ABSTRACT

Determining the Cost-Effectiveness of Providing Free Prenatal Care to Hispanic Illegal Immigrants

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Providing illegal immigrants with free resources using taxpayer funds is a highly controversial and hotly debated topic. While some argue that it rewards illegal immigrants at the expense of law-abiding residents, others counter that it is inhumane for the government not to provide basic resources to individuals on the basis of legal status. In my thesis I attempt to determine which solution is most cost-effective, free of political bias. Through analyzing economic data from states and countries that provide varying levels of free prenatal care to Hispanic illegal immigrants, my objective is to find which amount of free care, if any, will leave government budgets least negatively impacted.

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DETERMINING THE COST-EFFECTIVENESS OF PROVIDING FREE PRENATAL CARE FOR HISPANIC ILLEGAL IMMIGRANTS

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By

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CHAPTER ONE

An Introduction to Prenatal Care and Hispanic Illegal Immigrants

My thesis seeks to answer the following question: Under which governmental policy does providing free prenatal care to pregnant Hispanic illegal immigrants utilize the least federal funding, and what type of prenatal care is most cost-effective? My first chapter will introduce the population of Hispanic illegal immigrants and particular health concerns they face, especially for pregnant women. I will briefly discuss current health programs for legal residents of the United States before entering in depth about existing state programs addressing healthcare for pregnant, illegally residing Hispanic women in the second chapter. The third chapter details approaches of different countries to providing prenatal care to illegal immigrants. In the last chapter, I discuss whether providing these services at no cost saves the federal government on overall costs depending on governmental policy: for instance, whether the government provides no healthcare obligation to illegal immigrants or their children born in the US, provides an obligation only to their children, or maintains the status quo. Additionally, I will issue a set of recommendations on what type of preventive care is most cost-effective based on different government policies. Lastly, I will conclude by offering a set of guidelines for practical implementation of the measures I propose in my recommendations. Before introducing why this is a pertinent issue, I find it necessary to qualify the terms preventive care, Hispanic, and illegal immigrants.

Preventive care in this thesis is limited to prenatal care, which consists of regular visits to an obstetrician throughout pregnancy including relevant medical procedures like

ultrasounds, and supplying any immunizations, vitamins, or medications recommended by the doctor.

Though Puerto Ricans and Cubans are considered part of the Latino community, in this thesis I only address individuals from Mexico, Central America, and South America. I do not include Cuba or Puerto Rico for two reasons: First, Cubans who immigrate to the United States, even illegally, are granted refugee status and are thus recognized by the United Status and become legal residents. Additionally, because Puerto Rico belongs to the United States, Puerto Ricans are legally allowed to reside in the U.S. Second, the genetics of the Cuban and Puerto Rican populations vary significantly from the rest of the Latin American population, resulting in different health problems and concerns—different populations have different frequencies of particular genes, including mutations that are responsible for health issues. I use the term Latinos and Latinas synonymously with Hispanics. However, it is important to note that many of the studies and statistics I cite do include Cubans and Puerto Ricans as part of the Latino and Hispanic population.

I use the term illegal immigrant because I find it to be the most accurate and least confusing. While some organizations like the National Association of Hispanic Journalists have recently pushed for newspapers to abandon the term due to its negative connotation, publications like the New York Times[1] have defended their use of the term because it is the most concise and accurate description. The literature I have encountered in my research has used numerous terms, including "undocumented" and "unauthorized."

[1] Margaret Sullivan, "Readers Won't Benefit if Times Bans the Term 'Illegal Immigrant'," *The New York Times*, October 2, 2012, http://publiceditor.blogs.nytimes.com/2012/10/02/readers-wont-benefit-if-times-bans-the-term-illegal-immigrant/?smid=tw-share (accessed October 20, 2012).

These terms are not always applicable. For example, some immigrants without legal status in the United States are documented: they hold U.S. driver's licenses, public school IDs, and passports from their home countries. However, the literature I have read uses all three terms to refer to the same group. Therefore, I use all three terms interchangeably to refer to immigrants who do not have a legal right to be in the United States.

Who are Hispanic Illegal Immigrants?

Hispanic illegal immigrants in the United States originate from all over Latin America. 6.8 million illegal immigrants are Mexican, representing 59% of the total illegal population of 11.1 million. El Salvador, Guatemala, and Honduras follow Mexico in leading source countries, accounting for 660,000 (6%), 520,000 (5%), and 380,000 (3%) immigrants, respectively. South American illegal immigrants constitute only 0.8% of all illegal immigrants in the United States. In total, Hispanic illegal immigrants comprise 75% of the illegal immigrant population.[2]

Mexicans and Central Americans account for an increasingly greater proportion of all illegal immigrants. In 2000, illegal immigrants from Mexico accounted for 55% of the total, with El Salvador, Guatemala, and Honduras also less at 5%, 3%, and 2% respectively. Meanwhile, illegal immigrants from Asia (the next largest source) represent a decreasing proportion of illegal immigrants.[3] Ultimately, we can conclude that the vast majority of illegal immigrants are Hispanic, and of this population, almost all originate

[2] Michael Hoefer, Nancy Rytina, and Bryan Baker, "Estimates of the Unauthorized Immigrant Population Residing in the United States: January 2011" (U.S. Department of Homeland Security, March 2012), 5, http://www.dhs.gov/xlibrary/assets/statistics/publications/ois_ill_pe_2011.pdf (accessed October 19, 2012).

[3] Ibid

from Mexico and Central America. Additionally, not only is the number of Hispanic illegal immigrants increasing, but also these immigrants are growing to represent a larger portion of all illegal immigrants in the United States.

In 2011, 59% percent of illegal immigrants were between 25 and 44 years of age. Fifty-three percent of illegal immigrants were male and represented a slightly larger share (57%) of 18 to 34 year-olds compared to women, who represented a slightly larger share (57%) of the immigrants who were 45 and older. Still, 54% of all female illegal immigrants were younger than 35.[4] We can determine that most female illegal immigrants in the United States are young (under the age of 35) and are either able to conceive children or will reach childbearing age in the future.

Why do they Immigrate to the United States?

A number of push and pull factors influence Hispanic immigrants to illegally reside in the United States. Push factors can be categorized into economic and noneconomic factors. Noneconomic factors include poor political leadership in the form of corrupt or authoritarian governments, war, and natural disasters, and have served to particularly affect Central American migration. Economic factors pushing migration result from "law wages and insufficient formal-sector employment, poor investment opportunities, and inadequate access to credit, finance, and insurance systems." Ironically, economic development can also encourage emigration by upsetting traditional markets, thus prompting individuals to leave.

[4] Michael Hoefer, Nancy Rytina, and Bryan Baker, "Estimates of the Unauthorized Immigrant Population Residing in the United States: January 2011," 5.

In contrast, economic opportunity acts as a pull factor in the United States, along with social networks. Greater job availability and better wages incentivize individuals to immigrate. While many of these "3-D jobs"—dirty, difficult, and dangerous—like construction and farm labor work offer low pay, the wages are substantially greater than alternatives in immigrants' countries of origin. Similarly, noneconomic factors like increased safety and less controlling government also pull immigrants to America.[5]

Where do They Settle and Why?

Hispanic illegal immigrants are heavily influenced by social and cultural factors when settling. California houses the most illegal immigrants in the US at 2.83 million, an increase from 2.51 million in 2000. While this accounts for twenty-five percent of all illegal immigrants, California is home to a lower proportion of the population than twelve years ago, when the amount peaked at 30%. Texas succeeds California and contains 16% of the illegal immigrant population, up from 13% twelve years prior. Florida is third with 6%, down 3% from 2000.[6] These numbers show that while the amount of illegal immigrants is increasing in most states, trends for settling are changing and must be taken into account when drafting policy to address the issue of illegal immigration.

Immigrants in the United States—both legal and illegal—are healthier than native citizens of similar ethnic background. Known as the healthy migrant effect (or in the case

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[5] Marc R. Rosenblum and Kate Brick, "US Immigrant Policy and Mexican/Central American Migration Flows: Then and Now" (Migration Policy Institute, August 2011), 6, http://www.migrationpolicy.org/pubs/rmsg-regionalflows.pdf (accessed November 15, 2012).

[6] Michael Hoefer, Nancy Rytina, and Bryan Baker, "Estimates of the Unauthorized Immigrant Population Residing in the United States: January 2011," 5.

of Hispanics, the "Hispanic paradox")[7], immigrants have lower mortality risks and higher life expectancy because their native cultures promote health-protective behaviors like better diet. Longer periods of time spent in the United States have a negative effect on health and are correlated with "increases in low birth weight infants, adolescent risk behaviors, cancer, anxiety," and depression.[8] This is attributed to abandoning traditional diets and lifestyles, which typically encourage better nutrition and stronger social networks with friends and family. Studies also suggest that health status for Latinas may decrease with increased acculturation to American culture and exposure to high-risk behaviors like tobacco use, poor nutrition, and alcohol and substance abuse, as well as higher stress levels accompanied by living in the United States.[9]

Latinas in the U.S. (both legal and illegal residents) are at higher risk for particular pregnancy issues and concerns relative to other populations. They have a higher birthrate, fertility rate, and rate of teen pregnancy. The birthrate for Latinas is more than double that for the White population. Compared to the Non-Latino population, Latinas are more likely to have children, and Latina mothers are more likely to have more children, more likely to be under 20, more likely to be unmarried, less likely to be educated, and less likely to be born in the United States.

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[7] Marilyn Aguirre-Molina, Carlos W. Molina, and Ruth E. Zambrana, *Health issues in the Latino community* (Jossey Bass Publishers, 2001), 120.

[8] Katherine Fennelly, PhD, "The 'Healthy Migrant' Effect," *Healthy Generations* 5, no. 3 (February 2005): 1.

[9] Aguirre-Molina, Molina, and Zambrana, *Health issues in the Latino community*, 120.

Table 1. Comparing Latino and Non-Latino mothers

	Latino	Non-Latino
Birthrate	24.3	13.2
Fertility rate	101.1	59.8
Fourth and higher-order births	13.6	9.8
Births to mothers under 20	16.9	11.6
Unmarried mothers	41.6	30.9
Mothers completed 12 or more years of school	50.7	84.4
Mothers born in the US	39.9	89.9

Source: Marilyn Aguirre-Molina, Carlos W. Molina, and Ruth E. Zambrana, *Health issues in the Latino community* (Jossey Bass Publishers, 2001), 116.

Close to 17% percent of the Latino birthrate is attributed to mothers under the age of twenty, close to double the White population (9.4%). Teen pregnancy is directly correlated to higher sexual activity and unprotected sex: Half of Latinas between 15 and 17 are sexually active, higher than both the White and African-American populations. Half also do not use contraceptives,[10] due to factors lack of formal knowledge about sexual health like sexually transmitted infections, how to say no to sex, and contraception. Latinas also have the lowest abortion rate when compared to Whites and African Americans at 27.5%.[11] Additionally, they are least likely to take advantage of family planning services.

[10] Ibid., 122.

[11] Ibid.,123

The risk of many birth complications including low birth weight, neonatal death, high infant mortality, and Sudden Infant Death Syndrome increases in teen pregnancies, which is linked to poor health before and during pregnancy. Teenage Hispanic mothers who either marry or live with the father of their child are more likely to require public assistance than those who are not mothers.[12]

Access to Healthcare

Illegal immigrants have less access to healthcare than legal immigrants and native-born Americans. This is primarily due to two reasons: immigrants are much more likely to be uninsured, and they face non-financial health care impairments. The Pew Hispanic center estimated that 6.8 million of the 11.7 million illegal immigrants in the United States in 2007 were uninsured, or approximately 58%.[13] This number is far above the uninsured rates for legal immigrants (25%) and citizens (14%).[14] One major factor influencing this outcome is lack of private, employer-sponsored health insurance. Most illegal immigrants work in jobs where they do not receive health benefits or employer-sponsored insurance. With the advent of the Personal Responsibility Work Opportunity Reconciliation Act (PRWORA) in 1996, legal immigrants are no longer eligible for federally funded services like Medicaid to help cover healthcare costs in their first five

[12] Ibid.,124

[13] "PolitiFact | Number of those without health insurance about 46 million", n.d., http://www.politifact.com/truth-o-meter/statements/2009/aug/18/barack-obama/number-those-without-health-insurance-about-46-mil/ (accessed April 25, 2013).

[14] Richard Wolf, "Rising health care costs put focus on illegal immigrants," *USA Today*, January 22, 2008, sec. Politics, http://usatoday30.usatoday.com/news/washington/2008-01-21-immigrant-healthcare_N.htm (accessed October 10, 2012).

years of residence except in cases of emergency. However, some states pay to fund healthcare for both legal and illegal immigrants, which I will discuss in a later chapter.

Non-financial obstacles to healthcare access include language and cultural barriers, lack of education, and legal status.[15] Just as communicating with a doctor in a different language hinders access to care, so do cultural barriers prevent illegal immigrants from visiting the physician, fearing lack of empathy or understanding.

Quality of Healthcare

In addition to less access to healthcare, illegal immigrants receive a lower quality of healthcare due to language difficulties, low socioeconomic status, and lack of knowledge about the U.S. healthcare system. Language skills in particular have a strong impact. Hispanic women with a high proficiency in English were 2.2 times as likely to report they were recommended for a PAP test compared to women with a low proficiency. However, even with Latinos felt comfortable speaking English with a physician were less likely to receive recommended general healthcare like flu vaccines if they did not speak English at home.[16] This indicates that even illegal immigrants who come to the United States at a young age and learn to speak English do not receive the same level of care as other English-speakers if Spanish is their primary language.

Moreover, immigrants with low English proficiency were two to three times more likely to have a bad reaction to drugs due to a misunderstanding compared to those with

[15] Kathryn Pitkin Derose et al., "Review: Immigrants and Health Care Access, Quality, and Cost," *Medical Care Research and Review* 66, no. 4 (August 1, 2009): 3.

[16] Ibid

higher proficiency. These odds tripled when patients were not matched with a language-concordant physician.[17]

Healthcare has become an increasingly important concern in the United States. With low insurance rates and high medical costs, affordable access to quality medical care is a problem the government has attempted to address. The fundamental problem behind healthcare in this country is that the percentage of Gross Domestic Product (GDP) spent on healthcare expenditures (HCE) is very high and growth rates for HCE are projected to increase over the next several decades. Compounding that problem is the lack of financial sustainability for government health programs like Medicaid and Medicare. These programs are funded by taxes but costs consistently exceed incoming revenue.

Because only particular subpopulations (the poor and the elderly) are eligible for Medicaid and Medicare, respectively, most individuals with healthcare plans have health insurance either through a private plan or through an employer. Health insurance typically works as a third-party payment system whereby individuals pay upfront costs to avoid risk. In risk pooling, insurers place individuals in groups with similar traits and estimate average monthly healthcare costs for each person in that group, which becomes the premium. For example, a twenty-six year old female would likely be pooled with all other females from ages 18-30. After compiling research, if the insurer determines average monthly costs for women in that age group to be $100, premiums will be $100 plus overhead costs and profit. However, along with most other third-party payment systems, health insurance faces systematic problems like moral hazard. Because

[17] Ibid

individuals use money from a third party to pay their bills, they are incentivized to overuse resources.

Currently, providing health programs or benefits for illegal immigrants is treated on a state-by-state basis. However, the Emergency Medical Treatment and Active Labor Act (EMTALA) passed in 1986 requires hospitals to stabilize any individual with an emergency medical condition who presents himself at an Emergency Room (ER), regardless of legal status and ability to pay. Though EMTALA technically only applies to hospitals that receive government funds for treating Medicaid and Medicare patients, virtually all hospitals in the United States receive these funds because Medicaid and Medicare represent almost half of all medical expenditures in the country.

Because many illegal immigrants cannot afford health insurance or primary care, they wait until they are severely ill or hurt to visit ERs for care. In the case of pregnancy, this translates to waiting until delivery to visit a doctor so that the hospital covers the charges. While EMTALA states that patients are still legally responsible to pay for the treatment they receive, because illegal immigrants are not legal residents makes it nearly impossible for hospitals to recover costs. Even if hospitals did attempt to sue, most do not have the money to pay. Therefore, hospitals absorb the costs of treating illegal immigrants. While federal, state, and local governments do sometimes provide funds to reimburse hospitals, often they do not cover the entire amount. This causes hospitals either to shut down entirely or close ERs because they place a serious financial drain on the hospital. In turn, supply of treatment centers decreases while demand remains constant, creating a bottleneck effect where not all patients will get treatment as already struggling emergency rooms become more overworked, have longer waiting times, and

receive more patients who cannot afford to pay, causing the open treatment centers to also shut down. This cycle decreases access to healthcare and quality of healthcare for illegal immigrants and legal residents. It is important to recognize how legal residents' healthcare is tied to healthcare for illegal immigrants.

Most recently, the Affordable Care Act (ACA) passed by Congress sought to revamp the existing healthcare system. However, while early drafts did address healthcare for illegal immigrants, all support and funding was removed from the final draft to garner more support. Therefore, the ACA leaves the status quo for illegal immigrant healthcare at EMTALA.

Providing prenatal care—both for legal and illegal residents—is cost effective. According to the National Conference of State Legislatures, every dollar spent on prenatal care yields between $1.70 and $3.38 in savings on birth complications like prematurity and low birth weight. These numbers increase exponentially when applied to the population of undocumented women: Experts estimate that one dollar spent on preventive care for illegal women (including perinatal care and treating communicable diseases) saves more than $13, and each dollar spent preventing one case of fetal HIV saves approximately $400.[18] Studies overwhelmingly conclude cost-effectiveness of preventive healthcare, especially for unauthorized immigrants.

In my next chapter, I seek to compare healthcare available to pregnant, Hispanic illegal immigrants in different states and which type of program is most cost-effective.

[18] "Funding Prenatal Care for Unauthorized Immigrants," *National Conference of State Legislatures*, n.d., http://www.ncsl.org/issues-research/immig/funding-prenatal-care-for-unauthorized-immigrants.aspx (accessed September 10, 2012).

CHAPTER TWO

Prenatal Care for Illegal Immigrants in the United States

While most states provide some sort of free prenatal care to legal residents, many do not offer the same for illegal immigrants. The states that do offer some form of pregnancy care include California, the District of Columbia, Georgia, Indiana, Massachusetts, Michigan, Minnesota, New York, North Carolina, Rhode Island, and Washington. Each state has its own program, resulting in multiple standards of care for pregnant undocumented women. State aid spans from minimal to basic to highly comprehensive. While some states like California have provided services starting as early as the early nineties, most states did not offer prenatal care until the last few years.

New York, Michigan, and Georgia provide minimal care to pregnant undocumented women. In New York, unqualified immigrants (including undocumented) are eligible for some Medicaid benefits that provide service only in the event of emergency labor and delivery.[1] Georgia also places constraints: while both legal and illegal residents are treated equally, the state only provides supplemental foods, nutrition education, and referrals to health care for pregnant women who have medical documentation that they are at nutritional risk.[2] Michigan's only program eligible for

[1] Morgan Lewis LLP, "Pre-Natal Care for Qualified and Non-Qualified Immigrants" (American University Washington College of Law, September 17, 2007), 47, http://niwaplibrary.wcl.american.edu/public-benefits/health-care/17_Charts_Pre-Natal_Care_Chart-MANUAL-ES.doc (accessed April 20, 2013).

[2] Ibid., 16-17

undocumented women is Emergency Services Only Medicaid, similar to New York's program. ESO Medicaid does not include prenatal care, but only labor and delivery.[3]

North Carolina, Washington, and Rhode Island provide more support by offering programs that provide basic prenatal care at no cost to these women. Pregnant women are eligible for Medicaid for Pregnant Women (MPW) as well as Presumptive Medicaid for Pregnant Women in North Carolina. MPW only pays for prescription medications and ambulatory prenatal services, but Presumptive Medicaid covers basic prenatal care, but does not include overnight hospital visits or significant medical procedures. However, all pregnant women are eligible for discounts on prenatal care from community health clinics, local hospitals, and county health departments if they can show their income is below the federal poverty level.[4] Rhode Island's Rite Care/Rite Share program pays for antepartum and postpartum care, delivery, and prescriptions and lab tests. Other services like counseling and home visitation are inclusive under particular conditions.[5] In Washington, all individuals can receive prenatal care regardless of immigration status. Women are granted postpartum care and family planning services in addition.[6]

Most states providing free prenatal care to undocumented immigrants have comprehensive programs, including California, the District of Columbia, Indiana, Massachusetts, Minnesota, and Nebraska. After heated debate in the House of Representatives, Nebraska chose to continue extending free prenatal care to

[3] Ibid., 33-34

[4] Ibid., 48-49

[5] Ibid., 58-59

[6] Ibid., 67

undocumented women through Kids Connection, which includes the state's Children's Health Insurance Program (CHIP) and Nebraska Medicaid. Undocumented women who do not qualify for Medicaid are called Medical Assistance for Children (MAC) Moms because the healthcare is provided as a right of the fetus. Services cover physician care, hospital charges, lab tests, medications, and more.[7] Minnesota offers prenatal care and "associated health services from conception to birth," including physicals, ultrasounds, lab tests, and monthly, biweekly, and weekly visits depending on time during gestation as part of SCHIP.[8] Massachusetts' Healthy Start Program ensures prenatal care is available to immigrants not qualifying for Medicaid and covers everything from primary and specialty visits to postpartum obstetric and gynecological care and everything in between.[9] The Hoosier Healthcare option for women in Indiana offers a similar pregnancy package including education, social services, and health screening in addition to traditional prenatal care.[10] Washington, D.C.'s DC HealthCare Alliance seeks to provide care to needy residents (up to 200% of the federal poverty level) who cannot participate in Medicaid and includes a range of preventative, primary, acute, and chronic care services like immunizations, in- and out-patient care, and prenatal care.[11] In California's state healthcare program Medi-Cal, all individuals meeting income and residency requirements receive free prenatal care and other services such as drug

[7] Ibid., 39

[8] Ibid., 34-35

[9] Ibid., 31-32

[10] Ibid., 22-23

[11] Ibid., 13-15

coverage and family planning services. Additionally, pregnant women in the process of applying for Medi-Cal status can receive immediate, temporary prenatal care while their application is being considered.[12]

Though numerous programs exist providing various levels of free prenatal care, data on the cost-effectiveness or health outcomes of individual programs is scarce. This can be attributed to multiple factors. For instance, illegal mothers are treated alongside legal residents in the same programs, making it difficult to distinguish between the two when compiling statistics. Additionally, prenatal care is often lumped with full maternity care or childcare programs like in Massachusetts' Healthy Start Program, leading to cost-effectiveness of grouped data rather than outcomes for specifically prenatal care. Lastly, many state initiatives to provide prenatal care to illegal immigrants have surfaced only within the last few years, which has not provided enough time to collect accurate data. However, some studies on cost effectiveness and health outcomes for illegal immigrant pregnancies with and without comprehensive prenatal care do exist.

A study carried out in Colorado (a state that does not provide free prenatal care) found that undocumented Latina women were less likely to access adequate prenatal care compared to the general population. While the healthy migrant effect had a protective outcome on having low-birth weight babies and premature delivery, undocumented women were significantly more likely to experience a range of birth and labor complications as shown in Table 2.

[12] Ibid., 8-10

Table 2. Delivery complications for illegal immigrants and all other women in a Colorado Study

Delivery Complications	Illegal Immigrants (%)	All Other Women (%)
Meconium staining	11.2	4.3
Excessive bleeding	2.3	0.8
Premature rupture	1.9	2.3
Precipitous labor	2.4	1.8
Malpresentation	3.5	3.0
Cord prolapse	0.7	0.3
Fetal distress	8.7	3.6
No complications	60.1	73.5

In almost all delivery complications analyzed in the study, undocumented women experienced worse outcomes compared to all other women. Additionally, unauthorized pregnant women had statistically significant rates of having more abnormal conditions for newborns. These conditions and labor complications can directly be traced back to lack of prenatal care. The study concluded that better access to prenatal care would address risk factors for pregnant illegal immigrants and contribute to better health outcomes.[13]

Meanwhile, a cost benefit analysis of California's free prenatal care system yielded high cost effectiveness and better birth outcomes. While undocumented women are already less likely to have low birth weight (LBW) children compared to the general

[13] Mary M. Reed et al., "Birth outcomes in Colorado's undocumented immigrant population," *BMC Public Health* 5, no. 1 (October 4, 2005): 4–6.

public, within the population, women without access to prenatal care were more than three times more likely to have LBW babies and seven times more likely to give birth prematurely. The cost of maternity care for women who did and did not access prenatal care did not have a statistically significant difference; however, postnatal costs did. On average, initial hospitalization costs for newborns without prenatal care was $2341 dollars more than for babies with prenatal care. In contrast, the average cost of prenatal care per person was $702. Among all newborns admitted to the neonatal intensive care unit, medical bills for the babies without prenatal care were twice as expensive: $15,100 versus $7300. Eliminating funding for prenatal care in California would save $58 million initially but cost the state $194 million in postnatal care. Moreover, among neonates with birth complications, those with prenatal care had fewer long-term costs. Each dollar spent on prenatal care was found to save $4.63 in postnatal and long-term care expenses.[14]

Similar health outcomes and expenses were replicated in North Carolina. A study analyzing Emergency Medicaid Spending for undocumented immigrants determined that 82% of all spending from 2004 was attributed to childbirth and pregnancy complications. Additionally, 91% of all hospital admissions were linked to the same group. At the time this study was published (2007), North Carolina had not yet begun to provide prenatal care to illegal immigrants. The authors recommend that preventive care for pregnant

[14] Michael C. Lu et al., "Elimination of public funding of prenatal care for undocumented immigrants in California: A cost/benefit analysis," *American Journal of Obstetrics and Gynecology* 182, no. 1 (January 2000): 236–38.

women would make the public health care dollar more effective for the population of unauthorized immigrants while lifting demand for expensive emergency care.[15]

Data indicates that the public health impact of providing prenatal care is significant and highly cost effective in preventing the spread of sexually transmitted infections (STIs). Children born with STIs suffer from conditions including premature birth, LBW, congenital syphilis, and neurologic damage while mothers with STIs who give birth can experience pelvic inflammatory disease, ectopic pregnancy, placental infection, maternal sepsis, and infection, many of which can be prevented through accessing prenatal care. Up to 80% of STIs are asymptomatic in pregnant women, but are routinely screened for as part of prenatal care, preventing fetuses from being infected.[16] A California study found that eliminating public funding of prenatal care for undocumented immigrants was highly uneconomical. Excluding nonmedical or indirect costs like institutional care, special education, or lost productivity, a conservative model estimates that excess adverse pregnancy outcomes due to eliminating prenatal care would cost the state between $5.1 and $9.2, offsetting savings by 19.2 to 34.9%.[17] Though baseline treatment of STIs cost $725,301, baseline preventive savings totaled $10,134,000.[18] Even as a public health concern, prenatal care in California proved to be highly cost effective.

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[15] Massing MW DuBard C, "Trends in emergency medicaid expenditures for recent and undocumented immigrants," *JAMA* 297, no. 10 (March 14, 2007): 1088, 1091.

[16] Heather Kuiper et al., "The Communicable Disease Impact of Eliminating Publicly Funded Prenatal Care for Undocumented Immigrants," *Maternal and Child Health Journal* 3, no. 1 (March 1, 1999): 40.

[17] Ibid., 39

[18] Ibid., 48

Now that I have reviewed the unique policies states adopt in this matter domestically, in my next chapter I discuss the approaches that different countries use in providing free prenatal care to undocumented immigrants.

CHAPTER THREE

Prenatal Care for Illegal Immigrants Around the Globe

In this chapter I discuss the various countries' policies for providing prenatal care to illegal immigrants and their results to find alternative solutions we can apply in the United States. While illegal immigrants outside the U.S. do not always have the same ethnic makeup as Hispanics, they face similar difficulties and conditions. Therefore, it is important to consider that while illegal immigrants elsewhere are not exactly the same, they do share important social and economic characteristics like financial hardship and discrimination that make them analogous in this paper.

Just as within the United States, individual nations have very different policies for both healthcare and illegal immigration. Typically, rapidly developing countries embrace immigrants—both legal and illegal—and provide them with resources while some highly developed countries seek to deter immigration by offering few, if any, health benefits. The examples I have chosen to give are those of other well-developed countries that are similar to the United States in that they are industrialized and attract immigrants looking for better economic opportunity.

It is also worth noting the United States—in addition to many other Member States of the United Nations (UN)—has signed on to the UN's Convention[1] on the Rights of the Child, which guarantees full maternity care to all women as the right of the unborn

[1] United Nations Conventions are considered treaties and therefore are technically legally binding documents

child, regardless of the mother's legal status.[2] However, the United States is not the only signatory to ignore this provision in the convention.

For instance, Sweden provides no free prenatal care to undocumented migrants. Sweden has a universal healthcare system, providing most care at little to no cost to citizens and legal residents. However, illegal immigrants are not eligible for the discounted amount and must pay the full price as would any foreigner. For example, a consultation with a midwife at a maternity center would cost nothing for a citizen, but 52 euro for undocumented immigrants. While public healthcare centers are required by law to treat patients for emergency care, the government provides no funding or reimbursements to hospitals for individuals who cannot pay. Thus, even public hospitals are unwilling to care for them. Even at maternity centers, most undocumented women must pay in advance before receiving treatments, leading many not to show up for scheduled prenatal appointments.[3] The most pressing concern for unauthorized residents in obtaining any type of healthcare is being deported. The billing system and administrative work make it highly likely for Sweden's migration board to contact the police and alert them to individuals without legal status. In addition, laws do not protect medical personnel from inquiries about legal status from the police. Therefore, they must cooperate when police inquire about the legal status for particular individuals. This last

[2] "Convention on the Rights of the Child" (United Nations Educational, Scientific, and Cultural Organization, 1989), http://www.unesco.org/education/pdf/CHILD_E.PDF (accessed April 14, 2013).

[3] Sara Collantes, *Access to Health Care for Undocumented Migrants in Europe* (PICUM - Platform for International Cooperation on Undocumented Migrants, Brussels, n.d.), 91.

factor especially turns undocumented immigrants away from utilizing healthcare.[4] However, within the past year the Swedish government has recently attempted to extend resources available to illegal immigrants, including full medical coverage for individuals younger than 18 and urgent medical care for adults. Whether either of these will include prenatal care is yet to be determined.[5]

Switzerland's approach is comparable to providing basic care. In theory, the constitution guarantees healthcare to undocumented immigrants, but each province is responsible for catering to this population, creating a range of quality of care between the provinces. "Clandestines," as they are called in Switzerland, are required to purchase private health insurance but high premiums and low socioeconomic status create high barriers to any form of health care, even with income-related subsidies. Undocumented immigrants account for 1.0-1.3% of the Swiss population, a large majority of whom are Latino.[6] In fact, Latinos are the fastest-growing immigrant community in Switzerland, Italy, and Britain.[7] In a study examining the pregnancies of uninsured and undocumented women attending the Women's University Hospital known for its free services, 78%

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[4] Ibid., 92

[5] Samuel Blackstone, "Today Sweden Announced A Plan to Give Health Care to Illegal Immigrants," *Business Insider International*, June 28, 2012, http://www.businessinsider.com/illegal-immigrants-health-care-sweden-2012-6 (accessed April 10, 2013).

[6] Bradford H. Gray and Ewout van Ginneken, "Health Care for Undocumented Migrants: European Approaches," *The Commonwealth Fund* (December 2012): 5,7.

[7] Miguel A. Palomino, "Latino immigration in Europe: challenge and opportunity for mission.," *The Free Library*, April 1, 2004, http://www.thefreelibrary.com/Latino+immigration+in+Europe%3A+challenge+and+opportunity+for+mission.-a0115567363 (accessed April 14, 2013).

were Latino-American.[8] These women typically lived in poor housing conditions and the median income was half the legal minimum though most migrated for better economic opportunities.[9] 83% of pregnancies were unplanned and only one in three women had access to and used contraception. The rate of immunization for rubella (which can cause serious complications if contracted during pregnancy) was 10% lower for immigrant women compared to the local population. Additionally, solely among the Latinas, 31% had never had a Pap smear and an additional 44% had not been tested in more than three years.[10] While the undocumented Hispanic population in this study was able to access free prenatal care in this area to prevent pregnancy complications to address their health disadvantages, this is not always the case in the United States. The Swiss and American illegal migrant populations share many similarities: they are both approximately 80% Hispanic, a majority of pregnancies are unintended, birth control use is low, they live in poor conditions making less than minimum wage, and emigrate for financial opportunity. Rubella immunization and Pap tests are vital for pregnant women. Contracting rubella or having cervical cancer while pregnant can lead to miscarriage, stillbirth, premature birth, and congenital birth defects.[11] While rubella has been almost entirely eliminated in the

[8] Hans Wolff et al., "Health care and illegality: a survey of undocumented pregnant immigrants in Geneva," *Social Science & Medicine* 60, no. 9 (May 2005): 2149.

[9] Ibid., 2152

[10] Ibid., 2153

[11] Jennifer L.W. Fink, "Cervical Cancer - Pregnancy - Pregnancy Problems," *The Bump*, n.d., http://pregnant.thebump.com/pregnancy/pregnancy-problems/articles/cervical-cancer-during-pregnancy.aspx?page=2&MsdVisit=1 (accessed April 14, 2013).

United States, it is common in developing countries[12] like in Latin America, which makes it a pressing concern for Hispanic illegal immigrants. Extrapolating from this study's conclusions, we can presume that the same ethnic population in the United States would face similar health issues, leading to worse birth outcomes and high complications and resulting in high postnatal costs to care for the babies of unhealthy mothers. The Center for Disease Control and Prevention estimates the lifetime cost of a single case of congenital rubella to be greater than $200,000.[13] In contrast to the seven hundred dollars needed to fund one woman's prenatal care, it is much more cost-effective to provide care.

Within Europe, France, Italy, and Spain offer the widest range of free or affordable prenatal care to illegal immigrants. France has an undocumented immigrant population of 400,000, representing just over half a percent of the total population. Most emigrate from Asia, Africa, and Eastern Europe. France utilizes a universal healthcare system under which all residents are covered, but illegal residents receive care through a separate program known as the State Medical Assistance (AME) system. The funds for AME are subsidized by the state and include free physician and hospital care. While basic requirements must be met to be eligible for AME, even those who do not meet

[12] "Rubella and pregnancy | Pregnancy | Pregnancy complications | March of Dimes," *March of Dimes*, n.d., http://www.marchofdimes.com/pregnancy/complications_rubella.html (accessed April 14, 2013).

[13] Lindley MC, Bhatt A. Child, adolescent, and adult immunizations evidence-statement. In: Campbell KP, Lanza A, Dixon R, Chattopadhyay S, Molinari N, Finch RA, editors. *A Purchaser's Guide to Clinical Preventive Services: Moving Science into Coverage.* Washington, DC: National Business Group on Health; 2006. Updated 2011.

prerequisites are entitled to prenatal care from the state.[14] However, care is only offered from sixteen weeks after conception through four weeks after birth.[15] In 2011, the government introduced an annual fee of thirty euro for all individuals participating in AME to alleviate costs[16], which was quickly recalled after public controversy. The total cost of AME in 2011 was minor at 600 million euro[17] compared to the cost of the national healthcare system, which represents 11% of GDP.[18] While data for cost-effectiveness of prenatal care specifically for undocumented residents is not available, data on health outcomes for the French population before and after free prenatal care was provided indicates better outcomes. Prematurity rates have decreased from 9% in 1972 to 5% in 1999, and the perinatal mortality rate decreased from 23.4 per 1000 live births in 1970 to 12.3 per 1000 in 1981. The original perinatal mortality rate resulted in costs equivalent to 2.5% of GDP. The decrease in the mortality rate also corresponds with an

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[14] Gray and van Ginneken, "Health Care for Undocumented Migrants: European Approaches," 4.

[15] Miriam Falco, "Health Care the French Way," *Paging Dr. Gupta*, February 8, 2008, http://www.cnn.com/HEALTH/blogs/paging.dr.gupta/2008/02/health-care-french-way.html (accessed April 10, 2013).

[16] Dr. Sylvie Da Lomba, "PICUM — Dr Sylvie Da Lomba on health care charges for undocumented migrants in France," *Platform for International Cooperation on Undocumented Migrants News Blog*, March 14, 2011, http://picum.org/en/news/blog/25643/ (accessed April 13, 2013).

[17] Gilles Herail, "Undocumented migrants and access to public healthcare in Spain and France: the debate goes on," *UK Race and Europe Network*, November 15, 2012, http://www.ukren.org/UKRENblog/34/Undocumented-migrants-and-access-to-public-healthcare-in-Spain-and-France-the-debate-goes-on.html (accessed April 14, 2013).

[18] Jason Shafrin, "Health Care Around the World: France," *Healthcare Economist*, April 14, 2008, http://healthcare-economist.com/2008/04/14/health-care-around-the-world-france/ (accessed April 14, 2013).

increase in prenatal visits: In 1972, 22.2% of pregnant women had at least six prenatal visits; in 1976, 33.9%; and 38.3% in 1981. While the change in mortality rate can be attributed in part to factors like better standard of living and improved technology, there is a clear trend between more women receiving prenatal care and better birth outcomes. Additionally, before illegal residents were given access to healthcare including prenatal care, they were linked to poorer perinatal outcomes.[19] Thus, if undocumented residents had worse birth outcomes compared to the general French population and health outcomes for French citizens drastically improved after receiving prenatal care at a cost-effective rate, we can identify that providing prenatal care to illegal immigrants would be even more cost-effective.

Brazil provides the highest level of prenatal care to illegal immigrants through a different administrative route. As the world's sixth-largest economy, demand for skilled labor has outpaced supply, enticing the government to grant amnesty and "regularize" current illegal immigrants, entitling them to the benefits of its universal healthcare system, including prenatal care.[20] Thus, there is no difference between how legal and illegal residents receive prenatal care. However, while this is an alternative the U.S. could adopt, it would be the most unlikely because it requires the greatest change in policy.

Sweden, Switzerland, France, and Brazil represent industrialized countries that face immigration problems similar to the United States due to their economic and governmental stability. Their respective approaches to providing free prenatal care to

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[19] Marie C. McCormick and Joanna E. Siegel, *Prenatal Care: Effectiveness and Implementation* (Cambridge University Press, 1999), 324–25.

[20] Mariano Castillo, "Rising Brazil tackles immigration question," *CNN*, January 31, 2012, http://www.cnn.com/2012/01/28/world/americas/brazil-immigration/index.html (accessed April 13, 2013).

undocumented immigrants provide valid alternatives for the U.S. government to consider in changing its domestic policy for cost-effective reasons. In my next chapter I will discuss possible options for providing prenatal care if at all, including applying these alternatives, before issuing a set of recommendations.

CHAPTER FOUR

Possible Solutions and Recommendations

As stated in chapter one, current federal legislation in the United States provides illegal immigrants with free delivery care and covers all costs associated with hospitalization and birth complications of their children who are born citizens. The cost-effectiveness of providing free prenatal care to unauthorized immigrants depends upon government policy. In this section I analyze whether providing this service is cost-effective depending on how much financial responsibility the state takes in three situations: the government does not guarantee emergency care for illegal immigrants or their children born in the US, the government does not guarantee emergency care but does care for the children, and the state maintains the status quo by keeping EMTALA.

State Provides No Obligation to Mother or Child

If the state did not guarantee emergency healthcare for illegal immigrants and denied citizenship status to their children born in the United States, it would be most cost-effective to not provide prenatal care. Without EMTALA, hospitals would require some form of insurance or payment before accepting pregnant mothers as patients or treating their newborns, perhaps even requiring advance payment for illegal immigrants like in Sweden. In this situation, undocumented women would likely receive no healthcare during pregnancy, deliver at home or outside a hospital, and take themselves or their newborns to hospitals only in dire emergencies, likely increasing morbidity rates and

leading to worse health outcomes for the illegal population. Because hospitals would not be required to treat them, the state would not need funds to reimburse healthcare centers.

The greatest direct savings would come from eliminating expenses of treating babies born with complications who are currently automatically eligible for Medicaid when they are born as citizens. This policy would also decrease demand in ERs, alleviating pressure on financially burdened centers that continually absorb the costs of treating patients who cannot pay. Reversing the bottleneck effect would increase efficiency by keeping treatment centers open and less overworked with shorter waiting times, decreasing HCE on a macroeconomic level. However, with this plan the state could incur indirect healthcare costs. For example, illegal children born infected with HIV other contagious diseases may pose a public health risk by infecting legal residents who are eligible for Medicaid or other state healthcare funding. Still, providing no prenatal care would be the most cost-effective option.

Eliminate EMTALA

Though eliminating EMTALA would hold pregnant illegal women responsible to pay for cost of delivery, the federal government would still cover the Medicaid costs of treating the infant, which could be extravagant in the case of birth complications or if the child were infected or unhealthy. While saving on delivery costs for the illegal immigrant population is sizable especially given birth and fertility rates for Hispanics, they are not significant in comparison to the cost of caring for an unhealthy child, making free prenatal care a wise choice. Additionally, because immigrants could not afford to pay for in-hospital deliveries, they would give birth at home without professionals, risking delivery complications for the baby and delaying treatment for children who are born sick

which further increases healthcare spending. In this case, providing prenatal care would be cost-effective in reducing unhealthy outcomes and therefore decreasing costs.

Maintain Status Quo

Given current legislation, providing free prenatal care is the most cost-efficient solution. As the federal government reimburses hospitals for many lost delivery costs and extends Medicaid to the children of undocumented immigrants, preventive care is key in decreasing healthcare spending funded by taxes. As evidenced by the California study analyzing the cost-benefit of eliminating prenatal care for illegal immigrants within the state, postnatal costs for undocumented women who did not access prenatal care were $2341 more than for women who did. In comparison, the average cost of prenatal care was $702. Each dollar spent on prenatal care was found to save $3.33 in postnatal costs and an additional $1.30 in long-term care expenses.

While I have concluded that providing prenatal care is cost-effective in two of these situations, it is also important to determine which level of prenatal care to provide. Based on the literature I have researched and discussed, I have chosen four levels of care that present the most cost-effective solutions: providing full prenatal care, providing limited amount of care, providing free prenatal clinics, and providing a limited type of care. Though offering full prenatal care offers the best health outcomes to mothers and children, it also carries the highest cost. Therefore, it is important to consider if other options are more cost-effective.

Providing a limited amount of care would restrict prenatal care to a certain time frame as seen in France's healthcare system. Rather than providing regular checkups

throughout the pregnancy, undocumented women would be eligible for services beginning at a particular point in fetal development, like the last month of the first trimester. As discussed in chapter three, France's prenatal care for both undocumented and legal women begins during the fifth month of pregnancy and has significantly improved birth outcomes: Since prenatal care was first offered in 1972, prematurity rates have decreased from 9% to 5% and perinatal mortality rates have fallen from 23.4 to 12.3 per 1000 live births, resulting in decreased state health care expenditure. Providing care beginning with this critical point in pregnancy would represent a good alternative that would save in initial costs while providing a good measure of protection to significantly better health outcomes and eliminate high postnatal costs.

Another method of providing prenatal care could involve states constructing free prenatal clinics for pregnant immigrants to utilize. States could use federal funds to set up clinics in areas with high concentrations of illegal immigrants to cater to unique geographical or cultural needs. For example, clinics in Mexican neighborhoods could specialize in and cater to that group's needs and values in maternity care. This approach similar to the one taken by Switzerland would allow for more variability and tailoring to the population. However, drawbacks to this alternative include limitations for patients like distance, thus decreasing access to prenatal care such as in the Geneva study as compared to a system that would allow an undocumented woman to obtain prenatal care in any hospital.

Lastly, a third alternative might seek to prevent only the worst birth outcomes and thus, most expensive postnatal costs. As examined in the California study "The Communicable Disease Impact of Eliminating Publicly Funded Prenatal Care for

Undocumented Immigrants" in chapter two, this could be achieved by providing prenatal care that only screens for infectious diseases that can affect the fetus and provides treatment to prevent transmission. This type of care would entail one visit for healthy mothers, incurring only the cost of screening. Unhealthy mothers would receive medication and care until either eliminating the infection or giving birth, thus preventing extravagant postnatal costs of caring for an infected newborn. Putting this into practice though does pose problems: When up to 80% of women with STIs are asymptomatic[1], obtaining a prenatal checkup that only treats pregnant women with infectious diseases is unlikely to draw many illegal immigrants into an office to be screened.

Recommendations

Of these options, only screening for infectious diseases has the smallest initial cost and prevents tremendous postnatal expenses. However, even despite practical problems, it is not the best option because it does not help prevent LBW and preterm births which also carry disproportionately larger postnatal costs compared to cost of prenatal care. Rather, I find providing prenatal care beginning at a particular point in pregnancy early enough to prevent critical issues while still saving on early prenatal care that is not as cost-effective to be the best compromise. Eliminating the first few months of prenatal care will save initial costs while providing full prenatal care for the rest of the pregnancy that is critical to preventing the transmission on infectious disease to the child and improving perinatal outcomes. However, I do recommend beginning prenatal care

[1] Kuiper et al., "The Communicable Disease Impact of Eliminating Publicly Funded Prenatal Care for Undocumented Immigrants," 40.

during the last month of the first trimester (10-14 weeks[2]) rather than the fifth month (17 weeks) because it is a highly critical period during fetal development and providing care during critical development improves health outcomes. I conclude that so long as the federal government recognizes all children born in the United States as citizens regardless of parental legal status, it is most cost-effective for the state to provide pregnant Hispanic illegal immigrants with prenatal care limited to 10 weeks after conception through delivery.

While providing prenatal care should theoretically improve health outcomes and therefore decrease spending, practical measure arise in implementation. As described in chapter one, Hispanic illegal immigrants face a special set of challenges in obtaining health care that limit their access. Even beyond financial barriers, pregnant Hispanic immigrants begin prenatal care later than the general population due to factors like long waiting times, embarrassment of physical exams, no means of transportation, lack of knowledge of where to access care, and "poor infrastructures of clinic services."[3] These challenges Hispanic illegal immigrants face in obtaining prenatal care can be classified as financial, cultural, or accessibility. While providing free prenatal care eliminates financial barriers, cultural differences and inconvenience continue to deter the population from utilizing these resources. In order to address these concerns, I propose focusing efforts on creating unconventional clinics like mobile health units with a different patient-physician

[2] Melanie Smith, MD, "Prenatal care in your first trimester: MedlinePlus Medical Encyclopedia," *MedlinePlus*, June 15, 2012, http://www.nlm.nih.gov/medlineplus/ency/patientinstructions/000544.htm (accessed April 25, 2013).

[3] Cf Shaffer, "Factors influencing the access to prenatal care by Hispanic pregnant women," *Journal of the American Academy of Nurse Practitioners* 14, no. 2 (February 2002): 94.

relationship to increase accessibility to this population and address cultural concerns to increase their willingness to receive care.

Illegal immigrants are often uninsured, unable to speak English, and unfamiliar with health care in the United States. Even when particular clinics service undocumented women, immigrants are unlikely to visit due to lack of knowledge and difficulty of transportation. However, mobile health units present a cost-effective alternative to traditional methods of administering prenatal care that simultaneously increase availability to pregnant Hispanic women.

Mobile health clinics park on curbs in underprivileged neighborhoods, eliminating barriers to care like transportation and can also have more flexible hours, easing the time constraint burdens of patients. They specifically target underserved populations like individuals without insurance and racial and ethnic minorities,[4] making them ideal for Hispanic undocumented immigrants who are often afraid of visiting traditional clinics for fear of being reported to immigration authorities. Additionally, these mobile units are able to accommodate machinery and equipment for routine prenatal care, including ultrasounds and blood testing.[5]

In Miami-Dade County, a mobile van providing prenatal care catering to foreign-born Hispanics (94.5% were foreign-born, 73.6% originated from Mexico, Guatemala or

[4] "HHS Office of Minority Health announces new research study of mobile health clinics - The Office of Minority Health - OMH," *Office of Minority Health*, October 24, 2011, http://minorityhealth.hhs.gov/templates/content.aspx?ID=9221&lvl=1&lvlID=10 (accessed April 25, 2013).

[5] Lp Edgerley et al., "Use of a community mobile health van to increase early access to prenatal care," *Maternal & Child Health Journal* 11, no. 3 (May 2007): 236.

El Salvador[6]) was found to have 81% of women initiate prenatal care in the first trimester compared to 63.2% in a comparison group. Additionally, 88.5% of women frequenting the MOMmobile received adequate prenatal care, 15% higher than women in the comparison group (73.1%). These impacted health outcomes, with women in the mobile group being half as likely to have a LBW child (4.4% compared to 8.8%).[7] Even within the same population, Hispanic women were more likely to access prenatal care in the mobile van, leading to healthier children. These results were corroborated by another study which found that women who accessed a health van started prenatal care three weeks earlier than woman who used other traditional services for the same care.[8]

Utilizing mobile health units has the ability to dramatically increase access to prenatal care for pregnant Hispanic illegal immigrants. Their low overhead costs and high effectiveness rate make them ideal for prenatal care: each dollar of funding saves twenty additional dollars in HCE.[9] As of 2013, only nine mobile health units addressing maternal care exist.[10] There is much room for growth in addressing accessibility to prenatal care for this population. Combined with measures like employing bilingual healthcare

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[6] E O'Connell et al., "Impact of a mobile van on prenatal care utilization and birth outcomes in Miami-Dade County," *Maternal & Child Health Journal* 14, no. 4 (July 2010): 530.

[7] Ibid., 531

[8] Edgerley et al., "Use of a community mobile health van to increase early access to prenatal care," 235.

[9] Mary Carmichael, "A Little Van with a Big Impact," *Newsweek Magazine*, July 1, 2010, http://www.thedailybeast.com/newsweek/2010/07/01/a-little-van-with-a-big-impact.html (accessed April 25, 2013).

[10] "Mobile Health Map," *Mobile Health Map*, n.d., http://www.mobilehealthmap.org/mhc.php (accessed April 25, 2013).

providers who are trained in addressing the cultural concerns of Hispanics like bringing in a family elder when making health decisions, using mobile health vans has the potential to maximize quantity and quality of prenatal care for Hispanic illegal immigrants in a cost-effective manner.

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