RESEARCH ARTICLE

Advancing Health Equity: A Safety Net Hospital Perspective

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One doesn't ask of one who suffers: What is your country and what is your religion? One merely says, you suffer, this is enough for me. You belong to me and I shall help you.
- Louis Pasteur, quoted on a sculpture memorial at Cook County Hospital, Chicago

ABSTRACT

Equitable care has been recognized as one of the six core components of quality for over two decades, yet scant attention has been paid to understand and address healthcare disparities in the US. There is long-standing evidence of substantial health disparities and poor health outcomes along race, ethnicity and income levels in the US. The COVID-19 pandemic both exacerbated and exposed these inequities and catalyzed a national imperative to achieve equitable healthcare. The objective of this article is to provide a case study of a resource-challenged safety net hospital's journey to advance health equity in Chicago. Humboldt Park Health (HPH) is a 200-bed independent community teaching hospital located on the West side of Chicago serving a multiracial, multilingual and socioeconomically disadvantaged population. Our journey started with the formation of a multidisciplinary health equity committee in 2021, reporting to the Board of Trustees, that was charged with formulating a strategy, developing an evidence-based framework and priorities for action, and implementing the action plan. We addressed four groups of stakeholders: our patients, our people, our organization, and our community. Our actions to advance equity have included (a) collection of patients' demographic data such as race, ethnicity, language, sexual orientation, and gender identity; (b) assessment of social determinants of health (SDOH) along with connecting patients with social services; (c) the development of health disparities dashboards for various ambulatory preventive measures for stratification of quality data along race, ethnicity and language; (d) focus on LGBTQ+ community's access to well-informed and sensitivity-trained behavioral health service providers, and (e) organization-wide training to embed the concepts of diversity, equity and inclusivity in the fabric of the organization. Other initiatives include the building of a community wellness center and a 100-unit affordable housing complex in the community. Digital health equity is an important domain that is being addressed by the launch of a patient portal to empower patients by providing them access to their information, and remote patient monitoring solutions. The next phase of our work involves evaluation studies to understand the impact of our interventions on health disparities and outcomes in our community.

Keywords: health equity, social determinants of health, health outcomes, health disparities, US healthcare, quality of care

INTRODUCTION

In 2001, the National Academy of Medicine (then called the Institute of Medicine) published a report titled *Crossing the Quality Chasm* that delineated "Six Aims for Improvement" for health care: safe, effective, efficient, timely, patient-centered, and equitable [1]. Over the last two decades, meaningful progress has been made on five of the six aims; however, there has been a lack of widespread attention to achieving equitable care. This case study provides a report of a resource-challenged safety net hospital's journey to advance health equity on the West side of Chicago. It also provides an overview of the substantial evidence of inequitable care and outcomes along race, ethnicity and income levels in the US. The objective of this case study is to provide readers a usable construct for developing a strategy and practical steps in their quest toward a more equitable healthcare for their communities.

Understanding Core Concepts

The following is a brief explanation of various terms in this context:

Social determinants of health (SDOH) are defined by the World Health Organization (WHO) [2] as "the circumstances in which people are born, grow up, live, work and age, and the systems put in place to deal with illness. These circumstances are in turn shaped by a wider set of forces: economics, social policies, and politics".

Healthy People 2030, an initiative of the US Department of Health and Human Services that provides 10-year, measurable public health objectives and tools to help track progress toward achieving them, defines **SDOH**[3] as "the conditions in the environments where people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks."

Health disparity is defined in a white paper by the Institute for Healthcare Improvement (IHI) [4] as "the difference in health outcomes between groups within a population. This is slightly different from health inequity". Health disparity denotes differences, whether unjust or not. **Health inequity**, on the other hand, denotes differences in health outcomes that are systematic, avoidable and unjust [4].

Healthy People 2030 defines a **health disparity**[5] as "a particular type of health difference that is closely linked with social, economic, and/or environmental disadvantage". The Centers for Disease Control and Prevention (CDC) identifies **health disparities**[6] as "preventable differences in the burden of disease, injury, violence or opportunities to achieve optimal health that are experienced by socially disadvantaged populations."

Healthy People 2030 defines **health equity**[5] as "the attainment of the highest level of health for all people. Achieving health equity requires valuing everyone equally with focused and ongoing societal efforts to address avoidable inequalities, historical and contemporary injustices, and the elimination of health and health care disparities."

It is important to note that health and healthcare disparities are often viewed through the lens of race and ethnicity, but they occur across a broad range of variables such as socioeconomic status, age, language, gender, disability status, gender identity and sexual orientation.

Evidence for Health Disparities

Let's start with the 2022 National Healthcare Quality and Disparities report[7] by the Agency for Healthcare Research and Quality, a Congressionally mandated summary of health and healthcare delivery status in the United States. The report finds that life expectancy in the US decreased for the first time in 2020 due to COVID-19. The decline in life expectancy was greater for Hispanic and non-Hispanic Black groups than for non-Hispanic White groups, thus widening a long-existing health disparity among these groups. Additionally, the decline in life expectancy was greater in the US than in comparable industrialized countries, thus widening a gap in life expectancy that had been growing since the 1980s. Compared to other industrialized nations, the United States has worse maternal health outcomes for multiple measures, as well as considerable racial disparities for those measures. The report also provides detailed data and trends on various disparities for groups by race, ethnicity, income, insurance status, and residence location. Some of the indicator for which significant disparities exist across one or more groups include: hypertension control (140/90 mmHg) in adult patients, infant mortality and low birth weight, maternal morbidity, child and adolescent mental health, substance use disorders, access to care, patient safety measures, person-centered care, and care coordination. The report concludes that SDOHs may have a stronger influence on the population's health and well-being than services delivered by practitioners and healthcare delivery organizations.

Sadly, the problem of racial and ethnic disparities is not new. Life expectancy for black Americans has lagged behind those of white Americans since 1950. Even with improvements, life expectancy of black Americans in 2010 was equal of that of white Americans in 1980 – a gap of 30 years[8].

Health disparities also exist along income levels. Compared to households with annual incomes greater than $115,000, households with lower incomes have a higher relative risk of mortality, which increases with decreasing income[9]. There are also substantial variations within neighborhoods in the same city. A recent article in the New England Journal of Medicine refers to the 16-year life-expectancy gap between Chicago's West Side, a low-income neighborhood versus the Loop, an affluent one[10].

There is substantial financial burden associated with health disparities. It is estimated that racial disparities cost the U.S. an estimated $93B in excess medical costs and $42B in lost productivity per year, in addition to economic losses due to premature deaths[11].

On international comparison, America's health outcomes are generally worse on many measures including life expectancy at birth, infant mortality, diabetes, safety during childbirth and heart attack mortality[12]. This is particularly troubling since the U.S. per capita healthcare spending at $12,318 is the highest among OECD (Organisation for Economic Co-operation and Development) countries at twice the average of other wealthy countries at $5,829[13]. A 2007 article in the New England Journal of Medicine[14] reported the US ranking among 29 OECD countries for various quality measures as the following: infant mortality – 25th, maternal mortality – 22nd, life expectancy from birth – 22nd, life expectancy from age 65 – 10th.

Part of the problem lies in spending on social care versus healthcare. Compared to other developed nations, US spends more on healthcare and less on social care[15]. Evidence suggests that health care's proportional contribution to premature death is only approximately 10 percent, with the remainder due to multiple, non-medical determinants: behaviors (40 percent); genetic predisposition (30 percent); social circumstances such as employment, housing, transportation, and poverty (15 percent); and environmental exposure (5 percent)[14]. Therefore, this disproportionately lower spending on social care likely contributes to America's worse ranking on health outcomes.

COVID-19 and Health Disparities

Throughout the course of the COVID-19 pandemic in the US, there have been striking racial and ethnic disparities in COVID-19 infection rates, morbidity, and mortality[16,17]. Black patients have been found to contract COVID-19 at higher rates and are more likely to die from the disease. In Chicago, about 50% of COVID-19 cases and 70% of COVID-19 deaths occurred in Black individuals, although they only make up 30% of the population. The same trends have been found nationally[18]. A study at Johns Hopkins University found that the infection rate in the 131 predominantly Black counties in the U.S. is more than 3-fold higher than that in predominantly white counties[19]. Hispanic patients, too, have been found to have a significantly higher death rate after contracting COVID-19 compared to non-Hispanic individuals[17].

The incontrovertible evidence of disproportionately higher impact of COVID-19 on minorities coupled with a movement toward social justice[20] has kindled a national reckoning on health inequities. Many health systems now have health equity as part of their strategy and recently The Joint Commission, the most prominent healthcare accreditation organization in the US, announced that health equity-related elements will become part of its accreditation process[21].

BACKGROUND AND SETTING

Founded in 1894, Humboldt Park Health (HPH) is a 200-bed independent community teaching hospital located on the West side of Chicago serving a multiracial, multilingual and socioeconomically disadvantaged population. HPH serves as one of Chicago's "Safety Net Hospitals," defined by the Institute of Medicine as providers that deliver a significant level of health care and other health-related services to patients with no insurance or with Medicaid, and to other vulnerable populations (5). HPH's service lines include inpatient acute care, emergency care, diagnostic services, and primary care as well as a full-service professional building, and three community clinics. Ever responsive to the critical needs of its communities, the hospital also offers innovative services such as pediatric mobile health services, a comprehensive diabetes center, and medical stabilization unit for substance use disorders. These programs address key local issues such as access to pediatric care, high rates of diabetes, and the opioid use disorder crisis.

In keeping with the demographics of the local community, approximately 50 percent of HPH's patients identify as Latinx and another 34 percent as Black/African-American. According to Sinai Urban Health Institute (SUHI), 18 percent of Humboldt Park adults are unemployed, 31 percent lack a high school degree, and the median household income is $12,000 less than in Chicago[22]. Humboldt Park and its surrounding communities face disproportionately high rates of numerous health conditions compared to the rest of Chicago, from higher rates of adult obesity, smoking, asthma, and diabetes to higher rates of death from opioid overdose, heart disease, cancer, and infant

mortality. Yet with nearly 22 percent of Humboldt Park residents lacking insurance (compared to 9.8% of Chicagoans as a whole), access to care to prevent and treat these conditions can be a challenge.

Besides other COVID-related disparities, we observed a significantly higher COVID positivity rate compared with Chicago city throughout the course of the pandemic (Figure 1). Community studies show that 49 percent of Humboldt Park households receive Supplemental Nutrition Assistance Program (SNAP) benefits and 30 percent access emergency food. Yet despite these supports,

46 percent of area households remain food insecure, compared with 13 percent nationwide. The COVID-19 pandemic substantially worsened the situation. Analysis from Northwestern University's Institute for Policy Research suggests that food insecurity in April 2020 doubled overall and tripled among those with children. Approximately 42 percent of Hispanic respondents with children lacked resources to purchase food when it ran out; when the question was phrased as being "worried" about not being able to buy food when it ran out, this increased to 52 percent[23].

COVID-19 Positivity Rate
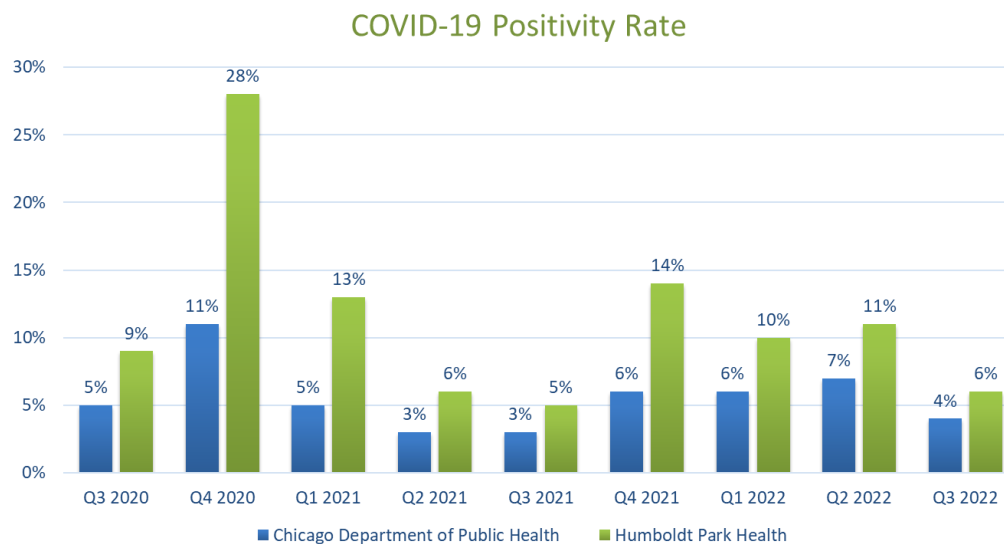
Figure 1: COVID-19 positivity rate at Humboldt Park Health compared to the City of Chicago

Deeply disquieted by the exacerbation of preexisting disparities by COVID-19, in January 2021, our organization changed its historic name, Norwegian American Hospital, to the present name Humboldt Park Health to acknowledge the changed demographics of the community and added the tagline "Advancing Health Equity" to affirm our commitment to addressing health disparities in our community. At the same time, we constituted a Health Equity Committee to formulate a strategy, develop an evidence-based framework and priorities for action to carry out our vision to advance health equity.

Health Equity Committee

Formed in January 2021, this multidisciplinary committee consists of 17 members including representation from nursing, quality, social work, nutrition, human resources, information

technology, behavioral Health, physicians, registration and scheduling, ambulatory services and is chaired by the Chief Medical Officer (the author). The committee also includes trainees including residents and medical students. With our foundational vision that equity is a core dimension of quality, in July 2021, health equity committee was incorporated in the quality governance structure of HPH, reporting to the Board of Trustees.

We started with the review of evidence and seminal articles to formulate our strategy[4,24,25]. Drawing from the state-wide work of the Illinois Hospital Association, we identified four groups of stakeholders for our work: our people, our patients, our organization, and our community[24]. After deliberation and consensus by the committee and approval by the Board of Trustees, a framework of priorities and actions was developed (Figure 2).

Figure 2: Framework for Advancing Health Equity at Humboldt Park Health

ACTIONS TO ADVANCE HEALTH EQUITY

Our goal is to weave health equity in the very fabric of the organization. To this end, we updated our mission, vision and values statements to incorporate health equity. We engaged a training organization to provide organization-wide interactive training for all staff, physicians, and board members. The scenario-based curriculum broadly consisted of understanding the basic concepts of DEI (diversity, equity and inclusivity) and practical strategies to incorporate these concepts in interactions with patients as well as staff.

A foundational step in our health equity plan was to start collecting data on key demographic attributes of patients including race, ethnicity and language (REaL), and sexual orientation / gender identity (SOGI) to understand our community. For this, we created standardized data collection fields, as defined by Centers for Medicare and Medicaid Services (CMS), in our electronic health record (EHR) (Figure 3). This seemingly simple task of asking patients their REaL / SOGI attributes is quite challenging as many patients do not identify with one or the other race or ethnicity; some are hesitant to answer this question; and some have fear that it may have something to do with their immigration status. Both staff and patients are quite uncomfortable regarding SOGI questionnaire and many times, this field is left blank or filled as 'unknown'. This work requires ongoing training of the registration staff and overcoming significant hesitation on part of staff as well as patients. Other considerations include issues of privacy as there are other patients within earshot in most registration areas. To address this, we use a combined approach of using digital tablets with questions in English and Spanish so patients can fill out the forms themselves or staff-driven information gathering, based on patient preference.

Figure 3: Demographic data collection fields in electronic health record (EHR) for race, ethnicity, language (REaL) and, sexual orientation, gender identity (SOGI)

To understand the prevalence of SDOH in our community, we built an SDOH screening questionnaire for 5 items in the EHR: housing, food insecurity, transportation, utilities, and interpersonal safety (Figure 4). We adopted the language from the social needs screening tool by the American Academy of Family Physicians[26]. Social workers on medical-surgical floors, along with medical students, conduct the SDOH assessment and connect patients with appropriate resources. The challenges in this domain include: training of staff so that they perform the assessment in a respectful manner; overcoming patients' sense of fear and shame in acknowledging the existence of problems such as food insecurity or housing needs; and finding appropriate resources especially related to housing. We use a combination of electronic database e.g. NowPow (https://www.nowpow.com/), a subscription-based service and a curated collection of resources in our community to address the SDOH needs for our patients.

Figure 4: Social determinants of health (SDOH) screening tool in the electronic health record

Over the course of 13 months, (October'21 to November'22), we screened 963 patients on medical surgical ward. Of these, 158 (16.4%) screened positive for one or more SDOH, tested positive for various SDOH. We believe this is a significant underestimation due to the barriers described in the previous paragraph and with further training and experience, our numbers will be a more accurate reflection of the community needs.

Our organization has had a food pantry for the community since 2019. With the onset of the pandemic, we significantly increased our efforts. Over the last 3 years, we have distributed approximately 3600 food bags per year in our community. To address the transport needs, the hospital operates six transport vans, a pediatric mobile van that provides primary pediatric care especially in public schools, and a mobile dental van for primary dental care in the community.
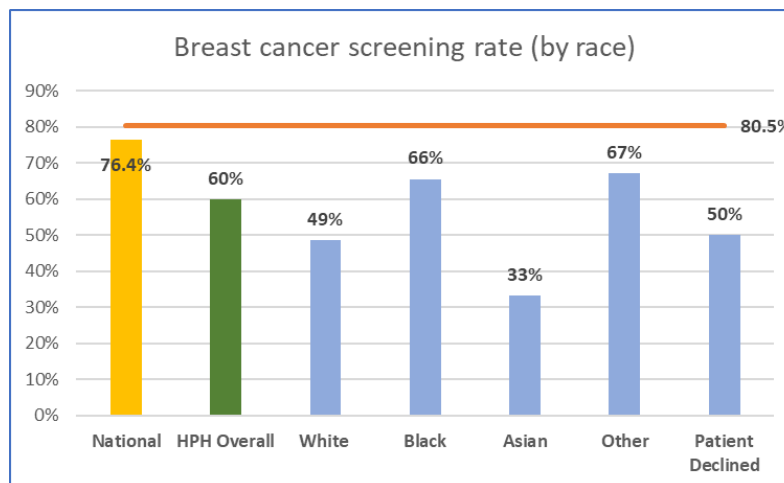
Behavioral health issues are known to be particularly significant in LGBTQ minority youth. made worse by COVID-19. According to a 2022 national survey, 60% of LGBTQ youth who wanted mental health care are not able to get it[27]. To address this need, all staff in our newly launched behavioral health outpatient clinic underwent 16 hours of training to become an LGBTQ+ Affirming Provider. The training consists of the basics of the terminology; communication and establishing safety and trust with patients; current trends in treatment; and treatment approaches and strategies for various phases of acceptance. We have observed that LGBTQ+ youth are hesitant to openly acknowledge their identity at the clinic for the fear of becoming stigmatized in this close-knit community.
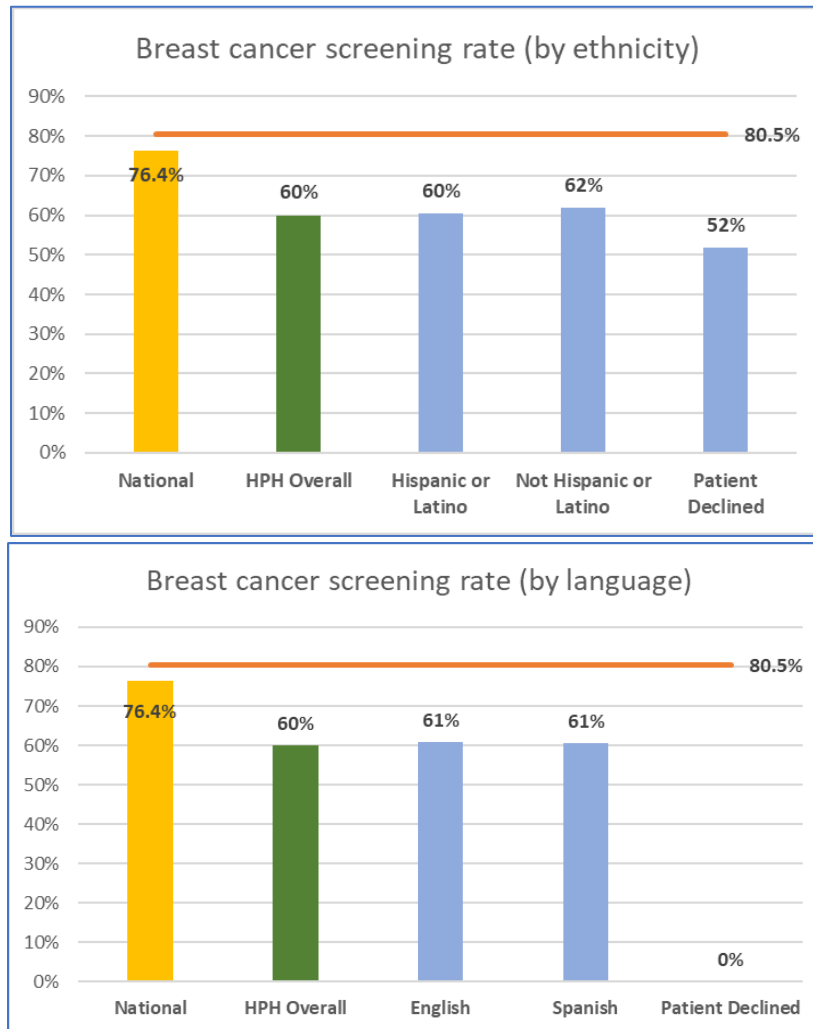
We created health disparities dashboards to stratify our performance on selected preventive measures across race, ethnicity and language. This is described in details in the next section.

HEALTH DISPARITIES DASHBOARD

We utilized the Healthy People 2030 Framework[28] along with our community health needs assessment (that is conducted every three years) to guide the selection of quality measures for stratification. We selected three ambulatory quality indicators to stratify our performance across race, ethnicity and language – breast cancer screening, cervical cancer screening and adults with diabetes who have HbA1C value >9. We utilized automated reports from the EHR for a 12-month period, from November 2021 to October 2022, to evaluate our performance.

HPH's overall performance for all groups was as the following: breast cancer screening rate – 60%, cervical cancer screening rate – 67%, adults with diabetes with HbA1C value >9 – 14%. For comparison, Healthy People 2030 benchmarks for national performance are as the following: breast cancer screening - 76.4% (2019 data) with a target of 80.5%; cervical cancer screening - 80.5% (2018 data) with a target of 84.3%; and for adults with diabetes with HbA1C value >9 - 18.7% (2013-2016) with a target of 11.6%. Figures 5, 6, and 7 demonstrate our overall performance against the benchmarks and target as well as the stratification by race, ethnicity and preferred language subgroups. The breakdown and sample size for various measures are in Table 1.

Breast cancer screening rate (by race)

National 76.4%, HPH Overall 60%, White 49%, Black 66%, Asian 33%, Other 67%, Patient Declined 50%. Target line: 80.5%
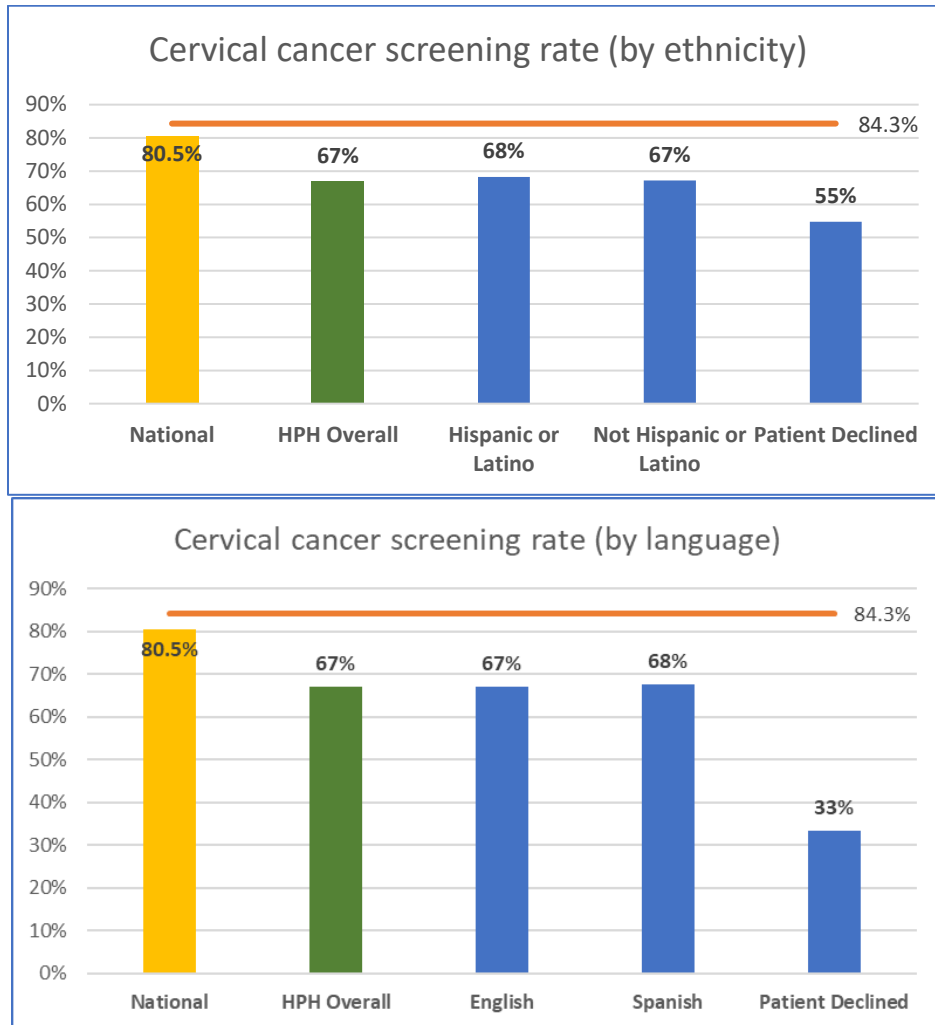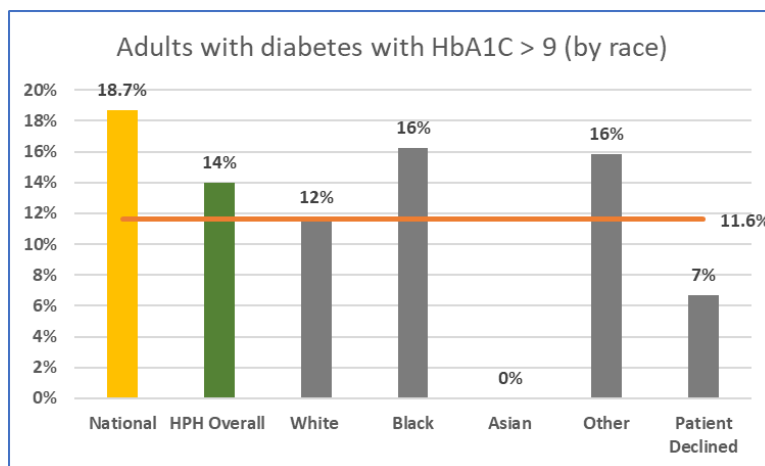
Figure 5: Breast cancer screening rates, stratified by race, ethnicity and language. The yellow bar represents the national rate as in Healthy People 2030 data. The green bar represents the non-stratified performance of Humboldt Park Health. The orange line represents the target as in Healthy People 2030.

Cervical cancer screening rate (by ethnicity)

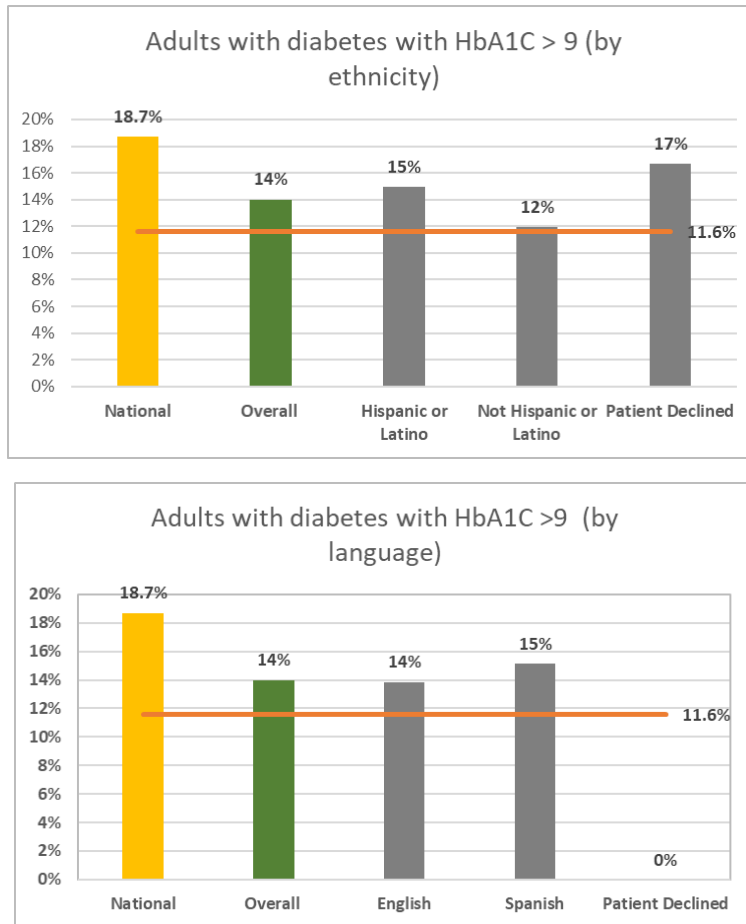**Cervical cancer screening rate (by language)**
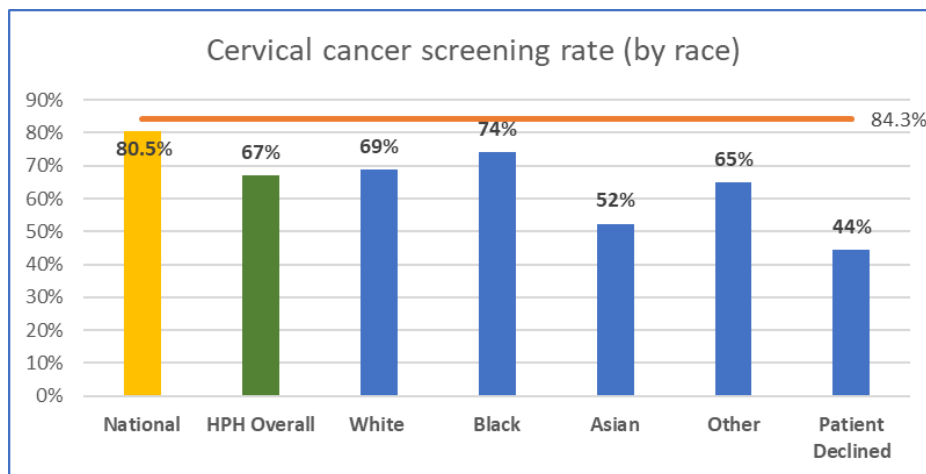
Figure 6: Cervical cancer screening rates, stratified by race, ethnicity and language. The yellow bar represents the national rate as in Healthy People 2030 data. The green bar represents non-stratified performance of Humboldt Park Health. The orange line represents the target as in Healthy People 2030.

Adults with diabetes with HbA1C > 9 (by race)

Figure 7: Adults with diabetes with HbA1C >9, stratified by race, ethnicity and language. The yellow bar represents the national rate as in Healthy People 2030 data. The green bar represents non-stratified performance of Humboldt Park Health. The orange line represents the target as in Healthy People 2030. For this measure, lower rates signify better performance.

Table 1: Sample size and number of patients in each category for cervical cancer screening, breast cancer screening and adults with diabetes with HbA1C >9. In the race category for all three measures, the "Other" is represented mostly by the Latinx population.

CERVICAL CANCER SCREENING	n = 901	BREAST CANCER SCREENING	n=306	ADULTS WITH DIABETES HbA1C >9	n = 388
RACE		**RACE**		**RACE**	
White	209	White	76	White	111
Black	243	Black	93	Black	80
Asian	21	Asian	6	Asian	5
Other	374	Other	107	Other	177
Patient Declined	54	Patient Declined	24	Patient Declined	15
ETHNICITY		**ETHNICITY**		**ETHNICITY**	
Hispanic or Latino	457	Hispanic or Latino	164	Hispanic or Latino	261
Not Hispanic or Latino	372	Not Hispanic or Latino	115	Not Hispanic or Latino	109
Patient Declined	72	Patient Declined	27	Patient Declined	18
LANGUAGE		**LANGUAGE**		**LANGUAGE**	
English	754	English	227	English	267
Spanish	136	Spanish	76	Spanish	119
Patient Declined	11	Patient Declined	3	Patient Declined	2

Overall, HPH substantially underperforms compared to national benchmarks on both breast cancer and cervical cancer screening but not on HbA1C >9%. We reviewed a counter measure for the same time period – adult patients with diabetes with HbA1C <7. Our overall performance is 53% (204/388). Since Healthy People 2030 benchmark is not available for this measure, we utilized National Committee for Quality Assurance (NCQA)[29]; their national rates are from 34.7% (for

Medicaid population) to 38.4% (commercial insurance).

We did observe an apparent lack of glaring disparities for the three selected measures. It may be attributable to our highly diverse workforce with a similar language and cultural background as our patients. Of note, all of these are process measures. We are planning further evaluation to extend this analysis to additional ambulatory measures including outcomes measures as well as inpatient measures.

THE ROAD AHEAD

We are working on two ambitious projects to directly address SDOH. The first is the building of a $25 million community wellness center with facilities for fitness, rehabilitation, nutrition, and educational programs, primarily funded by public grants, to provide free to low-cost facilities for the community as well as staff. The second is the building of a 100-unit affordable housing project to address the impact of growing gentrification on the long-term residents of the community[30]. Research has found that housing interventions for low-income people improve health outcomes and decrease costs via four pathways that connect housing and health: stability, quality and safety, affordability and better neighborhood[31].

The Joint Commission, one of the leading accreditation organizations, has taken a leading role in incorporating health equity in its hospital accreditation process by adding new standards as of January 2023 [21]. These include items such as 'make healthcare equity a leader-driven priority', 'assess health-related social needs', 'use data to identify disparities across patient groups', 'prioritize, plan and take action', and 'monitor health care equity progress' etc. We plan to add more SDOHs to the EHR screening tool for

evaluation and mitigation – assessment of health literacy and the ease of access to prescription medications these have been identified by the Joint Commission as an important barrier to quality outcomes.

The next phase in our strategy is focusing in advancing *digital* health equity defined as "equitable access to digital healthcare, equitable outcomes from and experience with digital healthcare, and equity in the design of digital health solution[32]". To this end, registration staff are trained as 'digital navigators' to empower patients by promoting access to their information on the patient portal. The Deloitte 2018 Survey of US Health Care Consumers showed that most adult Medicaid beneficiaries own mobile technologies, use them for a variety of health purposes, and are interested in trying new digital health applications in the future[33]. The pattern among our HPH patients over the last two years also demonstrated a 4 times higher utilization of smartphones for accessing patient portal compared to desktop computers. Our priorities for advancing digital equity include improving access to broadband, improving digital literacy, and deployment of technology-enabled chronic disease management.

CONCLUSION

In summary, we have demonstrated a case study in executing a health equity strategy into an effective action plan for a diverse community in Chicago despite limited resources. We now have to ensure our work translates into improving outcomes for this community.

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