Implementation of the Baby Box Program: A Matter of Life and Death

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Citation

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Abstract

The United States has a high infant mortality rate of 5.79 deaths/1,000 live births than other countries, which stems from the lack of universal prenatal care and the high increase in sudden infant death syndrome (SIDS). Finland has the lowest infant mortality rate of 1.7/1000 births [6] globally due to the baby box program implemented into the country in 1938. This program eliminated the disparity between socioeconomic status and a healthy baby. The baby box program's success inspired the Institute of Clinical Bioethics and the Mercy Health System due to the evident healthcare gap among the growing undocumented population. Specifically, the Mercy Catholic Medical Center and the Institute of Clinical Bioethics at Saint Joseph's University wanted to create a sustainable program that assisted mothers in the Philadelphia area. Currently, there is a Healthy Mother and Healthy Baby physical station at the Health Promoter Program, a preventative effort to assist the undocumented population in Philadelphia created by the Institute of Clinical Bioethics. The Institute funds this program and specifically this station to eliminate the disparity of prenatal health and postpartum health of Philadelphia mothers. Not only is this program encouraging the health of babies and their mothers, but the Saint Joseph's University team is also using the baby box model to collect data to see how effective the baby box model is in the Philadelphia area. The goal is to decipher whether the distribution and prenatal education and care set up a paradigm for healthcare providers in the United States.

INTRODUCTION

Compared to other countries, the United States has a high infant mortality rate, which stems from the lack of universal prenatal care and the increase in sudden infant death syndrome (SIDS). In the United States, the infant mortality rate is 5.79 deaths/1,000 live births compared to other countries like Iceland that have rates as low as 0.7 deaths per 1,000 live births. [1] Of these infant deaths, the leading causes are congenital malformations, low birth weight, maternal complications, accidents, and SIDS. [2] As of 2017, studies have shown that up to 70% of Hispanic mothers were likely to receive no prenatal care or delayed care than non-Hispanic white mothers. Puerto Ricans had a 50% higher infant mortality rate as compared to non-Hispanic whites. [2] The infant mortality rate ranged from 4.0 deaths per 1,000 live births in Cuban Americans to 6.5 deaths per 1,000 births in Puerto Ricans. [2] Along with Hispanic Americans, the non-Hispanic black population suffers from high infant mortality rates, reaching about 11.0 deaths per 1,000 births. In 2017, only 66.6% of non-Hispanic black patients received prenatal care during the first trimester than 82.4% of non-Hispanic white patients. [2] High rates of health disparities can be one of the leading causes of the high infant mortality rate in the United States. One of the primary contributors is socioeconomic factors, which has created gaps leading to suboptimal care in specific populations. [3]

Infant mortality has been linked to poverty and rural living; those living in higher poverty areas in the U.S had a greater chance of infant mortality compared to low poverty areas. [4] Although the U.S infant mortality rate has declined over the years; healthcare disparities still affect prenatal care access. Focusing on the socioeconomic and demographic factors of those facing health disparities is critical in addressing pregnant women's gaps. Many countries have implemented various methods to impact rates of infant mortality around the world. In 1938, the Finnish government created the baby box program to curb infant mortality rates [5], with Finland having one of the lowest infant mortality

rates in the world -1.7/1000 births. [6] This program is provided to individuals regardless of their socioeconomic status and allowed them to obtain the necessary prenatal care and care for their newborns. This program also guided them towards doctors and nurses. [5] In the 1930s, the infant mortality rate in Finland was 65/1000 babies, which has declined significantly since the implementation of the program. The program distributed baby boxes containing a mattress, onesies, teething toys, and various materials to encourage good parenting, provide prenatal care, and symbolize equality. [5]

Cities in the United States recently adopted this program through baby box university in various states to lower the SIDS rate. According to the Centers for Disease Control and Prevention, approximately 3,600 babies under the age of one die suddenly per year. The cause of SIDS is unknown but is suspected to be due to the baby sleeping in a prone position, co-sleeping, or sleeping on a soft surface. The "baby boxes" are given to expectant mothers one month before their due date to combat this issue. Each box contains a waterproof baby mattress with a cotton sheet, onesies, sleep sack, thermometer, pair of socks, bibs, washcloths, burp cloths, mittens, knit cap, and a teething ring. Many cities around the U.S are adopting the baby box program to curb infant mortality. The infant mortality rate in the U.S has been steadily decreasing since 1990 from 9.4 deaths per 1,000 births to 5.79 deaths/1,000 live births in 2018. [21] However, the U.S is still surpassing other countries, so it is crucial to understand the driving force of infant mortality and how to combat it. [22]

As an initiative to decrease sudden infant death syndrome (SIDS), the Healthy Mothers and baby box program was adopted and put together by Saint Joseph's University (SJU) through the Mercy Health Promoter program. The program's main objective is to see how implementing this program in communities with low socioeconomic status or those without proper health care impacts the mortality rate. Racial disparities in healthcare, low socioeconomic status, lack of a support system, and inadequate healthcare programs can all be driving factors for maternal and infant mortality. [23] The decades of systematic inequality have led to substantial health disparities, especially in health coverage for African Americans and Hispanic Americans. [24] In 2019, 13.6% of African Americans were uninsured vs. 27.2% Hispanic Americans than 9.8% non-Hispanic white Americans. [25] In addition to healthcare disparities, one's socioeconomic status affects mortality rates linking low income with infant mortality. [26] This is alarming as 1 in 4 women in the United States giving birth is below the poverty line. [26] These statistics make healthcare disparities even more evident when 19% of Hispanic Americans and 22% of African Americans are in poverty than 9% of non-Hispanic whites. [27] To combat infant and maternal mortality, it is essential to increase access to critical services and improve the quality of care for pregnant women in areas where access to healthcare is limited or non-existent. [23]

This initiative focuses on eliminating racial disparities in the health system and setting up a paradigm for healthcare providers in the United States. Before detailing the baby box project within the Mercy Catholic Medical Center, it is vital to discuss the Mercy Health Promoter model. This background will provide information on what communities are being served and their demographics.

THE MERCY HEALTH PROMOTER MODEL

In 2019, an estimated 44.7 million immigrants were in the United States [28], and in 2020, 10.5-12 million were undocumented. [29] In 2017, it was reported that there were 19.7 million immigrants of Latino origins present in the United States. [35] Among other cities in the United States, Philadelphia has seen an increase in the immigrant population over the years. [30] Philadelphia is home to roughly 50,000 undocumented immigrants [36]. Within the Philadelphia immigrant population, there are approximately 49,100 African American immigrants [31]. Many of them battle with obtaining healthcare and face racial disparities. About 45% of the immigrant population is estimated to be undocumented in the United States, making it considerably harder to receive adequate healthcare. [30]

With the influx of immigrant populations, more hospitals are seeing an increase in undocumented individuals, which has led to more reports of individuals from these vulnerable populations being more prone to chronic diseases and not receiving the proper care. [30] To combat this issue, the Mercy Health Promoter Model (MHPM) was implemented by the Mercy Catholic Medical Center (MCMC) in collaboration with the Institute of Clinical Bioethics (ICB) at Saint Joseph's University (SJU). [31] The Health Promoter program has helped African and Hispanic populations in Philadelphia over the last several years to control and combat these chronic issues through education, preventive medicine, and primary care access. [31] The Health Promoter Program is a sustainable program done once a month in Philadelphia and focuses on the rising

undocumented population and low-income areas. This program serves to increase community participation by working with trusted community members who will understand each station. After two years at one location, the community members will continue providing preventive care and education. [30] Alongside working with the community, the program seeks to reduce healthcare costs, provide preventive healthcare through partnerships in the area, education, and improve the quality of life by managing chronic conditions at the health promoter sessions. The program's goals are accomplished through three stations: height and weight, blood pressure and pulse oxygen saturation, and blood glucose and cholesterol. Upon completing their evaluation in these three stations, the patients then move onto the Data-Entry Station. After completion members can visit the supplementary stations that focus on medical advice, reading glasses, dental health, diet & exercise, women's health, legal advice, and maternal health.

Height and Weight

The patient is given a registration card that consists of the patient's identification code and slots to fill in their subsequent clinical findings when they first enter the promoter site. After the individual receives their registration card, their height and weight are obtained, and their body mass index (BMI) can be calculated. The height and weight station's clinical importance is to inform the individual whether their weight falls within the normal limits.

Blood Pressure and Pulse Oximetry

The patient will then be directed to the blood pressure and pulse oximetry station for further evaluation. There are two critical clinical findings associated with the blood pressure and pulse oximetry station. The first finding, blood pressure values, determines whether an individual is hypertensive. The second finding, pulse oximetry values, determines whether an individual is hypoxic or not. Lastly, the heart rate value can help determine whether an individual has a heart arrhythmia.

Blood Sugar and Cholesterol

The patient is directed to the blood glucose and cholesterol station from the blood pressure and the pulse oximetry station, where their blood sugar levels and total cholesterol levels will be obtained. The blood sugar and blood cholesterol station's clinical importance is to inform the individual whether they have elevated levels of sugar or cholesterol in their bloodstream.

Data Entry

The Data-Entry Station in the General Health Promoter Clinic has a two-fold purpose. The first is to obtain a large body of statistical data used to extract demographic and medical information about the particular community being served, and the second is to monitor a patient's health during the time that the ICB serves the community.

Medical Residents

For each Health Promoter Session, there are two to three medical Residents present on site. The purpose of having these Residents is to provide individuals at the Health Promoter Session with medical knowledge and advice.

EyeGlass Program

The eyeglass program "Frames-to-Go" originated in June 2013; volunteers are specifically trained to administer an essential eye examination to which they can equate to the strength of the prescription needed; the community member is allowed to choose 1-2 pairs from a considerable selection of reading glasses for free.

Dental Program

Dental checkups fill a significant void for the undocumented communities, including free dental screenings for both children and adults. Adults and children receive practical dental education, toothbrushes, and essential information regarding the exam's assessment and a referral to multiple University of Pennsylvania dental clinics for services or annual exams.

Diet & Exercise

Obesity is a growing issue in the United States. To help bring awareness to this, the Health Promoters Program provides resources for community members. Pamphlets highlighting popular health issues and At-Home Workout sheets are also available, both in English and Spanish, for individuals to take with them and practice at their leisure.

Health Promotion Council

The Health Promotion Council (HPC) is an organization that has been highly committed to the MHP model. This organization promotes the wellness of women by offering free mammograms and cervical screenings.

Mexican and Guatemalan Consulate

The Mexican and Guatemalan Consulate of Philadelphia are involved with the Health Promoter Program and send representatives each month to provide their services. The Consolates provide immigration services and information to many undocumented individuals and provide any financial advice to the community.

United States Citizenship and Immigration Services

Having this contact present during the sessions allows individuals to gather insight on the proper channels to potentially apply for legal citizenship in the US, along with answering the multitude of questions that individuals from these communities may possess.

PRENATAL VITAMINS & BABY-BOXES IN ACTION

As mentioned above, the Healthy Mothers and baby box station is the focus of this paper, which will focus on the incorporation of the program into the Health Promoter model and its benefits for the community. The purpose of this station is three-fold. First, it provides vitamins that both the mother and baby need for a healthy pregnancy and helps reduce complications caused by vitamin and mineral deficiencies. The prenatal vitamins are given in a monthly supply to ensure pregnant mothers return for the following health promoter session. Second, this station provides the mother with a "Baby-Box," a safe, cushioned "box" for their baby to sleep in if need be, which can reduce infant mortality. [30] The baby box contains a waterproof baby mattress with a cotton sheet, onesies, sleep sack, thermometer, pair of socks, bibs, washcloths & burp cloths, mittens & knit cap, and a teething ring. [32] The baby box is given a month before the due date. Data on the baby box program's effects are collected by following up with the mothers by phone call three, six, and nine months after the baby box is given. [30] The boxes are distributed in accordance with the Mexican and Guatemalan Consulate and Trinity hospital.

Finally, the station provides educational tools regarding birth, infant care, safe sleep practices, and the importance of vitamins via an educational brochure provided in Spanish and English.[30] This station's overall goal is to provide expecting mothers with the materials they may need and encourage safe sleeping practices to combat the infant mortality rate. With access to our monthly clinics, the long-term expectation is that the information learned will be relayed to others in the community and subsequently passed on by our community health promoters.

EDUCATIONAL PIECE

It is imperative that both community health promoters and expecting mothers understand the importance of maintaining a healthy pregnancy and safe sleeping practices. To ensure this, we have a pamphlet in Spanish and English handed out to both Health Promoter locations and a brief in-person talk about the program and the benefits. The sections included in each pamphlet are the advantages and conservation of breast milk and a nutrition and health aspect to ensure each mother understands each of these factors' impact.

"Breast milk provides abundant and easily absorbed nutritional components, antioxidants, enzymes, immune properties, and live antibodies from mother" (Women's Health 2018). The benefits of breastfeeding include providing natural nutrition, improving the baby's bodily defenses, and aiding in child development. The pamphlet also includes how one should store breast milk. Freshly pumped milk can be stored at room temperature for up to 4 hours. Breast milk can also last up to 4 days in the refrigerator and six months in the freezer.

The Nutrition section of each pamphlet talks about how diet, exercise, and the avoidance of drugs and alcohol can substantially affect the baby. Usage of tobacco increases the risks of Sudden Infant Death Syndrome. In contrast, alcohol use during pregnancy can cause an abundance of fetal alcohol syndrome disorders such as abnormal facial features, having a smaller head, poor coordination and memory, intellectual disabilities, and various damages to the heart, kidneys, or bones. The incidence of fetal alcohol syndrome is 1-2 cases per 1,000 live births.

The pamphlet also mentions supplements like folic acid and vitamin D, which have essential effects on pregnancy. Folic acid can be taken as a supplement or found in various foods such as cereal, bread, pasta, and other grain-based foods. Folic acid reduces the risk of neural tube defects such as spina bifida by 70%. Vitamin D supplementation during pregnancy improves maternal vitamin D status and may reduce the risk of pre-eclampsia, low birth weight, and preterm birth. Like folic acid, vitamin D can also be taken as a supplement or found in various foods such as egg yolk, salmon, cod liver oil, and milk. Both of these supplements can be in most prenatal vitamins. The supplemental benefits will be talked about in greater detail further along in the paper.

INFANT MORTALITY

Infant mortality is defined as an infant's death within the first year of life and is considered a public health crisis. [1] The primary causes of infant deaths vary by the age of the infant at the time of death. [1] Within the first month after birth, short gestation and low birth weight are together the leading cause of neonatal mortality, followed by congenital malformations and maternal complications. [1] There are significant racial disparities in infant mortality rates in the United States. Non-Hispanic Black mothers experience the highest infant mortality rate among all racial and ethnic groups and the highest preterm birth and low birth weight rates. [1] Mothers who are American Indian or Alaska Native and Native Hawaiian or other Pacific Islander also experience a higher than average infant mortality rate. [1] The infant mortality rate among Hispanic mothers is similar to the national average (5.10 deaths per 1,000 live births). In comparison, rates among White and Asian mothers are lower than average (4.7 and 3.8 deaths per 1,000 live births, respectively). [1]

Researchers and medical researchers have considered various factors to understand better racial disparities in infant mortality, including infant health; maternal demographics, health, and behavior; medical care before, during, and after birth; and home and social environments before and after birth. [1] Studies consistently indicate that socioeconomic disadvantage is linked to a higher risk of adverse birth outcomes both in the U.S. and other highly industrialized countries.[1] Some factors leading to adverse birth outcomes in lower socioeconomic populations are lack of preventative healthcare such as prenatal vitamins, education about maternal and fetal health, and suboptimal practices following birth, leading to poor maternal and infant health.

As previously stated, the Healthy Mothers and baby box program was adopted and put together by Saint Joseph's University (SJU) through the Mercy Health Promoter program. The program's main objective is to see how implementing this program in communities with low socioeconomic status or those without proper health care impacts the mortality rate.

MATERNAL HEALTH, EDUCATION, AND IMPORTANCE OF PRENATAL CARE

Mothers play a vital role in their children's health and quality of life, which is why it is so important to focus on maternal health during pregnancy. Health education during pregnancy is essential to improve maternal and child issues. This program has been associated with a wide variety of maternal and child issues, including reduced prematurity and low birth weight, and increased initiation and continuation of breastfeeding.[15] Considering the potential outcomes of health education programs targeting pregnant women, healthcare organizations must incorporate and perform educational activities to prepare pregnant women for childbirth and the postpartum period.

Many factors can affect pregnancy and childbirth, including preconception health status, age, access to appropriate preconception, prenatal and quality health care, and poverty. There are racial and ethnic disparities in mortality and morbidity for mothers and children, mainly; maternal and infant mortality and morbidity are highest for African Americans. [12] According to a U.S. Department of Health and Human Services survey, the infant mortality rate ranges from 4.0 per 1,000 live births for Cuban Americans to 6.5 per 1,000 live births for Puerto Ricans among Hispanic Americans. Hispanic mothers were 70 percent likely to receive late or no prenatal care than non-Hispanic white mothers in 2017. These differences are likely the result of many factors. Environmental and social factors such as access to health care and early intervention services, educational, employment, economic possibilities, social support, and resources to meet daily needs impact maternal health and overall health status.

Postpartum depression can affect mothers two weeks following delivery, especially if they have a history of mood disorders. According to the CDC, 1 in 8 new mothers report symptoms consistent with postpartum depression. This condition can impede the mother from adequately caring for their infant. This has the potential of leading to SIDS if the proper sleeping techniques mentioned above are not followed. Therefore, the mental health of the mother both during and after pregnancy should not be neglected.

Attending prenatal classes allows expectant mothers and couples to interact with those healthcare providers and doctors that may have a vital role in their labor and delivery. With regular prenatal care, women can reduce the risk of pregnancy complications. Following a healthy diet, getting regular exercise as advised by a healthcare provider, and avoiding exposure to teratogens such as alcohol, tobacco, and lead can help reduce the risk of pregnancy problems and promote fetal health and development. [16]

Tobacco smoke and alcohol use during pregnancy has been

shown to increase the risk of Sudden Infant Death Syndrome. Alcohol use also increases the risk for fetal alcohol spectrum disorders. Also, taking 400 micrograms of folic acid daily reduces the risk for neural tube defects by 70%. Most prenatal vitamins contain the recommended 400 micrograms of folic acid and other vitamins that pregnant women and their developing fetus need. [18] [7]

Folic acid is essential during the early development of the fetus. Mothers can also receive folic acid through foods that contain folates, such as cereals, bread, pasta, and other grain-based foods. Iron during pregnancy is essential, as it supports the development of the placenta and fetus as well as supplies oxygen.Vitamin D also plays a crucial role during pregnancy as it promotes healthy bone development. [13] A recent study found women taking 4,000 IU of vitamin D daily had the most significant benefits in preventing preterm labor/births and infections. The average prenatal vitamin only contains 400 IU of vitamin D, so additional supplementation should be taken daily. Vitamin D-rich foods include eggs, fish (salmon and sardines). Some breakfast cereals, margarine, and yogurts are also fortified with vitamin D.

Prenatal care is significant in ensuring healthy outcomes for all. According to a study that compared mothers who received prenatal care with mothers who did not receive prenatal care, infants with low birth weight are three times more who did not receive prenatal care. Prenatal care can help prevent difficulties and complications and inform women about the necessary steps to protect their infant and ensure a healthy pregnancy.

DATA ANALYSIS

The baby box program provided families with essential items for their newborn, including a safe, separate bed to reduce the risk of Sudden Infant Death Syndrome (SIDS) due to co-sleeping or placing their child on too soft a surface.

Families that received a baby box agreed to provide either a phone number or email to be contacted at three-month intervals starting at the date when the baby box was delivered.

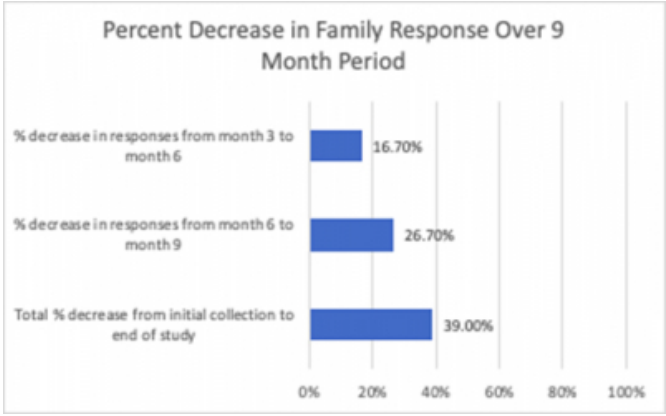
Members of the baby box program would reach out to the mothers/families to ascertain two pieces of information: whether the family had been using the baby box resources and the baby's general well-being.

The project data per family spans over nine months, as SIDS is the most significant cause of infant mortality between one to twelve months of age; however, it is at its highest likelihood during the first six months of an infant's life. By nine months of age, the possibility of SIDS is extremely low. In three-month intervals, contact is essential with families because as every three months pass, the likelihood of SIDS decreases. Through the use of three-month intervals, consistent data should be determined about each baby's general health and the family's use of the baby box provided by the program. The data provided is based on the results from distributing twenty-seven baby boxes.

Over the nine months, families were contacted at three-month intervals, the feedback percentage (positive or negative) decreased substantially from each three-month interval.

Although members of the baby box program reached out to the families, they aimed to serve at the agreed-upon intervals; there is an inherent error with polling undocumented immigrants in the Philadelphia area. Due to safety concerns, families may not have given a reliable point of contact for the baby box program members to reach them. Additionally, some expectant mothers and families who gave reliable points did not always answer/return phone calls and emails or changed their phone numbers without informing the baby box program.

Figure 1



As seen in Fig. 1, the percentage of families' responses involved with the baby box program significantly reduced in three-month intervals. Due to issues on behalf of the baby box program members being able to contact the families previously described successfully, positive data collection decreased 39% over the nine-month study. From the first three to six months of the study, the total number of

responses from families involved with the study decreased by 16.7%. From months six to nine of the study, 26.7% fewer families involved in the program continued their involvement with responding to the program.

Figure 2

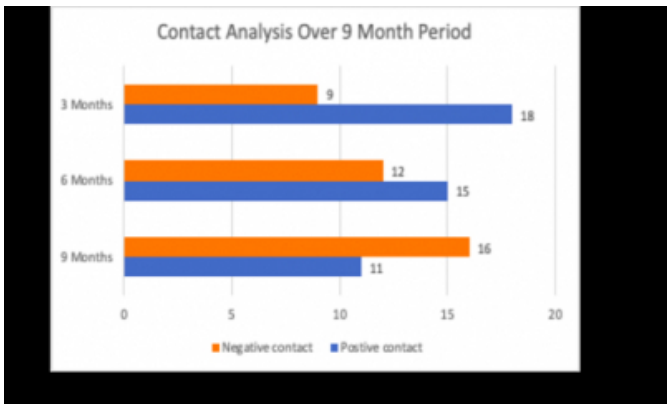


Fig. 2 displays the number of responses provided by the families within Philadelphia that received a baby box at each three-month interval over the nine months of the study. At each three-month interval, the number of positive contacts is contrasted with the number of negative contacts received by the baby box program members. Positive contact is defined as a family that responded to the baby box program upon polling the families. Conversely, a negative contact is defined as a family that did not respond to the baby box program study upon being interviewed.

Twenty-seven were given a baby box during the study. At the first three-month interval (month 3), only 18 out of the 27 families provided data to the baby box program members during data collection (polling). Therefore, only 66% of the families given a baby box continued to report data to the study at the three-month interval; 33% of the families terminated their involvement with the study. At six months, the percentage of positive contact from families decreased 16.7% from month three to six, with only 15 of the 27 families providing positive contact with the program. At the six-month interval, only 55% of the initial 27 families continued their involvement with the baby box data collection. At nine months, the percentage of positive contact from families decreased 26.7% from month six to nine, with only 11 of the 27 families providing a positive connection with the program. Only 40% of the initial 27 families continued their involvement with the baby box data collection at the six-month interval. By the end of the study, 60% of the families given a baby box nine at the beginning of the study did not continue their data collection involvement.

Within recent months, eighteen additional baby boxes were distributed to expectant mothers; out of the eighteen women who received a box, and the contact information was collected from fourteen. This information is not represented in either graph yet as these women are still pregnant and have not been followed up on yet. Likely, the same trend of a gradual decline in participating in the data collection will be observed within these fourteen women.

Although the data collection has proven difficult due to circumstances around families that the baby box program serves, all collected data shows that the families are doing well. Each family that provided positive contact to the baby box program stated that they were both using the baby box provided and that their baby was healthy at the time of calling. Although the baby box study's families received negative contact from are likely also healthy, there is no way to know. The research is unable to visualize the data intended fully.

For a more detailed and cohesive study of the baby box program's success and impact on undocumented families within Philadelphia, every family that receives a baby box would have several contact points; this would reduce the number of families the baby box program cannot reach to receive data. More families will be reached successfully with more contacts, thus increasing the number of positive responses the baby box program receives. With more data available, the baby box program's effectiveness in Philadelphia would be easier to understand and visualize.

Within Pennsylvania, the baby box program helps the community of undocumented families. Among essential items for a newborn, such as a onesie, thermometer, clothes, and a teething ring, the baby box program provides each family served with a free safe, separate bed for their babies to sleep in rather than in co-sleeping with an adult family member. Due to a correlation between undocumented citizens and poverty in Philadelphia and the greater United States, the families that the baby box program aids may otherwise not be able to afford a safe crib for their child to sleep with [33]. Unsafe sleeping conditions and a lack of resources increase the likelihood of co-sleeping, thus reducing SIDS risk of SIDS (Sudden Infant Death Syndrome). Therefore, the bed provided with baby box program reduces an infant's likelihood within an undocumented family in Philadelphia's risk of SIDS. By looking at trends between the use of the baby box program

in undocumented families and positive responses from families contacted, it can be inferred through the data that the baby box program effectively helps undocumented and poverty-stricken families caring for a newborn.

ETHICAL ARGUMENTS

In the last four decades, this nation has been trying to improve our health care delivery system's quality. Despite the efforts to increase healthcare quality, disparities continue to be prevalent and have unjust consequences for racial and ethnic minorities. Advances in technology and a better understanding of the disease process have greatly improved due to research in medicine. This has contributed to better management of the disease process, which has improved the morbidity and mortality rates of many patients and increased life expectancy in this country. Unfortunately, this effect is predominantly seen among white Americans while other ethnic groups are still vulnerable, especially inner-city Hispanic populations. In principle, our health care system is considered the best globally; it has its flaws and has left millions of Americans and documented and undocumented individuals with inadequate health care or no access to essential health care services.

In 2019, an estimated 44.7 million immigrants were in the United States [28], and in2020, 10.5-12 million were undocumented. [29] In 2017, it was reported that there were 19.7million immigrants of Latino origins present in the United States. [35] Among other cities in the United States, Philadelphia has seen an increase in the immigrant population over the years. [30] Philadelphia is home to roughly 50,000 undocumented immigrants [36]. Within the Philadelphia immigrant population, there are approximately 49,100 African American immigrants [31]. Many of them battle with obtaining healthcare and face racial disparities. About 45% of the immigrant population is estimated to be undocumented in the United States, making it considerably harder to receive adequate healthcare. This population has unique needs, which physicians and hospitals are not well-equipped to provide. The majority of this community is suffering from chronic diseases such as hypertension, diabetes, and obesity, and many others are receiving no prenatal care. As health care providers, we must improve the health of the community we serve. To achieve this goal, it is crucial to understand the diseases prevalent in this community and develop services tailored to meet these needs. Prenatal care and the establishment of the Healthy Mother and Baby Box Program is one area of health care that has been greatly overlooked in the Philadelphia community regarding the undocumented population. This is undoubtedly a medical problem, but it is also an ethical problem for all Americans. To allow race and ethnicity to play any role in providing health care to our fellow brothers and sisters goes against morality's basic principles. It will be argued that—according to the ethical principles of respect for persons, beneficence/nonmaleficence, and justice—action must be taken immediately to address these concerns. Such action will save lives and rebuild a sense of trust between the minority community and the medical establishment.

RESPECT FOR PERSONS

This principle incorporates two ethical convictions: first, that persons should be treated as autonomous agents, and second that persons with diminished autonomy are entitled to protection. The principle of respect for persons thus divides into two separate moral requirements: the requirement to acknowledge autonomy and the requirement to protect those with diminished autonomy. Respect for human persons refers to a person's right to exercise self-determination and be treated with dignity and respect. All people deserve autonomy and to be treated with dignity and respect. Failure to provide any person with adequate health care, regardless of race, creed, color, national origin, sexual orientation, etc., violates this fundamental right of respect for persons. Fear that undocumented individuals will be turned over to the Immigration and Naturalization Service (INS) if they seek medical care violates personal freedom. It subjects all undocumented persons to the most terrible form of slavery: constantly afraid, not knowing their condition or fate, and constantly fearing not living. This way of living does not promote human rights, and it violates them.

Second, minorities in this country, especially the undocumented, are the most vulnerable people. When Hispanic refugees, asylees, and immigrants arrive, they are often traumatized and shocked. They usually have no jobs and no financial support on which to fall back. Also, they are in poor health, often because they have moved from town to town or from one refugee camp to another. The children may not have been in school for several years, or they may not have been to school at all. As is often the case in refugee-producing situations, women and children become the most vulnerable refugee community members. Statistics show that racial and ethnic minorities are generally poorer than whites and more likely to have family incomes below 200 percent of the federal poverty level. The result is that many undocumented individuals are fearful of seeking health care

for fear of being deported. This is especially true for women who are pregnant.

Besides this fear, there is always the cost factor. This fear and mistrust among the minority population in the United States are magnified with documented and undocumented individuals. The result is that many undocumented and even documented Hispanic immigrants in the Philadelphia area are not seeking medical care until they are in the last stages of their disease or women have complications with their pregnancy. According to those who work with this population and have gained their trust, the reason for this is a mistrust of the medical establishment and a fear that if they present to an Emergency Department and are found to be undocumented, they will be turned over to the INS for deportation. Unfortunately, this has happened in several cases. Even though Catholic hospitals in the Philadelphia area will not contact INS in these situations, there is still a great fear among this population. Because of this fear, these individuals enter the medical system only out of desperation, when they can no longer stand the pain, have collapsed in a public setting, or have severe complications with the pregnancy. In most cases, the disease has progressed to the extent that treatment is often futile or extremely expensive. For many pregnant women, it is because they have not received prenatal care and remain uneducated about nutritional issues, controlling existing conditions, and issues like the use of tobacco and alcohol and SIDS. This sense of fear among the undocumented population violates the basic principles of respect for persons. Failure of the medical establishment to give this population adequate health care or withhold treatment is the "standard of care" because the individual is undocumented or unable to afford said treatment denies these individuals their fundamental rights of dignity and respect. The medical profession is based on treating all people with dignity and respect. Until we can show an improvement in the overall quality of care and work to aggressively promote public health interventions on such diseases as hypertension, diabetes, obesity, and prenatal care for minorities in general and the undocumented specifically, we will never gain the trust of the minority communities. We will never close the ever-widening gap in quality of care.

The medical profession's failure to be proactive in addressing this most vulnerable population's medical needs is causing needless suffering and even death. This precise form of prejudice violates the ethical principle of respect for persons. Minority patients' autonomy and the basic respect they deserve as human beings are being violated because they can endure pain, suffering, and even death when such hardships could be alleviated. All hospitals, especially Catholic hospitals, governed by the Ethical and Religious Directives for Catholic Health Care Services, have a moral and ethical obligation to address the medical disparities in minority communities. If Catholic hospitals are committed to treating every person with dignity and respect, then the barriers to health care must be lifted to ensure this commitment, and emphasis must be placed on patient dignity and empowerment. The Health Promoter Program and the Healthy Mother/Baby Box program, in particular, meet this need and are treating women who are undocumented and pregnant with dignity and respect.

BENEFICENCE/NONMALEFICENCE

The principle of beneficence involves the obligation to prevent, remove, or minimize harm and risk to others and promote and enhance their good. Beneficence includes nonmaleficence, which prohibits the infliction of harm, injury, or death upon others. In medical ethics, this principle has been closely associated with the maxim primum non nocere ("Above all, do no harm"). Allowing a person to endure pain and suffering that could be managed and relieved or placing mothers and their babies at risk because of a lack of prenatal care violates the principle of beneficence because one is not preventing harm and, therefore, not acting in the best interest of the patient. The duty to act in the patient's best interest must be the medical profession's primary focus.

The Healthy Mother/Baby Box Program is addressing the best interests of undocumented pregnant women. The education program provided by the Health Promoters educates the women on breastfeeding, the need for prenatal vitamins, use of Vitamin D and folic acid, SIDS, etc., but also helps these women control their existing conditions. Diabetes and hypertension are major health factors among the undocumented population. Educating women on these health issues and tobacco use and alcohol use is not only in the best interests of the mothers but also in the best interest of their newborns. The Baby Box program has been proven to be effective in decreasing infant mortality rates in many countries. The small study done in this paper clarifies that the Baby Box program is effective and that it is maximizing benefits and minimizing harms, not only for the newborns but also for society as a whole.

After reviewing the Baby Box data and identifying the biases and stereotyping in the medical profession, it is clear

that disparities in U.S. health care expose minority patients, especially the undocumented Hispanics, to unnecessary risks, including possible injury and even death. Physicians have a moral responsibility to do what is suitable for their patients. Should a physician be impeded in the exercise of his or her reason and free will because of prejudice or bias on the part of the medical establishment, then that physician has an ethical responsibility to overcome that impediment and do what is demanded by the basic precepts of medicine—seek the patient's good. Mercy Catholic Medical Center and the research fellows in the Institute of Clinical Bioethics at Saint Joseph's University address the needs of the undocumented medically, socially, and ethically. The health of pregnant women and their newborns' care must be a priority for all healthcare workers, especially those working in Catholic healthcare facilities. Failure to recognize the needs of the undocumented and address them to the best of our ability is a failure not only of the test of beneficence; it may also be a failure of the test of nonmaleficence.

JUSTICE

This principle recognizes that each person should be treated fairly and equitably and be given his or her due. The issue of medical disparities among minorities and especially among the undocumented also focuses on distributive justice: the fair, equitable, and appropriate distribution of medical resources in society. When reforming healthcare in this country has become a high priority, failure to initiate preventative measures that would save medical resources in the long-run violates the principle of distributive justice. The justice principle can be applied to the problem under discussion in two ways.

Inequality concerning adequate health care for Americans is a well-documented fact. Studies have shown that socioeconomic disadvantage is linked to a higher risk of adverse birth outcomes both in the U.S. and other highly industrialized countries. [37] Some factors leading to adverse birth outcomes in lower socioeconomic populations are lack of preventative healthcare such as prenatal vitamins, education about maternal and fetal health, and suboptimal practices following birth, leading to poor maternal and infant health. The principle of justice is clear that all people must be treated fairly and equally. Failure to provide prenatal care to undocumented pregnant women and their newborn children violates this right. The Healthy Mother/Baby Box program is meeting these needs to the best of their ability. The Health Promoter Programs welcomes everyone. No one is ever turned away. The program is inclusive and unbiased, and the health promoters work hard to overcome the fear and bias many in the undocumented community feel living here in Philadelphia. They not only provide needed services but are building the trust that will have long-term consequences.

The principle of justice also pertains to the fair and equitable allocation of resources. The Health Mother/ Baby Box program has proven to save lives by decreasing the infant mortality rate in many countries. Providing undocumented pregnant women with the Healthy Mother services and the Baby Box will save lives and help the undocumented mothers remain healthy and have fewer complications during their pregnancies. This paper has shown that racial disparities in healthcare, low socioeconomic status, lack of a support system, and inadequate or non-existent healthcare programs are the driving factors for maternal and infant mortality in the United States. The resources that are being provided by the Healthy Mother/Baby Box program and the maternal health education services being provided meet the needs of the mothers and their babies, their families, and society as a whole. This is a prime example of a just allocation of resources.

We Americans espouse the belief that all men and women are created equal. Equality has also been a fundamental principle of the medical profession. If we genuinely believe in inequality, we should insist that all men and women must receive equal medical treatment and resources. Denying certain minorities medical treatment, when whites receive them as a standard of care, is an unjust allocation of resources and violates a basic tenet of justice. Physicians and the medical profession have an ethical obligation to use available resources reasonably and distribute them equitably. Failure to do so is ethically irresponsible and morally objectionable. To compromise the basic ethical foundations upon which medicine stands is destructive not just to minority patients but also to society.

To address these medical and ethical concerns, Mercy Health System of Southeastern PA, in conjunction with the Institute of Clinical Bioethics at Saint Joseph's University in Philadelphia, has designed a comprehensive education and prevention model that will meet the needs of the undocumented Hispanic community in the Philadelphia area. The Mercy Health Promoters Program is an initiative whose foundation is based on an established program in the third world, which has increased medical care in these areas and saved countless lives. As the undocumented population continues to increase in the United States and health care

costs continue to skyrocket, this new initiative can become a paradigm for all hospitals in the United States. Racial and ethnic disparities in health care constitute a complex issue that pertains to individuals, institutions, and society as a whole. Unless we Americans address these disparities and begin to eradicate them, we will never attain the goal of equitably providing high-quality health care in the United States. The Mercy Health Promoters model will not only save valuable medical resources; it will also save precious human lives. If we do not make this a priority now, everyone will pay the price in the future.

CONCLUSION

In conclusion, the Institute of Clinical Bioethics at Saint Joseph's University, alongside the Mercy Health System of Philadelphia, has sought to combat undocumented individuals' healthcare disparities. The Health Promoter Program's expansion has created a new paradigm in modern healthcare that creates an environment seeking to prevent life-threatening conditions and educate the Philadelphia population about their health. The Baby Box Program aims to eliminate the disparity of prenatal health and postpartum health of Philadelphia mothers due to the substantial positive effects of preventing SIDS in Finland. By looking at trends between the use of the Baby Box Program in undocumented families and positive responses from families contacted, it can be inferred through the data that the program effectively helps undocumented and poverty-stricken families caring for a newborn based on the families that stayed connected.

The Mercy Health Promoter Model is a system that can tackle the issues presented in the Triple Aim under the Patient Protection and Affordable Care Act (PPACA). The goal of the PPACA is to reduce medical costs, save health care resources, and most importantly, provide patients access to the healthcare system before developing chronic or end-stage conditions so that they can live fuller, healthier lives. Based on these values, special attention is given to Justice and beneficence's principles by highlighting the values of equal opportunities and care for all individuals. The Principle of Justice highlights the values of fair and equal resources distributed to all individuals. In contrast, the Principle of Beneficence highlights the obligation and responsibility to prevent, remove, or minimize harm and risk to others and promote and enhance their good. The Institute of Clinical Bioethics and the Mercy Health System uses these principles to create a sustainable and accessible way to receive prenatal care for the Philadelphia population. Thus, this preventative and accessible health care method creates an eminent standard for health care facilities across the globe to provide equal care for vulnerable populations.

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