive reproductive and sexual health policy. The health and empowerment of New Haven students depends on many factors outside of the control of public high school teachers, but the collaboration between New Haven teachers, administrators, and community resources has the potential to equip students to make informed decisions that are as informed and supported as possible.

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