CHIA
CHRONICLES OF HEALTH IMPACT ASSESSMENT
Improving Community Health Through Health Impact Assessment

November 2023 VOLUME 8 ISSUE 1

LETTER FROM THE EDITOR

Welcome to the Fall 2023 CHIA issue.

This issue has an article about using an HIA to improve the built environment to improve activity, decrease bike injuries and decrease obesity in Nevada. Another article used Snapchat and Uber's social media platforms to examine the health impact on lifestyle behaviors and promoting healthy choices. We also included the Farewell message with permission from Ruth Lindberg, the Director of the Health Impact Project at Pew Charitable Trust.

I would also like to highlight that the Robert Wood Johnson Foundation and Pew Charitable Trust HIA database has now moved to the Institute for People, Place and Possibility through Community Commons. Access to the database can be found at https://hia.communitycommons.org/.

The website can be used for HIA and HiAP development. It includes Health Notes, Briefs, Visualizations and the Mapping of Health Impact Assessments. You can browse the HIA by vital conditions, priority populations and other factors.

We would like to encourage those doing HIAs and HiAP work to please consider submitting an article to share your findings, processes and methods. Thank you for all that you do to promote health as a part of community decision making and policy development.

Sincerely,

Cynthia Stone, DrPH, RN
Chronicles of Health Impact Assessment Journal Editor

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LETTER FROM THE SOCIETY OF PRACTITIONERS OF HEALTH IMPACT ASSESSMENT (SOPHIA)

Dear Readers,

As the president of the Society of Practitioners of Health Impact Assessment or SOPHIA, I am excited to introduce this issue of CHIA. SOPHIA is dedicated to promoting the practice and the practitioners of HIA and Health in All Policies (HiAP). Our partnership with CHIA is one of the ways we provide the connective tissue across the wide array of organizations who lead HIA and HiAP work. We also host monthly webinars and a virtual practitioner workshop in December every year. The workshop, which takes place December 5 and 6 will feature a presentation on an international research effort to understand HIA practice, the introduction of the new HiAP screening tool created by the SOPHIA HiAP work group and the latest in using Health Notes as a policy lever.

In April of next year, we will also sponsor our in-person practitioner workshop in Washington, DC. My keynote address, titled, "Cumulative Impact Assessment is HIA 2.0," will explore what is new and different in this emerging practice and the role of practitioners in shaping minimum elements and practice standards for CIA. If you want to learn more about CIA, we will be hosting a track on the second day of the conference featuring thought leaders like Charles Lee of the US EPA's Office of Environmental Justice and External Civil Rights. We will also have lightning talks and roundtables on day one and a pre-conference option for an HIA 101 class, so please watch the events page on the SOPHIA website.

This edition of CHIA contains two articles that explore health impacts although only one uses the formal HIA process. The first article discusses the process and outcomes of a case study from the Southern Nevada Health District and what we can all learn from their work. The second article focuses on the product design process and how it can be influenced to be more health promoting. Both articles focus on changes to policy and design that influence health outcomes. I hope you enjoy these articles and can use your takeaways to improve your practice.

Sandra Whitehead
President, SOPHIA

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ABOUT THE JOURNAL

A Health Impact Assessment (HIA) is a systematic process that uses a variety of data sources and analytic methods and input from community stakeholders to determine the potential health effects of a proposed policy, program, or plan. HIAs provide recommendations to decision makers on how to adjust the policy or program to minimize negative health effects and increase potential positive health benefits.

The editorial board and staff of CHIA strive to give expression to health impact assessment research and scholarship while serving the public health profession.

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ENHANCING HEALTH THROUGH BUILT ENVIRONMENT IMPROVEMENT: A SOUTHERN NEVADA HEALTH IMPACT ASSESSMENT CASE STUDY

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Abstract

Background: Health Impact Assessment (HIA) is a public health tool to evaluate how choices made outside the health sector can affect health. HIAs are utilized in transportation, housing, planning, and other fields. Since the built environment can impact community health outcomes, including physical activity rates, injuries, and overweight and obesity, an interdisciplinary team composed of public health, planning, transportation, and land use professionals conducted an HIA in Las Vegas, Nevada.

Methods: The HIA consisted of (1) screening, (2) scoping, (3) assessment, (4) recommendations, (5) reporting, and (6) monitoring and evaluation. It examined proposed physical improvements to a 0.66 mile stretch of a major arterial roadway in the City of Las Vegas where nearby residents experience many health inequities. Collection and analysis of land use and survey data, analysis of secondary data, and literature reviews were completed to predict potential health effects produced by built environment changes. Stakeholder feedback informed each HIA step.

Results: The HIA generated recommendations to improve physical activity, reduce pedestrian and bicyclist injury rates, and decrease obesity and overweight prevalence, by presenting "good," "better," and "best" physical infrastructure improvements. The process and resulting recommendations enhanced collaboration among health and non-health sectors.

Conclusions: Data and analysis revealed that the proposed changes could improve walkability and bikeability and reduce pedestrian and bicyclist injury. By encouraging active transportation through bicycling and walking, the plan could, over time, contribute to reduced overweight and obesity. The HIA facilitated inter-sector cross collaboration and the integration of health into future decision-making.

RICHARD M. FAIRBANKS SCHOOL OF PUBLIC HEALTH

THE SOCIETY OF PRACTITIONERS OF HEALTH IMPACT ASSESSMENT SOPHIA

Introduction

Connections between land use and health are well documented. One prominent area of research is the use of urban planning and infrastructure changes to increase rates of active transportation within neighborhoods. Enhancing neighborhood walkability and bikeability can increase rates of physical activity through exercise (physical activity for physical fitness) and active transport (physical activity for transportation) (Grasser et al., 2013; Prins et al., 2016; Sallis et al., 2016). The relationship between regular physical activity and human health is likewise well documented (Centers for Disease Control and Prevention [CDC], 2022b). Benefits of physical activity include improved cognition and thinking, weight management, reduced chronic disease risk, strengthened muscles and bones, and improved quality of life (CDC, 2020b). Unfortunately, only about half of U.S. adults engage in the recommended amounts of aerobic physical activity (CDC, 2020a). And about $117 billion are spent annually on healthcare costs associated with physical inactivity (CDC, 2020b).

Prioritizing physical activity in a community can have economic, safety, and workforce benefits (CDC, 2022a). Walkable communities can enhance safety for all users (CDC, 2020b; Reynolds et al., 2009). Some of the most common measures of neighborhood walkability include net residential density, street connectivity, land use mix, and the proportion of retail land-area to retail-building-floor area (also known as Retail Floor Area Ratio) (Adams et al., 2015; Frank et al., 2010; Grasser et al., 2013; Sallis et al., 2016; Wei et al., 2016). In addition, availability of sidewalks, overall aesthetics, and users' perceptions of these features, including safety, are also related to walking and rates of physical activity (Barnett et al., 2017). Similarly, bikeable communities are associated with increased rates of bicycling (Winters et al., 2016), and certain types of infrastructure improve safety (Reynolds et al., 2009; DiGioia et al., 2017; Pucher & Buehler, 2016).

It must be acknowledged that active transport may increase crash risk in terms of absolute numbers, as "[t]he more a person travels, the more they are exposed to the potential risk of a traffic-related injury or death" (Merlin et al., 2020). Bicyclists and pedestrians are vulnerable road users and make up a disproportionate share of crashes (The League of American Bicyclists, 2018). There were 6,516 pedestrian fatalities and 938 bicyclist fatalities in the U.S. in 2020 (National Center for Statistics and Analysis [NCSA], 2022). Pedestrian fatalities from motor vehicle crashes increased by 46% between 2011 and 2020 while bicyclist fatalities increased by 38% in the same period (National Highway Traffic Safety Administration, n.d.). Improving pedestrian and bicyclist infrastructure can substantially reduce these fatalities (Schneider et al., 2017; United States Department of Transportation, 2014).

Although land use and health are linked, integrating health into planning and design decisions remains a challenge (Nieuwenhuijsen et al., 2020). Health Impact Assessment (HIA) is a tool that can help identify and inform health implications of choices, plans, and projects that traditionally do not consider health (National Research Council [NRC], 2011; CDC, 2016; The Pew Charitable Trusts, n.d.). Regular use of HIAs could

lead to more consistent integration of health into decisions made by other sectors and better prioritization of health equity (Morley et al., 2016). Land use decisions are especially conducive to HIAs because HIAs can enhance collaboration between the health and planning sectors, improve land use plans, and catalyze more systematic assessments of health in land use choices (Wernham, 2011).

An HIA on proposed built environment improvements along a 0.66 mile stretch of a major arterial roadway was conducted in the City of Las Vegas. Residents near the stretch exhibited various health disparities. The primary aim of the HIA was to advance the integration of health and equity into regional land use decisions through analysis and collaboration. This paper provides an adapted report of the HIA and its findings in the context of HIA and Health in All Policies work.

Methods

This HIA consisted of all six steps: (1) screening, (2) scoping, (3) assessment, (4) recommendations, (5) reporting, and (6) monitoring and evaluation, along with stakeholder engagement throughout (NRC, 2011; The Pew Charitable Trusts, 2014). A Research Team (RT) consisting of University of Nevada, Las Vegas School of Public Health faculty and students partnered with a Working Group (WG) representing the Southern Nevada Health District (SNHD); City of Las Vegas – Department of Public Works (CLV DPW); Nevada Minority Health & Equity Coalition; the Regional Transportation Commission of Southern Nevada (RTC); and the Nevada Institute for Children's Research & Policy to complete the HIA. The HIA was supported by a Racial and Ethnic Approaches to Community Health Grant from the CDC, which was awarded to the SNHD.

In screening meetings, the RT and WG identified land improvement projects that were in the planning stage that could benefit from the use of HIA. Screening discussions of the RT and WG also generated selection criteria for a proposed project. The project had to (1) be within a Las Vegas ZIP Code with residents who experience health disparities, (2) be in the appropriate phase of planning so that recommendations could be considered, (3) contain built environment features studied in literature, (4) potentially impact the health determinants and outcomes of interest (5) potentially impact connectivity to schools, parks, and transit, (6) highlight existing processes at CLV DPW into which health considerations could be integrated, (7) be executable with available time and resources, and (8) serve as a case study to build a project scoping tool (PST) to bring health concerns into future land use decisions.

The RT and WG chose the Charleston Medical District Improvement Plan because it met all of these selection criteria. This project was a 0.66 mile stretch of a major East-West arterial road in the Medical District within the City of Las Vegas. This area is home to numerous medical facilities, including a major public hospital, a dental school, medical school facilities, and a mix of commercial, retail, and other land uses. It also has a relatively high prevalence of pedestrian activity. The proposed improvement plan at the time included adding bicycle lanes, enhanced crosswalks, pedestrian activated beacons, signage, trees, and landscaping; narrowing vehicular travel

lanes; reducing speed limits; and acquiring rights of way to improve and widen existing sidewalks.

The HIA examined demographic and health-related data from adjacent Census Tracts. The residents of these adjacent Tracts are at higher risk for negative health outcomes compared to many other parts of Southern Nevada (Healthy Southern Nevada, 2022).

The activities associated with each of the six HIA steps are summarized in **Table 1**.

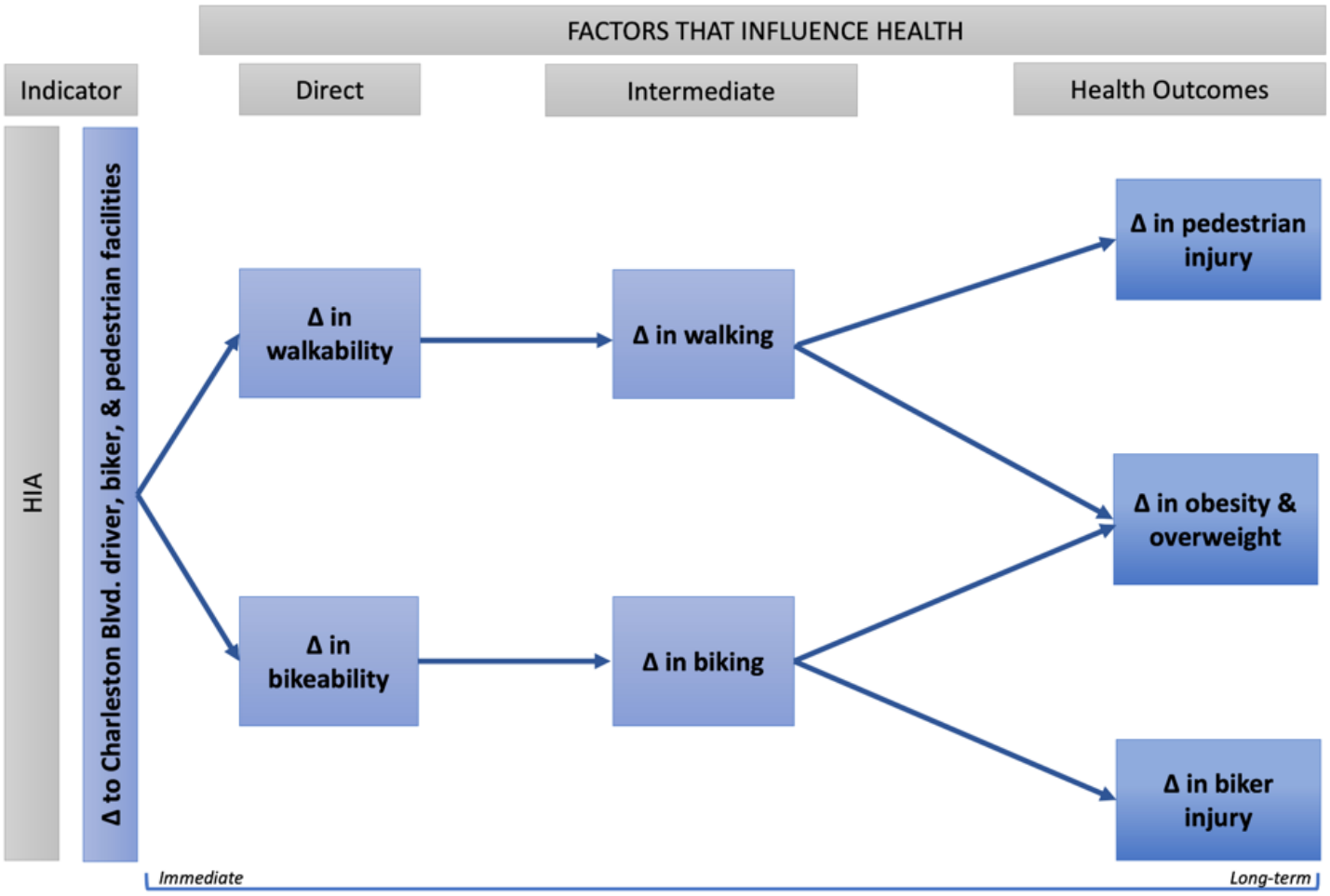
Table 1. Summary of Health Impact Assessment Steps

Screening	The RT and WG met to determine selection criteria and choose an appropriate project from numerous improvement plans that were in planning stages.
Scoping	The RT and WG selected HIA goals and objectives and key health concerns to examine. The HIA aimed to reveal the baseline conditions of the area and then determine potential impacts if certain recommendations were implemented. Five key focus areas identified were: 1) health equity, 2) walkability, 3) bikeability, 4) pedestrian and bicyclist injury, and 5) overweight and obesity. The RT and WG crafted research questions to guide assessment of direct, intermediate, and downstream health outcomes in these focus areas. See **Figure 1** for the pathway diagram linking the proposed decisions to health outcomes.
Assessment	The assessment was a three-step process: 1. *Examine baseline conditions of the Census Tracts immediately adjacent to the project corridor based on the key focus areas.* a. Health equity & obesity/overweight: Secondary data from the American Community Survey (ACS) and the City Health Dashboard were used to examine socio-demographic, economic, and health factors, including median household income, adult physical inactivity, obesity, and health insurance status (United States Census Bureau [USCB], n.d.; City Health Dashboard, 2019). b. Walkability & Walking: Walkability was assessed through primary data on five segments of the project corridor using the 54-item Microscale Audit of Pedestrian Streetscapes (MAPS), Abbreviated Version (Cain et al., 2017). Walking rates were assessed using secondary data from the CLV DPW, RTC, and the ACS commuting database (USCB, 2017). c. Bikeability & Bicycling: Bikeability was assessed by evaluating bicycle infrastructure using the Bicycle Level of Traffic Stress secondary data metric (Alta Planning and Design, 2017) and through primary data using the Active Neighborhood Checklist (Active Neighborhood Checklist, 2011). Bicycling rates were assessed using secondary data: the ACS commuting database (USCB, 2017) and RTC information on the number of bicycles brought onto buses that traverse the project corridor. d. Pedestrian & Bicyclist Injury: Injury rates were determined utilizing secondary motor vehicle crash data from the Nevada Department of Transportation. 2. *Conduct an intercept survey of pedestrians in the area during varying times of the day over three weeks in June and July 2019.* Primary data obtained included demographics, reasons users were in the area, primary modes of transportation, perceptions of safety and available infrastructure, and preferences regarding pedestrian and bicycle infrastructure.

Table 1. Summary of Health Impact Assessment Steps (continued)

	3. *Assess project impacts through a series of literature reviews*. The RT searched Google Scholar for relevant systematic reviews and meta-analyses to examine how the proposed built environment features relate to physical activity and downstream health indicators like overweight, obesity, and injury. Sample search terms included walkability, pedestrian, sidewalk, bikeability, bicycle, bicycling, bike lane, speed, injury, traffic, health, built environment, obesity, overweight, and BMI.
Recommendations	The RT used findings from the assessment, WG suggestions, and feedback from a stakeholder input session to develop recommendations to improve the project corridor. The stakeholder session was attended by the RT, WG, and representatives from organizations like the county school district, health-focused community organizations, academia, and the state public health department. It included discussion of the HIA's screening, scoping, and assessment; how to encourage bicycling and walking in the area; community members' involvement in land use decisions; and better connections between the land use and health sectors. Final recommendations were organized into "good," "better," and "best" categories to maximize health outcomes in each focus area but also enhance flexibility and feasibility for project partners.
Reporting	A final report summarizing the HIA and key recommendations was made available to the WG. WG members were asked to share the final report with their partners and networks. The RT also presented the HIA's findings to regional, health-focused community coalitions and to transportation-focused community partners in Spring 2019.
Monitoring & Evaluation	Monitoring: To support continued monitoring of the project area, the RT developed a system of tracking spreadsheets to outline applicable indicators and provide relevant data sources. These spreadsheets were provided to WG partners. They could be used periodically to monitor land use modifications and changes to priority health behaviors and outcomes. As HIA partners developed the PST, they also continued to track land use changes and health indicators in the area. Evaluation: The RT completed a process evaluation through an anonymous survey of the WG and a facilitated face-to-face discussion between the RT and WG. The survey and discussion evaluated the execution of each step of the HIA, the HIA's potential to improve community and cross-sector collaboration, and the opportunities for stakeholders to engage in the HIA process.

Figure 1. Charleston Medical District Pedestrian Improvement Plan Pathway Diagram Linking Proposed Decisions to Health Outcomes



Results

Baseline Conditions

After analyzing available secondary data, the RT found that project area residents were more racially and ethnically diverse than the overall average for the City of Las Vegas. Some adjacent Census Tracts had lower high school graduation rates, higher rates of unemployment, poverty, and uninsured status, and lower median incomes (USCB, n.d.; City Health Dashboard, 2019). Some Census Tracts likewise had higher rates of obesity and chronic health conditions like diabetes and high blood pressure compared to City of Las Vegas and national averages (USCB, n.d.; City Health Dashboard, 2019). Area residents also had higher rates of high-risk health behaviors, including smoking and physical inactivity (City Health Dashboard, 2019). Average life expectancy in all Census Tracts in the project area was well below that of city and national averages (City Health Dashboard, 2019). See **Table 2** for demographic and health-related baseline characteristics for the project area's adjacent Census Tracts.

Table 2. Demographic and Health-Related Baseline Information for Residents in Census Tracts Adjacent to Charleston Corridor, with Comparisons to the City of Las Vegas and the 500-City Average

	Census Tract 2.03 Value (90% confidence interval)	Census Tract 3.01 Value (90% confidence interval)	Census Tract 2.04 Value (90% confidence interval)	City of Las Vegas Value (90% confidence interval)	500-City Average
Social and Economic Factors					
Median Age (years)*	35.3 (30.7-39.9)	37.6 (32.1-43.1)	45.2 (43.6-46.8)	37.4 (37.1-37.7)	-
Education (Population 25 years and over)					
High school graduate or higher*	76.1% (70.3-81.9)	73.9% (68.5-79.3)	84.9% (75.4-94.4)	84% (83.5-84.5)	-
Bachelor's degree or higher*	18.4% (11.8-25)	5.4% (2.5-8.3)	36.7% (24.7-48.7)	23.2 (22.6-23.8)	-
Race & Ethnicity					
White*	52.2% (40.7-63.7)	32.1% (24.2-40.0)	69.7% (56.4-83.0)	62.7% (62.1-63.3)	-
Black or African American*	17.3% (11.1-23.5)	46.4% (39.9-52.9)	3.7% (0.8-6.6)	12.2% (11.8-12.6)	-
American Indian, Alaskan Native*	0.5% (0-1.1)	0.2% (0-0.6)	0.2% (0-0.7)	0.7% (0.6-0.8)	-
Asian*	9.3% (4.4-14.2)	2.6% (1.0-4.2)	18.8% (6.6-31.0)	6.7% (6.4-7.0)	-
Native Hawaiian, Other Pacific Islander*	0.6% (0-1.5)	0.3% (0-0.9)	0.7% (0-2.0)	0.7% (0.6-0.8)	-
Some Other Race*	16.0% (7.0-25.0)	16.0% (9.5-22.5)	3.4% (0-6.8)	12.3% (11.7-12.9)	-
Two or More Races*	4.2% (1.9-6.5)	2.4% (0.4-4.4)	3.5% (0.5-6.5)	4.8% (4.5-5.1)	-
Hispanic*	40.4% (33.4-47.4)	39.9% (33.5-46.3)	23.5% (10.3-36.7)	32.7% (32.2-33.2)	-
Economic Factors					
Children in Poverty	54.5% (37.8-71.3)	47.6% (32.5-62.6)	12.5% (0-32.7)	23.7%	21.4%
Households with Excessive Housing Cost	53% (42.7-63.2)	43% (34.1-52)	34.1% (19.0-42.9)	37.4%	36.3%

Economic Factors					
Median Household Income*	$32,476 (24,069-40,883)	$30,000 (23,586-36,414)	$66,111 (57,137-75,085)	$53,159 (52,282-54,036)	-
Unemployment	16.4% (8.9-23.8)	13.4% (6.8-20.0)	3.8% (0.4-7.1)	8.8%	6.9%
Uninsured	27.8% (20.4-35.3)	31.0% (24.9-37.1)	27.5% (16.0-38.9)	18.1%	12.4%
Below 100% of the Federal Poverty Level*	40.9% (30.5-51.3)	41.0% (32.5-49.5)	11.2% (0-23.2)	16.2% (15.6-16.8)	-
Food Insecurity+	26.7%	27.9%	7.3%	-	-
No Vehicle Access+	23.4%	31.4%	0.0%	-	-
Physical Environment					
Average Daily Concentration of Air Particulate Matter (PM 2.5)	7.7/m^3	7.7/m^3	7.7/m^3	6.9/m^3	8.8/m^3
Walkability Index (2019)	37.4	55	39.3	40.6	41.3
Limited Access to Healthy Foods	96.7% (96.3-97.2)	36.5% (35.0-37.9)	47.0% (44.6-49.5)	57.2%	65.9%
Health Behaviors					
Current Adult Smoking	25.8% (23.9-27.7)	29.5% (27.9-31.1)	15.0% (13.0-17.0)	20.5%	17.2%
Adult Physical Inactivity	37.3% (35.5-39.1)	42.9% (41.5-44.3)	25.9% (23.8-28.0)	29.9%	26.2%
Health Outcomes					
Adults with High Blood Pressure	37.8% (37.1-38.5)	45.8% (45.1-46.5)	37.8% (36.7-38.9)	31.8%	29.6%
Adults with Diabetes	15.0% (14.4-15.6)	19.9% (19.2-20.6)	12.2% (11.4-13.0)	11.2%	10.0%
Average Life Expectancy at Birth in 2015 (years)	71.2 (68.7-73.7)	69.3 (66.8-71.8)	65.1 (59.4-70.8)	77.4	79.1
Adult Obesity	33.5% (32.7-34.3)	41.0% (40.3-41.7)	24.0% (23.1-24.9)	28.2%	29.7%

Definitions:

- Children in Poverty – Children living in households ≤100% of the Federal Poverty Level
- Housing Cost, Excessive – Households where ≥30% of household income is spent on housing costs
- Unemployment – Population aged ≥16 years that is unemployed but seeking work
- Uninsured – Current lack of health insurance among people aged 0-64 years
- Air Pollution-Particulate Matter – Average daily concentration of fine particulate matter (PM2.5) per cubic meter
- Walkability – Neighborhood amenities accessible by walking as calculated by Walk Score®
- Limited Access to Healthy Foods – Population living more than ½ mile from the nearest supermarket, supercenter, or large grocery store
- Adult Physical Inactivity – No leisure-time physical activity in past month among adults aged ≥18 years
- Food Insecurity – Estimated percentage of population that experienced food insecurity at some point during the year
- No Vehicle Access – Estimated percentage of households without a vehicle

The five segments assessed for walkability using the MAPS Abbreviated Audit (primary data collection) (Cain et al., 2017) earned scores between 19-32, indicating the area was "somewhat walkable." The main project area received the highest walkability score of all the segments assessed, likely because it had a high land use mix, including many retail and healthcare destinations. The audit revealed that the area needed improvement in the perception of safety and sidewalk width to accommodate multiple pedestrians and/or mobility device users.

Data on the rate of walking to work in the Census Tracts immediately surrounding the project was not available. However, a recent equity analysis indicated that the area just north of the project falls into parts of the Las Vegas Valley experiencing the highest inequity. The area just south falls into parts experiencing the second highest inequity. Inequity was measured, in part, based on (1) household percentages with no car for daily use, (2) household income below 200% of the federal poverty level, (3) non-white population, and (4) under 18 and over 64 years population (RTC, 2017). These characteristics are associated with higher rates of walking to work (McKenzie, 2014). Pedestrian counts obtained by CLV DPW at two intersections within the project area during peak times (7am-8am and 5pm-6pm) on multiple dates between 2002 and 2015 indicated a relatively high presence of pedestrians in this area. This walking data was compared with national and regional walking data. Nationally, 2.7% of all work trips are made by walking (USCB, 2017). In Las Vegas overall, 1.8% of residents report walking to work, which is slightly higher than the entirety of Clark County (1.7%) (RTC, 2017).

The bikeability assessment conducted by the RT found no physical separations or painted markings for designated bike paths or bike lanes and no signage to alert drivers to share the roadway. According to secondary data, bicycling in the area would be uncomfortable for most, meaning only avid bicyclists, often termed the "strong and fearless," would voluntarily cycle along this stretch (Geller 2009; Alta Planning and Design, 2017).

Bike lanes crossed the segment only once through an intersecting street and the nearest bike routes were over a mile away.

Bicycling rates for the project-adjacent Census Tracts were not available. However, because of the project's proximity to parts of the Las Vegas Valley with high inequity (RTC, 2017), demographic factors indicated that nearby residents would be more likely to bicycle to work than others in the region. RTC secondary data (2017) indicated that between January 2015 and February 2019, about 3,514 bicycles were loaded onto the public bus route running East-West along Charleston Boulevard in and beyond the project area. This bicycling data was also considered in light of other secondary national and local biking data. Only 0.6% of all work trips are made by bicycle nationally (USCB, 2020) and in Las Vegas, about 0.5% of residents bicycle to work, which is slightly higher than the 0.4% in Clark County (RTC, 2017).

Nevada Department of Transportation (NDOT) secondary crash data indicated that 3.7% of motor vehicle crashes between 2015 and 2017 along this segment involved a pedestrian (NDOT, n.d.), which is well above the national average of 1.1% (Campbell et al., 2016). Of the 11 pedestrian crashes in the corridor, seven involved vehicles turning right, suggesting increased hazards to pedestrians in the project area (NDOT, n.d.). There were three bicycle crashes along this segment between 2015 and 2017 (NDOT, n.d.). All three crashes were classified as "injuries" or "injuries reported by the person" and two of them involved a driver turning right at an intersection (NDOT, n.d.).

Community Input

An intercept survey involved primary data collection and was completed by 81 participants. It was developed by the RT with WG guidance and implemented by RT partners. Surveyors approached individuals who were outside and were walking, biking, standing, or otherwise in the project area. People were approached to participate at various points in time (7:30 am – 8 pm) and on multiple days of the week (Mondays-Fridays) over a three-week period in June and July 2019. Individuals who expressed interest in participating received research study information and a survey. Surveyors collected completed information. If participants requested help, surveyors assisted by orally reading questions and/or recording answers. This survey was deemed exempt by the University of Nevada, Las Vegas Institutional Review Board. The RT then examined the collected data.

The highest proportion of participants resided in surrounding ZIP Codes (89101, 89102, and 89106), which are some of the ZIP Codes experiencing the greatest health inequities in the region ("Health Equity Index," 2022). Most participants self-identified as white (43%), followed by African American (24%), and Hispanic or Latino (22%). Over half reported using automobiles as their primary mode of transportation (53%), followed by public transportation (36%), and walking (8%). About a quarter reported that they walk in the area most days of the week and over 40% reported they walk less than once per month. At the time of the intercept survey, participants were walking to get to work (27%), seek healthcare services (26%), and connect to public transportation (18%).

Only about 9% of survey participants said they were walking there that day because they lived in the area, which is adjacent to Census Tracts experiencing health inequities. This may potentially limit the conclusions that can be drawn from the survey about nearby residents. However, proposed project changes would impact all area users, including residents. In addition, other survey participants may also be members of communities experiencing inequities. For example, about 26% of respondents said they were in the area for medical reasons. Some of them may have been in the project area to visit the county's public hospital. This hospital sees 10% uninsured, 18% Medicare, 48% Medicaid, and 5% government insured patients and provides almost $41 million of uncompensated care annually (American Hospital Association, 2023).

About 74% of participants in the intercept survey believed that cars traveled too fast in the area to feel safe walking or bicycling. Only 22% reported that existing bicycling infrastructure was sufficient for safety. Participants identified the top three area safety concerns as: (1) vehicle speeds (59%), (2) distracted driving (58%), and (3) potential for crime (48%). When shown detailed pictures of bicycle and sidewalk infrastructure and asked which they would most likely use to walk and bicycle, participants most commonly chose bicycle lanes raised higher than street level and lower than sidewalk level (43%; n=74) and 10-foot-wide sidewalks, with 8 feet dedicated to the sidewalk and 2 feet to a landscape buffer (43%; n=75). **Table 3** presents detailed survey results.

Table 3. Pedestrian Intercept Survey Results

Main Form of Transit Used (n=73)	
Automobile	53%
Public Transit	36%
Walking	8%
Wheelchair/scooter	1%
Other	1%
How Often You Walk in the Area (n=81)	
Less than once per month	41%
1-3 times per week	21%
1-3 times per month	12%
Most days of the week	26%
Reasons for Walking in the Area Day of the Survey (n=79)	
I go to school in this area	10%
I live in this area	9%
I work in this area	27%
I'm connecting to another bus route	18%
Other:	37%
Other/Medical	26%

Other/Errands	2%	
Other/Roaming	3%	
Road Design Options "I Feel"		
Cars are too fast for:	*Pedestrians (n=79)*	*Bicyclists (n=79)*
Strongly Agree	37%	44%
Agree	37%	29%
I Don't Know	5%	6%
Disagree	14%	11%
Strongly Disagree	8%	9%
I feel safe from traffic while:	*Walking (n=78)*	*Bicycling (n=80)*
Strongly Agree	13%	3%
Agree	24%	11%
I Don't Know	9%	43%
Disagree	33%	20%
Strongly Disagree	21%	24%
I feel enough infrastructure exists for safety in:	*Walking (n=80)*	*Bicycling (n=78)*
Strongly Agree	14%	10%
Agree	36%	12%
I Don't Know	3%	17%
Disagree	21%	23%
Strongly Disagree	26%	38%
Safety Concerns (n=81)		
Speed of cars/trucks	59%	
Motorists	58%	
Distracted driving	58%	
Potential for crime	48%	
Too many cars/trucks	35%	
Narrow sidewalks	33%	
Conflicts or collision with cars/trucks	28%	
Not enough lighting	25%	
Not enough other people out walking	20%	
Poles/light posts in the sidewalk	20%	
Overgrown bushes/vegetations	14%	
I have no safety concerns	6%	
Other *"Other" written-in concerns: Crosswalks too far apart, older adult population usability, not enough shade/trees*	11%	

Project Impacts

Available data and literature supported the prediction that walkability and associated walking behaviors would likely increase under the plan, especially for populations experiencing inequities. Literature suggests that objectively measured built environment features, such as street connectivity, diversity of land uses, and population and employment density, are consistently associated with walking and neighborhood walkability. In addition, perceptions of the built environment (e.g., perceived sidewalk availability, safety, and aesthetics) correlated more strongly with physical activity than objective measures (Barnett et al., 2017).

Objective measures of walkability include land use mix and street connectivity (Khanal & Mateo-Babiano, 2016), gross population density (Grasser et al., 2013), Walk Score (Hall & Ram, 2018; Walk Score, 2019), and design and diversity (Ewing & Cervero, 2010). The area contained existing features that support walkability (e.g., access to services and destinations, public transit, high land use mix, and jobs/housing balance). The proposed changes, including improved 10-foot sidewalks, landscaping, crosswalks, and slower posted travel speed limits, could improve perceived walkability. Furthermore, because populations experiencing health inequities walk more – particularly as transit – walking among the population residing adjacent to the project area would be even more likely to increase.

Available data and literature also supported the projection that the plan could enhance bikeability and increase bicycling rates. Bikeability and bicycling rates are closely related to: (1) availability of bicycle infrastructure, including separating bicyclists and motorists (Pucher & Buehler, 2008; Pucher et al., 2010), (2) higher density, more connectivity, and greater land use mix (Saelens et al., 2003), and (3) enforcement of traffic laws to reinforce policies that favor bicycle travel over motor vehicle travel (Pucher et al., 2010). The amount of infrastructure necessary to increase bicycling rates is not fully understood (Buehler et al., 2012); however, one model suggests that a one-mile increase in bicycle lanes per 100,000 people is linked to about a 0.07% increase in bicycle commuting (Nelson & Allen, 1997); another suggests that every additional urban mile of bicycle lanes per square mile generates a 1% bicycling increase (Dill & Carr, 2003). Since the original plan focused on separating vehicles and bicyclists, it could enhance the level of comfort for bicyclists. Increased bicycle infrastructure and connectivity would likely yield increased bicycle commuting. Given the uncertainty about the exact connection between bicycle infrastructure and bicycling rates and the fact that the project would create less than 1 mile of new bicycle lanes, the RT expected changes to bicycling rates under the plan to be small. The RT also concluded that there would be an increased likelihood of bicycling in this area compared to other parts of Las Vegas and Clark County because of the high bicycle counts data, area demographics, and survey participants' indications of insufficient bicycling infrastructure in the area. Over time, adding more infrastructure could increase bicycle commuting rates, particularly as connectivity grows.

Given that changes in walkability

and bikeability predicted increases in both walking and bicycling, the RT likewise predicted reductions in the downstream health effects of injury and overweight. Several infrastructure changes show promise in the literature for reducing pedestrian and bicyclist injury. Interventions such as reduced motor-vehicle speeds (Cairn et al., 2014), improved traffic or pedestrian signals, separation of pedestrians from traffic with fencing or refuge islands, and increased roadway lighting (Retting et al., 2003) are linked to pedestrian crash reductions. A meta-analysis by Bunn and colleagues (2003) found a pooled rate ratio of 0.89 for pedestrian injury with use of traffic-calming measures.

Literature findings specifically for bicycle injury reduction were less clear. It is possible that increasing the numbers of bicyclists on the road could likewise increase the probability of bicycle versus motor-vehicle crashes; however, there is a nonlinear relationship between number of bicyclists on the road and injury rates (Kondo et al., 2018). This is likely due to the "safety in numbers" phenomenon, in which more bicyclists on the road actually seems to offer protection from motorists, perhaps because it makes motorists more aware of bicyclists in general (Kondo et al., 2018; Prati et al., 2018). Bicycle versus motor-vehicle crashes are more likely to occur at intersections or roundabouts, in areas of high vehicle speed, where there is insufficient lighting at night, in the presence of high traffic volumes, in the presence of obstacles (such as road signs), or where there are entrances/exits to the roadway, such as driveways, parking lots, or tunnel entrances (Kondo et al., 2018; Morrison et al., 2019; Prati et al., 2018; Reynolds et al., 2009). Dedicated bike lanes are a common intervention to reduce bicycle crashes, but evidence that bike lanes alone reduce bicyclist injury is lacking (Mulvaney et al., 2015). Morrison et al. (2019) suggest that this is because bicycle lanes decrease risk of crashes at different rates depending on the type of bicycle lane and other roadway infrastructure. Bicycle lanes appear to be most effective at reducing crashes where vehicle speeds are high, traffic lanes are narrow, and bus or tram routes are present (Morrison et al., 2019). The best protection of bicyclists has been found with paved, bike-only tracks with a high degree of separation from the roadway, adequate lighting, and low-angled grades (Reynolds et al., 2009). Reducing vehicle speed limits and providing dedicated bike paths separated from traffic are ubiquitous recommendations in the literature for reducing risk of bicycle crashes (Morrison et al., 2019; Prati et al., 2018; Reynolds et al., 2009).

Overall, the RT predicted that plan-related changes would likely reduce pedestrian injuries, but impacts on bicyclist injury were difficult to determine. Bicycle crashes could increase under the plan with more bicyclists, but the addition of a bicycle lane and bicycle signage as well as decreased speed limits could also decrease bicycle injuries (and possibly crashes) compared to the existing infrastructure. Pedestrian and bicyclist injury projections would likely disproportionately apply to populations experiencing health inequities, including those residing adjacent to the project, because such populations tend to walk and cycle at higher rates, particularly for utilitarian purposes.

The RT also concluded that a healthier neighborhood built environment under

the recommended plan could contribute to reductions in overweight and obesity. It would likely be in a limited way, however, because overweight and obesity are extremely complex; due to the size of the project and the fact that persons residing near the project area were already overburdened by obesity and overweight, reductions may be harder to realize. Research shows a strong link between walkability and obesity, as well as hypertension and Type 2 diabetes outcomes; it also strongly supports a relationship between measures of urban sprawl and obesity outcomes (Chandrabose et al., 2019). It appears that improved perception of walkability is most important (as opposed to objectively measured walkability) when it comes to improving health outcomes (Barnett et al., 2017; Chandrabose et al., 2019). Despite the fact that walking only to proximate destinations may not be enough to reduce obesity (Chandrabose et al., 2019), it could be that even improving residents' perceptions of walkability in the area could contribute to overall increases in walking and therefore improved health outcomes. The literature connecting bicycling and overweight and obesity outcomes was also promising, but inconclusive. One study conducted in a low-income community found that adults who bicycled were less likely to be overweight or obese than the general population (Noyes et al., 2014). Others found associations between bicycling to work and reduced obesity risk (Brown et al., 2013; Wojan & Hamrick, 2015). Suminski et al. (2014) found that bicycle-promoting policies were associated with more bicycle infrastructure, a higher percentage of adults bicycling to work, and lower rates of overweight and obesity.

To summarize, the plan was expected to increase walkability through wider sidewalks, enhanced landscaping, improved crosswalks, and decreased motor vehicle speed limits. Such changes would build on the area's existing features that favor walkability, including high residential and employment density, mixed land use, and public transit access. This, along with plans for enhanced bicycle infrastructure, could increase both walking and bicycling rates. Thus, the project could also contribute to reductions in overweight and obesity, while simultaneously reducing risk of injury.

Recommendations & Reporting

The RT combined assessment findings, WG suggestions, and feedback from a stakeholder input session to determine the focus of recommendations, namely separation of vehicles in time and space from pedestrians and bicyclists, reduction of speed limits, traffic calming, improved pedestrian and bicyclist infrastructure, enhanced connectivity, improved visibility, and enhanced aesthetics – categories identified in the literature as relevant to bikeability and walkability (Retting et al., 2003). Recommendations were presented as "good," "better," and "best" to provide best-case scenario ideas for health-enhancing improvements, but also allow for flexibility given budgeting or other constraints. For example, to help separate vehicles from pedestrians, it was suggested that it would be "good" to retain the proposal to install and maintain 10-foot sidewalks; "better" to install and maintain 10-foot sidewalks plus add pedestrian islands at a proposed crosswalk and paint driveways to alert drivers to yield; and "best" to

install and maintain 10-foot sidewalks, add pedestrian islands at a proposed crosswalk, consolidate driveways, and add driveway pavement markings. To help add bicycle infrastructure, a "good" suggestion was to add ample bicycle parking; "better" to add ample bicycle parking near popular destinations and bicycle-specific traffic signals; and "best" to add ample bicycle parking near popular destinations, bicycle-specific traffic signals, and bicycle lockers closer to destinations. To reduce motor vehicle speeds, we suggested it would be "good" to retain the proposal to reduce posted speed limits to 35 miles per hour (MPH) and reduce lane width to 11 feet; "better" to reduce it to 30 MPH, reduce lanes to 11 feet, and add radar signs; and "best" to reduce it to 20 MPH, reduce lanes to 11 feet, add radar signs, and approve future buildings that promote more pedestrian- and bicyclist-oriented frontage. Further examples of recommendations will be included in a separate manuscript describing a project scoping tool (PST) generated from this analysis (manuscript in progress). These and other detailed recommendations were included in the final HIA report and shared with other partners (UNLV, 2019).

Monitoring and Evaluation

During the in-person process evaluation discussion, WG members expressed that the HIA helped them understand the "how" behind connecting health implications to planning decisions. One weakness the group noted during the evaluation discussion was the ability to quantify health impacts more, e.g., a specific type of bike lane reducing crashes by a specific percent. The WG process evaluation survey (n=11) yielded generally positive feedback. Survey respondents strongly agreed that because of the HIA they had a better understanding of the HIA tool and were more likely to recognize the link between built environment and health. A majority reported thinking that the HIA would benefit the community. All respondents either "strongly agreed" or "agreed" that the HIA (1) met its aims and objectives, (2) was beneficial to them and their organizations, and (3) the process valued their input during feedback discussions. Most respondents also indicated that they were given adequate opportunity to provide HIA comments and that the benefits of the HIA outweighed the time associated with WG participation. Survey results were mixed about whether HIA recommendations would be considered during plan implementation. The RT and WG continued to refer to and discuss the HIA and to track changes to land use and health indicators as it worked on the PST to aid with future land use decisions.

Discussion

This HIA focused on the Charleston Medical District Improvement Plan, which proposed modifications to the built environment. It relied on data on baseline conditions, pedestrian and bicyclist use and injury, built environment audits, an intercept survey, literature reviews, and stakeholder feedback. Using this analysis, it was determined that implementation of the plan could help improve walkability and bikeability, reduce crashes involving pedestrians and bicyclists, and increase physical activity through active transport – especially among residents living adjacent to the project area. This HIA produced evidence-informed alternatives to modify the plan to further improve health determinants and outcomes of interest. These recommendations were shared with project partners and

stakeholders, and monitoring of plan implementation and health behaviors and outcomes continues.

This HIA provides a practical example of how to connect land use and public health in the context of a specific project. Literature indicates that improving a community's built environment is likely to encourage physical activity for that area's population (Carlson et al., 2019; Cambra & Moura, 2020; Forsyth & Krizek, 2010; Stappers et al., 2018; Wei et al., 2016). The focus on physical activity and its connection to chronic disease is a major avenue for collaborations between the health and planning sectors (Frank et al., 2019). Literature also indicates that land use choices impact pedestrian and bicyclist crashes and injuries (Cairns et al., 2014; Prati et al., 2018). However, HIAs are often not used in transportation planning, which instead tends to focus on assessing monetary costs and associated project benefits (Nieuwenhuijsen et al., 2020).

While HIAs have promise to bridge this gap and enhance the planning process and its outcomes (Wernham, 2011; Nieuwenhuijsen et al., 2020), land use HIAs can be highly contextual (Nieuwenhuijsen et al., 2020; Waheed et al., 2018). This HIA used existing data, literature, and feedback to generate actionable recommendations to promote walkability and bikeability, and thereby help address physical activity rates, injury, and obesity. Through this process, the HIA demonstrated how Southern Nevada could meld health and land use considerations and also fostered connections for future collaboration in this area. Many WG participants indicated that the process helped make practical connections between these sectors. The outcomes of this HIA were consistent with their potential, as articulated by Wernham (2011): enhanced collaboration and improved plans. The HIA outcomes were also consistent with findings that primary HIA benefits include building cross-sector relationships and raising awareness of health issues among decision-makers (Bourcier et al., 2015; Dannenberg et al., 2008; Sohn et al., 2018).

A remaining challenge for HIAs is how to integrate health concerns into decisions of other sectors systematically (Morly et al., 2016). This HIA focused on one short stretch of a roadway in a large urban area. However, one goal of this HIA at the outset was to build capacity and interest in integrating health concerns in transportation and land use decisions more broadly. There is growing interest in tools that can help shape how transportation projects are developed and prioritized and some indication that they may promote projects that support active transportation (Chirstofa et al., 2020).This HIA served as an entry point for continued collaboration among the partners to create a PST for future built environment project decisions to assess existing baseline conditions and built environment infrastructure in a geographic area through a process that necessitates less time and fewer resources than an HIA. Dannenberg's and colleagues'(2008) suggestion to incorporate recommendations as a formal step between the assessment and reporting steps is now integral to an HIA. The recommendations generated during this HIA are central to the PST. This HIA suggests that HIA-generated recommendations may be used beyond one specific HIA to inform subsequent projects and to integrate health

concerns into land use decisions more systematically.

This HIA also encountered a challenge experienced in other HIAs: how to prioritize health equity (Morley et al., 2016). Health equity was central to the structure of this HIA, since it was part of a larger project focused on improving health in geographic areas where residents were experiencing health inequities – areas that included disproportionate numbers of African American and Latinx residents. This resulted in a project that considered disparities in the HIA assessment, conducted an intercept survey, and fostered close collaboration with stakeholders who engaged with these communities in other contexts. In the typology of integrating health equity into transportation-related HIAs, this HIA focused on populations experiencing disparities, examined disparities, worked with stakeholders and incorporated stakeholder ideas, and aimed to build stakeholder capacity (Cole et al., 2019). These efforts enriched the HIA process and outcomes. However, with additional resources, deeper community engagement in this HIA process may have enhanced the ability to integrate experiences and perspectives from the resident populations directly into the HIA process and perhaps also into the PST.

Finally, this HIA process, including conversations of the WG, the process evaluation, and the stakeholder feedback event, revealed broader considerations adjacent to this plan and other built environment projects. Improving bikeability and walkability can be a slow and long-term process. This work requires initial investment and sustained efforts, which can make it difficult to catalyze these types of projects given competing interests for local infrastructure funding. Sustained collaborations across mutually beneficial projects may effectuate true change. In addition, walkability is especially influenced by land use mix. Questions of land use can involve stakeholders beyond governmental transportation and planning departments. This can pose additional challenges.

Collaborative efforts, such as the PST, which aim to bolster existing processes with practical and contained health-focused-analysis, may help address some of the sustainability and equity concerns articulated in the literature and echoed through this HIA. As this HIA demonstrates, HIAs can spark partnerships (Chirstofa et al., 2020) and can be indispensable in establishing collaborations, articulating priorities, uncovering data, generating recommendations, and discovering existing decision-making processes that can serve as a foundation for sustained and equity-focused systems change work. Moving beyond any one HIA is also important to further systematic change and make progress in Health in All Policies efforts.

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A CASE STUDY ANALYSIS OF HOW PRODUCTS MIGHT BE DESIGNED TO PROMOTE HEALTH

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Abstract

Background: Consumer technology products are changing lifestyle behaviors like how we eat, how we sleep, and how we get around, but existing research has not examined whether they are being designed to promote healthy choices. This study assesses the health impact of two products, Snapchat and Uber, through the lens of their companies' environmental, social, and governance (ESG) goals in the context of the COVID-19 pandemic.

Methods: We use an exploratory multiple case design to present how health might be considered as a growth strategy for consumer technology products. Using publicly available material, we analyze the strengths, weaknesses, and opportunities for the products' design, policy, and implementation to promote health.

Results: This distinct approach to health impact assessment successfully revealed existing organizational beliefs and practices with health impact. Snapchat's social media platform fosters social interaction but lacks responsible design features, while Uber's mobility platform has safety and privacy measures but lacks focus on physical activities as forms of mobility.

Conclusions: By using these products, positive health impact is possible: whether through social connection and information access (Snapchat), or increased mobility and physical activity (Uber). This case study highlights the untapped potential of intentionally designing products to influence health behaviors and promote health, especially through new uses of existing features. Leveraging external partnerships and subject matter experts will be crucial for success, but companies that choose to do so and embrace a health-positive mindset will lay a foundation for a replicable business strategy for those too reticent to lead in this nascent field.

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Introduction

Consumer technology use greatly impacts various lifestyle behaviors in the U.S., including eating habits, entertainment choices, transportation options, and social interactions. These behaviors are closely linked to chronic diseases, such as cardiometabolic and mental health conditions, which have been increasing (CDC, 2022). Existing research has not fully examined whether consumer products in these categories align with companies' publicly stated environment, social, and governance (ESG) goals – especially those tied to health. Presumably companies with reported health-focused goals in their public ESG strategy should have health-promoting features, but no model of product development or design has emerged to guide health-positive business choices (that is, intentional choices to promote positive health impact (Koh, Singer & Edmondson, 2019)) across diverse sectors.

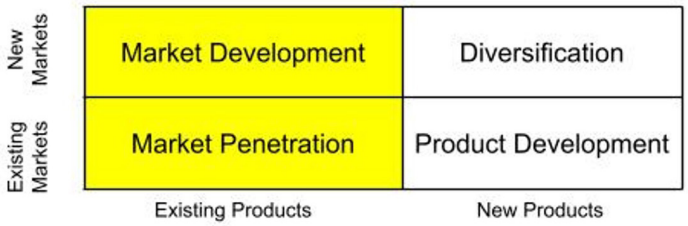
This case study investigates the integration of health-positive product features within the context of major disruption. The extraordinary, immediate, cross-sector response to COVID-19 provides a unique opportunity to observe product development efforts, during a period which potentially created an enabling environment for innovation (Sturmberg, Tsasis & Hoemeke, 2020). This study aims to characterize what was a rapid effort to operationalize health-positive features for consumers to determine whether any might have value more broadly, as a replicable and sustainable approach to achieving positive health impact through products.

Study context

The COVID-19 global pandemic disrupted the typical drivers of organizational strategic decision-making: regulatory pressure, investor demand, consumer patterns. Existing product roadmaps and painstakingly crafted annual strategic plans became moot. As the gravity of COVID-19 became clear in March 2020, the response was urgent and far-reaching. Companies had little choice but to respond. For many, the pandemic was the first time that health was seen not only as a material consideration, but also a driver of value-enhancing competitive advantage (HHS, 2021; Battilana et al., 2019). Examining the response to COVID-19 can yield important lessons for future major public health problems that upend the status quo, as COVID-19 did.

The objective of this case study is to understand how consumer technology products can become more "health-positive", by which we mean supportive of health-inducing behavior. This research will explore two distinct ways tech companies can promote health through their products: 1) how products might be designed (or modified) to promote healthier behavior, and 2) how these products in their original state can be applied in service of health. This approach for determining strategic directions for growth resembles the Ansoff matrix, which considers how combinations of either new or existing products and/or markets can drive expansion (see **Figure 1**) (Campbell, Stonehouse & Houston, 2002). In this research, we put a particular emphasis on market penetration (creating deeper value with existing products in existing markets) and market development (that is, creating new uses for existing products).

Figure 1. The Ansoff Matrix



This research aims to surface examples of processes and/or features that should either be emulated or improved to achieve health-positive product design, by considering these strategies. Through the lens of the COVID-19 response, this case study asks:

1. How did two companies extend their existing stated beliefs and organizational practice to implement health-positive product development?
2. How did two companies adapt existing products to be health-positive?

Extrapolating a process through which companies can implement health-positive thinking would ideally encourage wider adoption.

Methods

Study design

We used an exploratory multiple-case design with purposeful sampling to gather and analyze relevant products and documents. The protocol for this case study follows the methodology outlined by Yin (2009) and Creswell & Creswell (2017). We identified the two cases using a frame derived from preceding research that examined external-facing views on health impact described in a corporate proxy statement, which is a document provided by publicly traded companies to its shareholders, outlining important information regarding corporate governance, executive compensation, and proposals to be voted on at the annual shareholder meeting. The cases were obtained from a list of public technology companies with products influencing lifestyle behaviors that are determinants of chronic disease (e.g., physical activity, eating, sleep, social interaction, time spent outside) (Rowen, 2021; Sigler, 2022). We only considered products available during data collection in October 2022.

Two products from different sectors were selected to affirm replication and allow for cross-case synthesis: Snapchat (social media), and Uber (rideshare) (see **Table 1**). We selected these products as they represent different behaviors (social connection and mobility) and the products are widely used, avoiding a niche analysis. Building on established concepts of social proof, network effects, and diffusion of innovation, we hypothesize that the more users a product has, the greater opportunity for influence (Roethke, Klumpe, Adam & Benlian, 2020; Katona, Zubcsek & Sarvary, 2011; Min, So & Jeong, 2021). This hypothesis supports our decision to examine more commonly used products and increases the relatability of the findings. While Facebook may be a more obvious choice for the social media sector, we were more interested in how companies demonstrate value to both shareholders and consumers – and this value is being questioned for Facebook (Slotnik, 2021). A case analysis can say more about standard operations in an environment where the company does not have a poor reputation and is instead more neutral, leading to the decision to analyze Snapchat (Islam et al., 2021; Singh & Misra, 2021; Schaarschmidt & Walsh, 2020).

Data collection

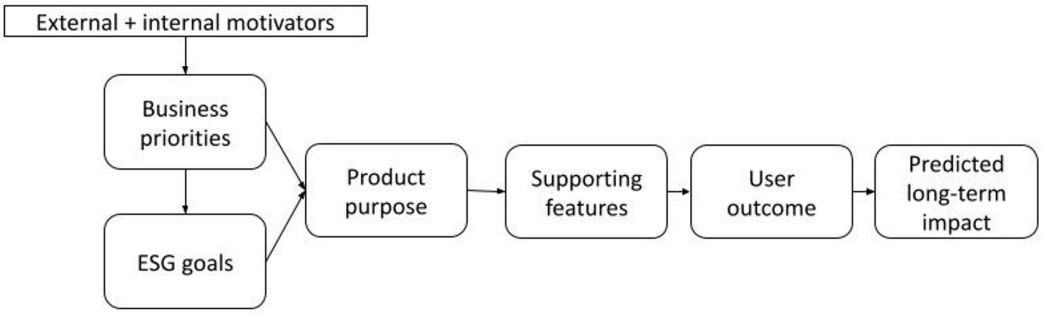
We used multiple forms of public documentation and direct-observation as data sources to increase construct validity (i.e., the appropriate conceptualization of the cases under analysis, and the operationalization of the concept of health-positivity). To understand external and internal motivators, we reviewed findings from a literature review, stakeholder interviews, and content analysis of proxy statements from earlier research (Sigler, 2022). Where relevant data were not available in proxy statements, we reviewed annual reports (10-Ks) and separate ESG reports. All reports were for the 2021 reporting year. We also employed direct observation via direct testing and use of the products. Where available, product analysis was supplemented by Building H profiles, which assess the health impact of products on consumers in six steps: product selection, product research, influence analysis, company input, crowd rating, and H-Score calculation (a scale based on reviewer scores to determine the overall health influence of a product). Different types of products are assessed using different core measures, as appropriate. For more details on the Building H Index methodology, see Building H, 2022 and Singer & Downs (2023). While only possible for Uber, we employed comparable logic to evaluate Snapchat. We also cataloged product policies, including privacy policies, community guidelines, and terms of use, to define business and user context. All product data (policies and feature analysis) were collected in October 2022.

Data analysis

The logic model presented in **Figure 2** guided analysis of collected data sources. During preceding research, we identified motivators through stakeholder interviews and content analysis of public corporate proxy statements. We also used proxy statements and 10-Ks to identify business priorities, the defined purpose of relevant products, and ESG goals. By surfacing these product goals, we identified relevant health behaviors to investigate in the associated product (e.g., a goal of building community can be tied to social interaction). We used product policies to identify those that may influence user health, either positively or negatively. All sources of documentation provided detailed background and context to inform the product analysis.

The first stage of analysis yielded a foundational overview of each product, describing context for the company, their stated business priorities, reported ESG

Figure 2. Logic Model for Case Analysis



goals, along with their product's purpose and primary features.

We next built on this foundation and analyzed each product for strengths, weaknesses, and opportunities. This analysis was based on reports for 2021, and the products as experienced in October 2022. We analyzed consumer product policies (privacy policies, community guidelines, and terms of use), their design, and their implementation: design was considered in terms of functionality built, while implementation centers on how this core capability has been used. Assuming the role of a user, we analyzed the selected products, which we refer to as our two cases, and their features to discern the presence of, or opportunity for, health-positive features, and user behaviors susceptible to influence accordingly.

We triangulated these analyses within and across cases to develop feasible recommendations for health-positive product development that can be aligned with business goals according to strengths, weaknesses, and opportunities. We focused the analysis on narrowing the set of identifiable opportunities to product changes that maintain alignment with business operations, as it is understood that these would have the highest likelihood of adoption. It is intended that these recommendations be applicable across consumer technology products, not solely those analyzed in this case study.

Results

Product Overview

These results are first presented by identifying the business priorities for each case using publicly available corporate reporting before diving into their policies, and finally assessing the products themselves. We then use this knowledge to present their in-product COVID-19 response.

Snap and Uber represent distinct sectors – social media and ridesharing – yet analysis of primary materials from both companies yielded findings in support of health-positive product development (note: Snap is the name of the company; Snapchat is the name of the product). Product and company overviews are found in **Table 1** (Snap) and **Table 2** (Uber). Both companies reported ESG goals with health implications, which directly tie to their product purpose. Snap aims to strengthen community, empower self-expression, and build connection by having fun together. These goals are directly tied to the positive mental health of users, particularly through avoiding loneliness and building positive social interaction (Jeste, Lee & Cacioppo, 2020).

Table 1. Product Overview (Snap)

Company context	A camera company that focuses on helping people communicate visually through ephemeral short videos and images called Snaps. 319M daily active users: 51.8% female, 20.5% 13-17, 39.1% 18-24, 22.6% 25-34, 13.4% 35-49, 3.6% 50+. Competitors: Meta (Facebook, Instagram, WhatsApp), Alphabet (Google, YouTube), Twitter, Apple, Pinterest, Bytedance (TikTok), Tencent. Pertinent regulation: extra focus on data and consumer protection, privacy, and content regulation as more restrictive outside U.S.
Business priorities	Revenue is generated primarily through advertising. Ad tools are created based on features most successful in consumer product. Product innovation is intended to increase user engagement, which is then monetized through advertising. Research and development focus on product development, advertising technology, and large-scale infrastructure.
Reported ESG Goals	Society: • Strengthen community (partnerships, giving and volunteering), • Responsible design and product use (inclusion, safety, privacy,) ◦ Content safety and governance, promotion of beneficial content, protection. and rights of minors, • Leverage platform for social impact (mental health, civic engagement). Planet: • Reduce carbon footprint of product and operations, • Conserve natural resources, reduce waste, • Building responsible supply chain (worker well-being + materials). People: • Strengthen culture through DEI, • Encourage wellness and healthy, safe environment, • Support commitment to integrity. Governance: • Maintain structure for value + transparency, • Do business responsibly and ethically, • Integrate robust risk framework.
Product purpose	Empower people to express themselves, live in the moment, learn about the world, and have fun together.

Table 1. Product Overview (Snap) (continued)

Primary features	-*Camera*: App homepage, includes company- and community-created creative and contextually relevant tools (including augmented reality) to personalize Snaps. Snaps can be saved to, and searched in, Memories; and can be taken with Spectacles, a wearable glasses device. -*Communication*: Ephemeral messages through text, Snaps, voice, and video calls; stickers and Bitmojis; opportunity to play Games and Minis together. -*Snap Map*: live map of nearby friends, stories, heatmap of recent Snaps on "Our Story", and local businesses (including Places, rich profiles of businesses that overlay experiences which enable direct action on top of Snap Map, e.g. ordering takeout). -*Stories*: Snap content from publishers, creators, and community, with Discover based on user subscriptions and interests (including news and entertainment). Includes Public Profiles for permanent creator and advertiser content. -*Spotlight*: Share user-generated and Trending content with entire Snapchat community, display based on user preferences and favorites.
Source: Data extracted from corporate 10-K and proxy statement available on SEC.gov for 2021, and ESG report from investor relation section of company website.	

Uber focuses on mobility, with an interest in safety and wellbeing for both drivers and riders (though there is broadly greater attention to the environmental impact of the business than these social impact topics across sources reviewed). While physical safety and wellbeing are respectable health goals, there is a significant opportunity to address the relationship between how people move from point A to point B and physical activity.

Table 2. Product Overview (Uber)

Company context	Uber is a technology platform that powers movement from point A to point B by connecting consumers with independent providers of ride services, merchants, and couriers. 19M trips/day: 52% male, 37% 16-24, 28% 25-34, 17% 35-44, 12% 45-54, 6% 55-64. Competitors: taxi companies, public transit, Lyft, Ola, Didi, Grab, Bolt, Yandex. Taxi. Pertinent regulation: different and sometimes conflicting laws based on jurisdiction, including (but not only) privacy, cybersecurity, data protection, consumer protection, labor and employment, and transportation services.
Business priorities	Revenue is generated directly through product use of ridesharing services, meal and grocery delivery, financial partnership offerings, and freight carriers. Continued research and development focus on the platform's synergies: a massive network, leading technology (including marketplace, routing, and payments), operational excellence, and product expertise.
Reported ESG Goals	Environmental: • Climate change: focus on zero-emission vehicles, micromobility, and public transit, • Energy efficiency + renewable energy, • Local air quality, water consumptions, waste reduction/recycling. Social: • COVID-19 response, • DEI and culture, • Driver and courier well-being, • Local impact and urban use, • User privacy and safety. Governance: • Data privacy and security, • Human rights in the supply chain, • Political activities, • Ethics and compliance, • Board composition, executive compensation.
Product Purpose	While Uber has mobility, delivery, and freight segments, this case focuses on mobility ("Ride"). The purpose of the mobility product is to move consumers from where they are to where they need to be, efficiently, safely, and on-demand.

Table 2. Product Overview (Uber) (continued)

Primary Features	-*Rideshare*: Call a car for door-to-door service via mobile app. -*Bikeshare*: Use the app to book a bike at nearest available bikeshare station. -*Scooters*: Use the app to reserve a scooter per above. -*Car rentals*: Ability to rent cars through select agencies. -*Uber One*: subscription service provides discounted rides and priority access to top-rated drivers.
Source: Data extracted from corporate 10-K and proxy statement available on SEC.gov for 2021, and ESG report from investor relation section of company website.	

Both cases demonstrated a multitude of strengths, along with weaknesses and opportunities to take advantage of existing organizational practices to evolve in a more health-positive direction (see **Table 3 and 4**).

Snapchat

At its core, Snapchat is a product meant to facilitate social connection, which it makes easy to do immediately upon opening the app. There are multiple ways to connect with other users, through direct messaging or image/video-sharing, or posting more publicly on stories, indicating strong follow-through on the company's stated purpose of building community. This is likewise supported by SnapMap, whereby upon giving consent, users can easily connect with friends offline by digitally following friends. Users also have the ability to control their self-expression, especially through their digital avatars (Bitmojis), which are available in an especially representative swath of skin tones and hairstyles. The heavy emphasis of these personalized avatars promotes equity by encouraging users to come as they are, without limiting how they can be represented.

Snap has an implicit emphasis throughout its reporting on supporting the mental health of its users, and on creating a healthy product environment – though there is an opportunity to make the connection between banned activity and the health of users directly. There are ample policies (pointedly crafted in plain language, though not intuitively accessible in-app) governing use of the product, including a privacy policy, terms of use, and community guidelines with persistent mention of a desire to keep users safe, and empower them to take control over their experience. It appears contradictory, then, to observe the lack of content moderation in-app or ability to self-impose restrictions on the content a user chooses to see. Without the ability to control content visible through Discover (Snap's newsfeed) or Spotlight (short-form video content), a user is likely to engage with sensationalist news stories, lewd imagery and videos, and minimal display of credible sources. This increases risk of misinformation and negative self-image and fails to create a healthy sense of community (Sheldon, Rauschnabel & Honeycutt, 2019). Spotlight's endless stream of content amplifies this state by enabling constant engagement and addictive behavior (Sun & Zhang, 2021; Bányai et al., 2017). This reality does not align with Snap's stated goal of responsible design and product use.

This misalignment appears to be a function of a disconnect in how the organization is structured: the trust and safety team is responsible for development of content moderation tools and implementation, while the public policy and social impact team engages in external partnerships and advocacy efforts. That is, one team determines which content is noncompliant with product policy requiring removal, another develops impact-driven content, but none is asserting how the remaining content should be prioritized, presented, or experienced by users. This also leaves a gray zone of content which is not counter to policy, yet still negatively impacts users. The public policy and social impact team has spearheaded thoughtful partnerships with industry experts and non-governmental organizations to target Snapchat's key user demographic (largely Gen Z and younger millennials, Snap's primary users) with campaigns especially salient to them, e.g., drug use reduction, mental health education, and bullying awareness and prevention, along with the creation of a digital Safety Center. These partnerships produce excellent, credible content; however, they do not receive much prominence in-app, nor are credible sources identified, which offers room for improvement. Users must happen across the correct search terms, or know they exist, to surface mental health support and drug use awareness campaigns. While Snap's own wellness resources claim that being safe on social media is not merely the absence of danger, but the presence of wellness, features seem to focus on reactive support and reporting rather than proactive prevention and moderation.

There are multiple opportunities to build on existing design to extend the product's positive health impact. The app already allows users to subscribe to creators and select lifestyle interests to personalize advertising content. This ability to control content should extend to content filters of what a user does not want to see, especially for younger users. As established by Social Cognitive Theory, increasing user agency can improve wellbeing by supporting their preferences (Bandura, 2001; Martin, 2004) – in this case for the parts of the broader product community with which they seek to engage. Adding an option native to the app to control length of session would minimize addictive design features by limiting a continuous content stream (such timer features are available native to most mobile devices) (Sheldon, Rauschnabel & Honeycutt, 2019). Opportunity to promote offline events and activity through SnapMap can also further foster social connection in-person.

Current policy outlines how data are used, largely governing advertising and content offered. Snap can choose to use this data to promote health information pertinent to the user in partnership with local health departments. These data can also be combined with that of "friends" users interact with most to determine group-level interventions. Still, the policy should specify which behaviors or personal information do not, or will not, dictate ads. User behavior determines content displayed through Discover and Spotlight, creating either positive or negative reinforcement loops. More can be done to help this content skew toward a positive user impact. Verification and recommendation features can help

Table 3. Product Health Assessment (Snap)

Health behavior: social interaction and connection			
Variable	**Strengths**	**Weaknesses**	**Opportunities**
Design	• Encourages social interaction: strong-follow-through on stated purpose to build community • Emphasizes the use of digital avatars ("bitmoji") to personalize the experience: customization promotes diversity and inclusion • Ease of social connection offline through SnapMap	• Lack of ability to filter: concerning given sensational content in Discover and lewd content in Spotlight • Misaligned with stated goal of responsible design and product use; negative influence on self-image • Constant stream of Spotlight content risks addictive behavior	• Filters for what users do not want to see, and not just what they do see • Ability to control session length • Promotion of offline activities for further social connection
Policy	• Plain language explanation of access • Data used to protect user rights, safety • Focus on building a safe product community • Community guidelines have heavy focus on mental health of users	• Failure to acknowledge offline behaviors that results from online product use • Bulk of policies related to health and safety in Community Guidelines, not easily accessible within the user experience (UX) design • No explicit mention of impact of banned content, or misuse broadly, on mental health	• Information collected can be used to personalize health-related content through partnerships, instead of just ads • Adjust algorithm to avoid negative reinforcement loops to help skew toward positive user impact

Table 3. Product Health Assessment (Snap) (continued)

Health behavior: social interaction and connection			
Variable	**Strengths**	**Weaknesses**	**Opportunities**
Implementation	• Safety by design, collaboration with outside experts • Development of "Here For You" content, partnership with Crisis Text Line • Development of "Heads Up Portal" • Snap Originals focus on mental content	• Lack of identification of credible sources in search • No explicit mention of safety by design principles used, no promotion in-app of safety feature or health-related content • Focus on absence of danger, not presence of wellness, counter to own guide	• Validation feature to discern credible content • Recommendation feature to surface valuable content partnerships and wellbeing resources more easily. • Partner with communities who can benefit from social connection
Evaluation	• Impact Reported impact in Citizen Snap report, covering quantity of content removed, percentage of content that violated guidelines, and use of support resources	• No mention of impact of COVID-19 partnerships or campaigns, use of COVID-focused AR experiences and creative tools. • No discussion of reach of COVID-19 content. • No discussion of reach or impact of Here For You content.	• All campaigns launched with health goals should be explicitly evaluated • Any health-related goal in impact reports should be tracked at minimum qualitatively.

amplify credible content, avoid mis- or disinformation, improving the responsible design elements the company claims to aspire to.

Uber

As a mobility product, Uber's main priority is to move users to where they want to be. This suggests a seemingly obvious opportunity to allow users to choose to walk as part of their journey, but modalities are limited to car, bike, and scooter. While biking and scooting are more active transportation modes, these choices receive reduced prominence in-app. The only option which integrates walking is by choosing to meet one's driver at a more convenient location for the driving route, centering driver preference. Given this functionality, it would not be a stretch to center this capability from the user-side, allowing the user to plan in walking time on either end of a ride.

Policy and design are strongly aligned in a focus on safety: there is clear emphasis on how both riders and drivers should be treated, and how they should treat each other, creating equitable expectations and community guidelines. This includes the use of mutual ratings, building an expectation for positive social interactions during rides in order to receive a positive score. Use of privacy-by-design practices and community guidelines which center on respect likewise promote a healthy user experience. In-app, the "Safety Toolkit" provides both riders and drivers with the ability to report incidents, record uncomfortable situations, contact emergency support, and share location, while RideCheck auto-detects rare events like long stops. Given users must scroll to view this toolkit feature, periodic reminders of its availability could maximize its utility. Similarly for the robust community guidelines, reminders of expected behavior could increase the likelihood of positive social interactions and safety. This repetition is already employed for seatbelt use. Core features like the map and ads have the opportunity to be optimized to promote healthy locations or items, and dynamic pricing could integrate health-related variables like opting to walk to shorten rides.

Ultimately, as a robust logistics platform, Uber has the functionality to be used for additional purposes. Indeed, the company has initiated a fledgling healthcare business to help coordinate non-emergency medical transportation as its first product line. Additional

Table 4. Product Health Assessment (Uber)

Health behavior: mobility			
Variable	**Strengths**	**Weaknesses**	**Opportunities**
Design	• Ample safety features: verification, ratings, reporting, ability to share location; safety toolkit with ability to record audio, share trip, and 911 help • Ratings system creates dual accountability for health interpersonal behavior • Seat belt alerts	• No acknowledgment/ promotion of walking as form of mobility • Minimal promotion of micromobility (i.e., lightweight transport options like bikes and scooters) over other modes of transportation, despite emphasis in ESG report	• Embed walk options • Increase prominence of bike and scooter

Table 4. Product Health Assessment (Uber) (continued)

Health behavior: mobility			
Variable	**Strengths**	**Weaknesses**	**Opportunities**
Policy	• Data used to enhance safety and security • Focus on "privacy-by-design" • Community guidelines center on respect • Promote safety	• Lack of mention of how "privacy-by-design" has translated to product development • Lack of recognition and accountability of connection between mobility and physical activity	• Robust community guidelines not central to in-app user experience (UX), opportunity to be more intrinsically embedded to optimize for positive experiences
Implementation	• Logistics expertise and mobility platform being used as foundation for Uber Health product line • Impaired driving prevention through "Decide to Ride" campaign • Ride donation and in-app donation as part of humanitarian response efforts		• Use map to promote healthy locations (grocery stores, parks) • Partner with nonprofits focused on communities suffering from social isolation due to limited transportation • Integrate health variables into dynamic pricing model (e.g. deter short rides by increasing price, promoting more active transit) • Use personalized ads feature for good
Evaluation	• Frequency of trips without safety incident evaluated in ESG report • Reporting of philanthropic initiatives, e.g., rides for pregnant people, job interview access, health appointment access, humanitarian relief	• No discussion of impact of COVID-19 initiatives (e.g. reach of vaccine education, # of rides to vaccine sites).	• Same as Snap, bearing repeating: • All campaigns launched with health goals should be explicitly evaluated • Any health-related goal in impact reports should be tracked, at minimum qualitatively.

positive impact can be achieved through emphasizing partnerships with nonprofits focused on communities suffering from social isolation due to otherwise limited access to transportation (some work in this regard has begun through the Uber Health product line).

Evaluation
To discern whether any of these features or campaigns are successful, additional evaluation is needed for both products. All campaigns launched with health goals should be explicitly evaluated, indicating their influence on baseline metrics as a model for other companies. Companies need to share which efforts are successful to contribute to developing a standard. Any health-related goal in impact reports should be tracked: if quantitative measurement is not possible, at minimum there should be a qualitative assessment.

COVID-19 response
Both products leveraged their core functionality in responding to COVID-19, as illustrated in **Table 5**. Snap developed creative tools and AR experiences which allowed users to share reputable health information with their connections. Snap also collaborated with partners to develop original content with credible resources. While content partnerships with a health focus appear to have been temporary, there are still efforts to create shareable health-related information through filters, gifs, and bitmojis. The Here For You channel which focused on the pandemic's effects on youth mental health still exists, but without regular updates on general mental health (its original purpose). Uber donated rides and made it possible to receive free transportation to vaccination sites, consistent with ongoing health-related philanthropic ride donation efforts. This initiative has not been sustained for other user-facing initiatives, e.g., had the company chosen to implement a similar strategy for promoting flu shots. Additionally, while the company launched a new feature to prompt mask use before entering a vehicle, the ability to offer public health messaging has not been repurposed for other health topics.

Table 5. Maintenance of COVID-19 Product Response

Case	COVID Feature	Continued	Discontinued
Snap	Creative tools to share expert-approved best practices to stay healthy (e.g., GIFs, bitmoji designs)	Still available, not promoted. Promotion of anti-bullying content (October 2022).	
	Published regular safety updates with public health officials and agencies, including WHO and CDC		No usage for other health updates, e.g., flu season.
	Focus on sharing credible information in Discover from trusted sources: efforts to provide access to information about COVID-19 and how to stay safe: • News providers (3 dozen partners) produced constant coverage of pandemic on-app • Collaborated with syndicated partners to publish and share episodes around COVID vaccines targeting young users		Unclear if other partnerships currently exist with social impact focus through Discover feature.
	Vaccine education initiative in-app in partnership with White House		Discontinued, partnership does not appear to have been sustained around other topics.
	Expanded Here For You content focused on the pandemic's effects on youth mental health and loneliness.		Discontinued, partnership does not appear to have been sustained around other topics.
	Expanded Here For You content focused on the pandemic's effects on youth mental health and loneliness.	Still exists, but appears to be updated on a limited basis, if at all.	

Table 5. Maintenance of COVID-19 Product Response (continued)

Case	COVID Feature	Continued	Discontinued
Uber	Requirement of mask to ride, with in-app prompt at outset of each ride.	Ethos maintained through seat belt alert, but no clear indication that product decision related to mask feature.	
	Meal delivery to frontline responders (Uber Eats)		Discontinued.
	Transported essential goods in times of crisis (Uber Freight)	Continued for other philanthropic or humanitarian efforts.	
	Donated 10M free rides to healthcare workers, seniors, and others to get vaccinated (partnership with organizations with ties to communities disproportionately impacted by pandemic)	Ride delivery for other philanthropic causes.	
	In-app feature to donate to Vaccine Access Fund which provided free rides to vaccination sites and other places to learn about the vaccine from trusted contacts	Will use remaining funds to address systemic barriers to access to health services beyond vaccines.	No other donation campaign related to health.
	In-app experience integrating vaccines.gov, allowing users to find nearby available appointments (included free rides for both legs of trip to get first 2 vaccinations)		Feature not used for any other in-app health education campaign, e.g., flu shot.

Discussion

This study of two distinct products' policy, design, and implementation choices revealed that existing organizational beliefs and practices have resulted in decisions with health impact. This suggests that health promoting decision-making can feasibly be integrated into organizations outside the healthcare sector. However, there is minimal intentionality for positive health impact in current product design, as existing design aligns predominantly with business priorities. While some companies may have health-related social impact goals in their ESG reports, there is no requirement for these goals to be accounted for in core products based on current regulations (Snap comes close to integrating the goal of strengthening community by inherently promoting social connection). While COVID-19 has triggered new applications of existing product capabilities, there has not been significant new feature development that has been initiated or sustained as a result of the pandemic. Though COVID-19 is now endemic, the lessons here are powerful for future pandemics and public health crises.

Upon analyzing Snap and Uber for their strengths, weaknesses, and opportunities in terms of health impact, it would be idealistic to expect health-centric product development without external accountability, creating an opportunity for regulation. Through this case study, relationships between product use and product outcomes became better understood. Snap is effectively contributing to outcomes of social connection and information access, while Uber is contributing to increased mobility. Still, each company could do more. Snap could contribute to improved health literacy, healthy relationships, and reduction in loneliness, depending on information campaigns implemented. Uber could positively influence the physical activity of users through featured modalities (i.e., greater emphasis on biking, scooting, and walking).

Reporting is how distinct stakeholders communicate: how companies report is how investors evaluate. Mandating that corporate reporting include health impact would hold companies accountable to consider how their product development decisions affect the health of their users (Pérez, 2015; Kickbusch et al., 2018; Wilson, 2022; Ajayi & Mmutle, 2021). Such regulation might also introduce a common language for creating a healthy product environment. That is, how companies position themselves in their public-facing materials contributes to how they are perceived and assessed as much as the products themselves (Forman & Argenti, 2005; Van Riel & Fombrun, 2007). Indeed, all conclusions in this case analysis are limited to the perception of publicly available sources.

Existing products can still be adapted to become health-positive before policy catches up to technology. The opportunities presented in Table 3 and 4 are examples of that, but each company would need to assess the business perspective. To do so, a company can first identify the user behaviors it could impact. At minimum, technology companies influence how users engage with others, and how they spend their time. Next, a company can identify its products' levers of influence (e.g., content availability, marketplace prominence, pricing), then assess the risks and benefits to using those levers

to intentionally create positive health impact. Once that decision has been made, a clear plan must be outlined for measuring and enforcing health impact through product policy to avoid a moot effort. Self-imposing accountability mechanisms, similar to sustainability assessments, could be considered. After building functionality or implementing changes within existing designs, the company can evaluate the health impact achieved. Iteration would be assumed: digital products can and should always be continuously refined to improve outcomes, and health outcomes are no different should a company choose to prioritize them.

Limitations

While exploring the health impact of products on their consumers is an exciting new field of research, this also creates limitations. There is minimal publicly available data to consult as a baseline, putting pressure on this research to contribute reliable evidence as a strong foundation on which others can build. While the findings here are consistent with those from separate studies with distinct methodologies from this same research team (Sigler, 2022), these conclusions are restricted in their generalizability given the limited samples used.

Conclusions

This case study demonstrates the tremendous untapped potential in the tech sector to intentionally design products that sustainably influence health behaviors and promote health, particularly through new uses of existing features. As with other social impact initiatives, companies will need to leverage external partnerships and subject matter experts to actualize this opportunity. The learnings from this analysis provide a path forward for companie that boldly embrace intentionally designing products to influence health behaviors and promote health.

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CHRONICLES OF HEALTH IMPACT ASSESSMENT
Improving Community Health Through Health Impact Assessment

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PEW ANNOUNCEMENT

HEALTH IMPACT PROJECT

Nearly 14 years ago, Pew and the Robert Wood Johnson Foundation (RWJF) launched the Health Impact Project. Together, we committed to **boosting health equity** by promoting health-focused decision-making in transportation, housing, social and economic policy, education, and other sectors.

Over time, we broadened our work to support a range of Health in All Policies (HiAP) approaches, including cross-sector collaborations and rapid-response approaches such as legislative health notes, and to deepen our emphasis on equity.

Through collaboration, we've **accomplished our key goals**:

1. **Build capacity** among community and government organizations to use health impact assessment (HIA) and HiAP approaches to effect policy change.
2. **Increase awareness** among policymakers about the factors that shape health.
3. **Galvanize** philanthropic partners.
4. **Expand use of HiAP approaches** across the United States.

Over the past year, we spoke with many of you about our plans to close out the work of the Health Impact Project. As federal, state, and local initiatives build momentum, it is time for us to **pass the torch** to the many leaders championing this effort.

One common reflection we hear from our grantees is that the relationships forged and strengthened through HIA and HiAP work are often the greatext outcome. Although the Health Impact Project is ending, I feel confident that our large network of committed partners will continue to work together toward meaningful change and a healthier, more equitable future.

RICHARD M. FAIRBANKS SCHOOL OF PUBLIC HEALTH

THE SOCIETY OF PRACTITIONERS OF HEALTH IMPACT ASSESSMENT SOPHIA

Over the years, the project has worked alongside many partners, organizations, and people devoted to this work. While there are too many to list here, you know who you are, and we are grateful for your collaboration and continued commitment to our collective mission.

All of us at Pew **thank you** for your support over the project's tenure. As we transition, take a look through some of the achievements we're proud to have been a part of - and check out a few ways to stay in touch with Pew.

Sincerely,
Ruth Lindberg
Director, Health Impact Project

Please visit the Health Impact Project **website**.

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CALL FOR CHRONICLES OF HEALTH IMPACT ASSESSMENT (CHIA) PEER REVIEWERS

We appreciate your interest in supporting the CHIA journal as a peer reviewer. In this role, you will be asked to read submitted articles. If you do not have time you can decline the invitation to review and will be placed back in the rotation for future opportunities. If you do have time, your review will address the following:

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