LEAP

lifetime eating and physical activity practices

PROGRESS REPORT

Acknowledgments

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Draft for public comment

This document is a draft for public comment of the full *LEAP Progress Report*. We are seeking feedback about the content, especially the indicator focus areas, recommendations, and next steps. Consider sharing your feedback by visiting https://communityengagement.uncg.edu/leap/ and completing the progress report survey.

How to cite

Because this is a draft for public comment, *we recommend that you do not cite this paper at the moment*. Instead we hope you will wait until we publish the final report. However, if you need to cite the current document, we recommend using this example for citation purposes.

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About LEAP

LEAP is a collaboration between UNC Greensboro, Cone Health, and Guilford Health Department, with support from Guilford County Schools, Greensboro Parks and Recreation, and Ready for School, Ready for Life. The purpose of the effort is to identify common goals and measures that existing program providers and residents can use to inform their health and wellness efforts. LEAP is bringing together multiple stakeholders across the county to collectively determine these goals and measures through various meetings.

Visit us at https://communityengagement.uncg.edu/leap/ or email us at LEAP@uncg.edu

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Executive Summary

Developing routine healthy eating and active living practices continues to challenge many communities across the United States. In North Carolina, Greensboro and Guilford County are regularly recognized among cities and counties experiencing high rates of food insecurity, diet-related illness, and low rates of access to healthy food and physical activity. Lifetime Eating and Physical Activity Practices (LEAP) focuses on initiating community-based conversations around individual and social determinants of food and physical activity choices in Greensboro and Guilford County. In partnership with UNC Greensboro, Cone Health, and the Guilford County Department of Health and Human Services, LEAP promotes collaboration among a broad range of community partners to coordinate data and build networks in order to improve eating and physical activity practices in our city and county.

Process

Starting in January 2017, LEAP initiated a process to engage community partners in identifying and integrating community-level data around healthy eating and physical activity practices in Greensboro and Guilford County. With strategic funding through a UNC Greensboro seed grant, LEAP members established multiple points of contact with community members, city and county staff, health professionals, non-profit organization employees, and researchers. LEAP worked to create the following community-based networks:

- **Community Advisory Committee (CAC)**: A broad spectrum of individuals and organizations committed to advising the general scope and direction of LEAP efforts.
- **Data Advisory Committee (DAC)**: An intentionally-recruited set of researchers and organizational representatives committed to working with data. DAC members worked to identify and integrate existing data and developed recommendations for collecting community-level data.
- **Community Action Networks (CANs)**: Groups of individuals and organizations committed to translating community-level data into improved healthy eating and physical activity practices. CAN members worked around specific focus areas including birth moms, early childhood, and K-12 education.

Between May 2017 and May 2018, LEAP organizers engaged these groups in a series of meetings to surface and prioritize community-level data needs. The work culminated in a summit, which served to confirm consensus on six health-data priorities.

Outcomes and LEAP Data Priorities

As an extension of the work from our community partners, LEAP has identified the following six priority areas for community-level data on healthy eating and physical activity practices:

- **Eating Practices**: individual- and family-level data regarding regular and routine eating behaviors. Data includes what (choices, types), how much (quantity), how often (frequency), and why people in Guilford County eat and drink.
- **Physical Activity Practices**: individual- and family-level data regarding regular and routine physical activity behaviors. Data includes how (activity type), how much (activity intensity and duration), how often (frequency), and why people in Guilford County move.
- **Barriers to Healthy Eating and Physical Activity:** individual-, community-, and social-level data regarding what prevents people in Greensboro and Guilford County from engaging in healthy eating and physical activity practices. Data includes access to neighborhood resources, knowledge of available resources, and social determinants of health.
- **In/Security:** community and social level data regarding the availability and affordability of local resources. Data includes food insecurity and food hardship rates as well as transportation access and social support networks.
- **Health Literacy**: individual- and community-level data that focuses on knowledge and skills for practicing healthy eating and physical activity habits. Data includes knowledge and ability to translate healthy eating and physical activity advice into everyday practices.
- **Self-Efficacy**: individual- and family-level data that focuses on the confidence and capacity that people in Guilford County have to change their practices.

Key Recommendations

From the iterative process involving our broad range of partners, LEAP created a set of recommendations and next steps. These recommendations and next steps focus on establishing regular and routine systems to collect data and translate results into healthy eating and active living resources for Greensboro and Guilford County. Some of the key recommendations and next steps include:

- **Focus on Data Gaps**: Partners identified key gaps in data regarding the *sources* of food and physical activity for people living in Greensboro and Guilford County. In other words, where do people actually purchase food and engage in physical activity? A key priority is to begin filling those gaps with local data and stories.
- **Develop a Community Board**: Although LEAP engaged a broad range of stakeholders, partners recognized a need to develop a more formalized structure to ensure community participation and leadership. We recommend establishing a Community Board to advise LEAP, advocate for local priorities, and initiate and secure points of contact from multiple constituencies across Greensboro and Guilford County.
- **Address both Individual Behaviors *and* Social Determinants of Health**: Many health efforts prioritize *either* individual behaviors *or* social determinants of health, but participants across LEAP meetings noted how communities and agencies need an understanding of *both* how individuals make changes *and* how their choices are often constrained by larger factors.

Introduction to LEAP

Our communities and health systems continue tackling our most pressing health problems. In the twentieth century, we conquered infectious diseases like smallpox and polio and built a coordinated trauma response system that brings emergency medical personnel to the site of a car crash or someone's home within minutes of calling 911. The average length of life in the United States in 1960 was 67 years; today we are living almost 80 years. Yet many of us have our lives cut short. LEAP is focused on addressing today's health problems: the diseases that develop from lives with more sitting than walking, more fast food than fresh fruits and vegetables, and more screen time than face-to-face engagement.

Cardiovascular disease, stroke, and diabetes are the second, fourth, and seventh leading causes of death in North Carolina (CDC, 2015; NC State Center for Health Statistics, 2017). This disease burden, or decreased health and/or death, is strongly tied to physical inactivity and obesity (CDC, 2015; Lee et al., 2012); 50% of adults are obese or overweight and do not meet minimum physical activity requirements of at least 2 hours and 30 minutes of moderately-intensive aerobic physical activity a week (Office of Disease Prevention and Health Promotion, 2018) and 1 in 5 adults are entirely inactive. These issues are greatest among people with low income (18% fewer meet physical activity recommendations if income is <$15K vs. >$50K) and African-American/Hispanic populations (11-13% are more likely to be overweight/obese than White non-Hispanics). Additionally, 20.9% of children live in food insecure households that lack access to healthy foods (Feeding America, 2018). Unless these health disparities (i.e., decreased health due to social, economic, and environmental disadvantages) are addressed, and eating and physical activity behaviors are improved, more than 85% of people in the United States are expected to be overweight or obese by 2030 (Wang, 2008). Because 25% of children are already overweight or obese and do not get the recommended 60 minutes of physical activity per day by the time they reach middle school (NCSCHS, 2010), early intervention is critical. Moreover, 80% of these children are predicted to remain obese as adults and develop early risk for chronic disease (e.g., diabetes and heart disease; Ogden et al., 2014). If we are to prevent negative physical and mental health outcomes associated with inactivity and obesity, there is a critical need for feasible, evidence-based interventions that promote healthy lifetime eating and physical activity practices early in life (Lee et al., 2012; Nader et al., 2006).

While several collaborative efforts have been initiated in Guilford County to direct programming efforts and address eating and physical activity disparities, there remains a lack of measures that serve as indicators of healthy eating and physical activity to inform and guide best practices, systems, and countywide policies. For example, during the 2016 Guilford County Community Health Assessment (CHA), participants in the action planning meetings articulated a desire to use a range of health measures that were not regularly or routinely collected. Although the CHA based their data collection on input from numerous sources—including UNC Greensboro, Cone Health, and the United Way—participants expressed the need to know more, especially as they translate data into action. Community partners, such as local nonprofits, have also pointed out that even though meaningful data may exist, such data are not accessible at the neighborhood or community level, nor are they collected regularly. Without valid measures to drive evidence-based initiatives and evaluate program effectiveness, some initiatives, such as Piedmont Health Counts and CHA, have attempted to collect and compile existing data and measures. Moreover, UNC

Greensboro has missed opportunities for student and knowledge transformation in providing these data, as local organizations have contracted with researchers elsewhere outside of the county for data collection and analyses services.

Having identified a perceived need for data about eating and physical activity, UNC Greensboro faculty partnered with community and health agencies to create LEAP—a partnership dedicated to examining Lifetime Eating and Physical Activity Practices. LEAP was sparked by community conversations initiated by Dr. Jake Hochrien (Chief of Heart and Cardiovascular Health, Cone Health) and Dr. Sandra Shultz (UNC Greensboro, Kinesiology), who began meeting in February 2016 with representatives from nonprofits, Guilford County Schools, healthcare service providers, and city and county representatives. They wanted to gain an understanding of how, collectively, community-serving organizations can positively change the culture of lifetime eating and physical activity in Guilford County. From those meetings emerged LEAP, whose overarching goal is to collaboratively engage with a broad array of researchers, community-serving organizations, and community members to develop common goals and common indicators and to promote, evaluate, and implement best practices for improving lifetime eating and physical activity practices. Toward this end, numerous researchers and community partners might more closely align their programs, policies, research, and educational activities to collectively improve health outcomes associated with lifetime eating and physical activity practices in our community.

This project is significant because it directly addresses a need identified by community partners in Guilford County, specifically, how both real and perceived gaps in data are limiting the effectiveness of health providers and educators in promoting healthy eating and physical activity practices across communities. In this way, LEAP is consistent with Guilford County's and North Carolina's plans to address obesity, healthy weight, and healthy communities by increasing physical activity and consumption of fruits and vegetables by 2020 (Eat Smart, Move More, 2013; Guilford County Community Health Assessment, 2016). This progress report chronicles an 18-month process to engage community stakeholders (e.g., health care professionals, researchers, nonprofits, the school system, and city and county departments) in identifying common goals and common indicators around lifetime eating and physical activity practices. We begin by outlining the data landscape in Guilford County specific to these topics, followed by a more detailed description of LEAP's process, major focus areas, recommendations, and next steps.

Navigating the Data Landscape for Eating and Physical Activity Practices

Researchers, health professionals, and others seeking to navigate the data landscape relating to the physical activity or nutrition of Guilford County residents encounter an uneven terrain depending on the kinds of data they seek. Data pertaining to chronic disease mortality (i.e., death due to chronic diseases such as diabetes and heart disease), linked to nutrition and physical activity are readily available. Data on the prevalence of those living with chronic disease are more challenging to obtain, while data on individual dietary and physical activity behaviors are the most difficult to acquire and may not be available at all, except through special data collection efforts. Those seeking data for subgroup categories of age, sex, and race/ethnicity; special populations such as immigrants and refugees; or sub-county geographic areas face additional challenges depending on the type of data being sought. In this section, we offer a descriptive landscape of Guilford County data types, sources, and challenges, then identify five sources for accessing useful data (see Figure 1).

Mortality and Morbidity Data

In North Carolina, all deaths are legally required to be reported to the local health department and are compiled by the NC State Center for Health Statistics (SCHS). Using the reported information, SCHS then provides the public with various reports, briefs, and health statistics.

- Detailed Mortality Data: chronic disease conditions linked to physical activity, nutrition and obesity, state- and county-level data that can be organized by age-group, sex, and race.
- County-Level Health Data Book: Data can be organized for age-adjusted race and sex-specific.
- County Health Data Book: aggregated inpatient hospital utilization and charges by principal diagnosis and county of residence. Includes average length of stay, total charges, average charges per day, and average charges per case by diagnostic category.
- NC Mortality Files: North Carolina resident deaths, with underlying and contributing causes of death, along with demographic characteristics and residential location of the decedent.
- Cancer Profiles: Only in the case of cancer is there a statewide registry to which all diagnosed cancer cases are reported. The North Carolina Cancer Registry produces county-specific cancer profiles and projections.

Additionally, Guilford County Department of Health and Human Services, Division of Public Health's Health Surveillance and Analysis Unit (HSAU) provides publicly available mortality data and has the capacity to map mortality data for the county and sub-county geographic areas, including municipalities, ZIP Codes, and census tracts (i.e., geographic areas defined for the purpose of collecting census data, usually the size of a neighborhood).

Hospital discharges and Electronic Medical Records (EMR) data are potential sources of much useful data regarding morbidity due to conditions related to nutrition and physical activity. While combined hospital discharge data—with no personally-identifiable information—are available through SCHS, detailed individual discharge and EMR data are protected by HIPAA data privacy laws. Hospital system patient data could greatly contribute to assessment and community health improvement efforts, but procedures for obtaining hospital data for these purposes are not well developed, and those seeking data will, at minimum, be required to seek Institutional Review Board (IRB) approval for research and data privacy protection plans.

Data on Individual Physical Activity, Nutrition, and Obesity

Behavioral Risk Factor Surveillance System (BRFSS). Typically, the only way to obtain information about individual obesity, physical activity, and dietary information is to ask people. Since 1984, the most widely available and utilized source of these kinds of individual risk-factor data is the Behavioral Risk Factor Surveillance System survey (BRFSS). The Centers for Disease Control (CDC), in collaboration with state health departments, conducts the nationwide, randomized telephone survey with 400,000 adult interviews continuously each year. Until 2011, the SCHS published BRFSS survey data at the state, regional, and county levels, with some sub-group breakdowns—sex, race, education, and income. Among other risk factor measures, the BRFSS has measures of chronic disease prevalence, consumption of fruits and vegetables, physical activity, and obesity. For many years, NC counties widely used the BRFSS results to support Community Health Assessment efforts to supplement secondary morbidity and mortality data. However, because of the decline of landline telephones (due to cell phones) and the difficulty of assigning county-of-residence to randomized cell phone interviews, starting in 2011, the CDC discontinued publication of BRFSS estimates at the county level. This change has had a major impact on community health assessment efforts in Guilford County.

Community Health Assessment. All county health departments in North Carolina conduct comprehensive Community Health Assessments (CHA) every three to four years as a requirement for accreditation. NC counties have been conducting regular community health assessments since the 1980s Community Diagnosis (CDx) program. In the 1990s, the bi-annual CDx program transitioned into quadrennial Healthy Carolinians CHAs that linked local assessment data to Healthy NC 2000 (and then 2010 and 2020) objectives, patterned after the national Healthy People 2000 program. Since the passage of the Affordable Care Act, nonprofit hospitals are also required to conduct a Community Health Needs Assessment (CHNA) every three years. Many county health departments in North Carolina—Guilford County included—partner with local hospitals to conduct joint CHA/CHNAs. In a CHA/CHNA, a wide range of community partners assess various health and health-related data, identify health priorities, and develop action plans to address those priority health concerns. CHA requirements include the necessity of collecting primary data in addition to secondary morbidity and mortality data. Primary data collection can be in the form of qualitative data (e.g., focus groups or listening sessions) or can be quantitative data (e.g., surveys). Since the loss of BRFSS data at the county level, there has been a greater impetus to conduct community health surveys, as was done in the 2016 CHA/CHNA.

The Guilford Health Partnership (GHP). The GHP formed in 1997 and is made up of the Department of Public Health, Cone Hospital, and High Point Regional Hospital. The purpose of the GHP is to sustain the collaborative relationships and procedures of the community health assessment process in Guilford County. Primary data collection included random-digit-dial telephone surveys in both 1997 and 2000 but relied on county-level BRFSS for data on measures of individual-level risk factor behaviors during subsequent assessment cycles until conducting a supplemental high-poverty-area-focused survey in 2009. The loss of county-level BRFSS data necessitated a new community survey.

Guilford County Community Health Survey. In 2016, GHP collaborated with staff of the NC Institute of Public Health and community volunteers to conduct a randomized in-person survey with Guilford County residents. GHP surveyed a total of 408 households. The Community Assessment Survey included questions on social and demographic characteristics; access to care; health status; health behaviors such as leisure-time physical activity,

consumption of fruits and vegetables, and tobacco use; height and weight; and environmental factors such as access to grocery stores, parks, and opportunities for physical activity. GHP drew many survey questions from the BRFSS to allow comparison with previous baseline data and state and national data, while adding other questions based on input from the GHP Steering Committee and Assessment Team. Because permanent funding arrangements do not exist for CHA/CHNA primary data collection in Guilford County, a follow-up survey may or may not be conducted depending on the availability of funding.

Modeled BRFSS data. In response to the loss of local data through the BRFSS, the CDC developed methodological approaches, using statistical modeling, to generate BRFSS estimates at the county level and even down to the census-tract level. Modeled data builds on existing Guilford County landline phone data and augments these data with data from other jurisdictions around the country that have similar socio-demographic characteristics. Some modeled physical activity, obesity, and food access measures from the BRFSS are available at the county level through the County Health website. The CDC's 500 Cities project publishes modeled BRFSS data for obesity and physical inactivity, among other measures, for the nation's 500 largest cities—including Greensboro and High Point—down to the census-tract level. Modeled data can be useful to get an idea of the distribution of health risk factors, but both the CDC and the County Health Rankings—a partnership between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute—warn that modeled estimates should not be used for evaluation of community interventions.

Childhood data for physical activity, nutrition, and obesity. Those seeking data for children face unique challenges. Most health surveys, including the BRFSS, interview adults over the age of 18. Surveying children involves additional work—such as obtaining parental informed consent and IRB approvals—adding to the cost and logistical complexity of conducting youth surveys.

One approach to addressing the age gap in individual risk factor survey data is the Youth Risk Behavior Surveillance System (YRBSS). Like the BRFSS, the CDC developed the YRBSS and conducts it in collaboration with state health departments. But unlike the BRFSS, the YRBSS is conducted with students in middle school and high school classrooms. The YRBSS has a range of questions on unhealthy dietary behaviors and inadequate physical activity. A major limitation of the YRBSS is that, because of the statewide school randomization procedures, county-specific survey estimates are not published. To remedy this problem, UNC Greensboro and other community organizations partnered with the Guilford County School District to conduct special Guilford County-specific YRBSS surveys in county middle and high schools in 2003, 2008, and 2011, but the YRBSS has not been conducted in the county since that time. Future implementation of the YRBSS survey in the county will require special funding and support from the school district.

Additionally, North Carolina's State Board of Education (2011) requires fitness testing in grades K-8. In Guilford County this testing is conducted twice a year using the FitnessGram assessment, which measures BMI, cardiovascular endurance, muscular endurance, muscular strength, and flexibility (Guilford County Schools, n.d.). Currently, this data is not available to the public.

The geography of local data. As early as 1974, the NC State Center for Health Statistics began publishing county-specific health data, a practice that continues with the annual publication of the County Health Databook to support local community health assessment efforts, and numerous other sources exist for county-level data. However, those seeking healthy eating and active living (HEAL) data for sub-county geographic areas (i.e., "neighborhoods") may encounter significant challenges. This is due in part on what we might refer to as the paradox of small area research: It requires data from a large

number of people to generate data for small geographic areas. Consider that the NC State Center for Health Statistics does not include morbidity and mortality rates of counties with fewer than 20 cases of a particular condition because rates based on small numbers may be statistically unstable. Guilford County has 118 inhabited census tracts. Having sufficient numbers of cases to calculate rates for all 118 census tracts requires large datasets, so calculation of disease or mortality rates at the census-tract level typically requires collection of multiple years of data to have enough cases in each tract.

Sub-county geographic areas include municipalities, ZIP Codes, census tracts—made up of census block groups and census blocks—and neighborhoods. HEAL data for larger municipalities, including High Point and Greensboro, can be found through data systems such as the CDC's 500 Cities project. ZIP Code areas were designed for efficient delivery of letters and packages, but for purposes of health assessment or program implementation, ZIP Code areas have the disadvantage of cutting across other geographic boundaries including county, city, and census tract, and tend to be heterogeneous with respect to socio-demographic characteristics. Frequently, however, ZIP Code data may be the only indicator of sub-county residence available. The county has many named neighborhoods—over 50 neighborhoods are included in Greensboro's Neighborhood Congress—but neighborhoods are, generally, geographically not well defined. For those looking for neighborhood-level data, data geocoded and aggregated at the census tract or census block group may be the best option available. True neighborhood data for HEAL is likely to require special neighborhood-level surveys or other data collection.

Special populations and qualitative data. Those seeking HEAL data on some special populations, such as immigrants and refugees or pregnant women, may need to engage in special data collection efforts. In most cases, it is not possible to identify immigrants and refugees through race/ethnicity questions or other identifiers in relevant health-related data systems. One approach to collecting HEAL and other health-related data from special populations is through the collection of qualitative data. The 2013 Guilford County Community Health Assessment conducted focus groups with Spanish-speaking immigrants, French-speaking African refugees, and Nepali-speaking Bhutanese refugees, which were the largest groups of refugees coming into Guilford County that year. Focus group participants discussed questions relating to barriers to healthy eating and healthy food access. Qualitative data can fill in gaps when quantitative data are not available as well as provide context and a richer understanding of the issues.

Piedmont Health Counts website. To bring together many health and health-related data in one easy-to-access location, the GHP Community Health Assessment collaborative partnered with the Conduent Healthy Communities Institute to establish the Piedmont Health Counts website. Piedmont Health Counts includes numerous indicators of healthy eating and active living (HEAL), a priority health issue identified in the 2016 CHA/CHNA, though there are gaps in the kinds of data available (e.g., there are few HEAL measures for children).

Five Sources for Accessing Useful Data

1. **NC State Center for Health Statistics (SCHS)**
   - Detailed Mortality Data (2016) - Includes chronic disease mortality linked to physical activity, nutrition, and obesity; state- and county-level data.
   - County Health Data Book - Includes age-adjusted race and sex-specific mortality; state-, regional-, and county-level data.
   - Behavioral Risk Factor Surveillance System - Telephone survey data includes individual obesity, physical activity, and dietary data; measures of chronic disease prevalence; consumption of fruit and vegetables; physical activity and obesity; includes state and regional estimates.

2. **Health Surveillance and Analysis Unit (HSAU)**
   Guilford County Department of Health and Human Services, Division of Public Health
   - Mortality Data Brief Surveillance Reports - Includes chronic disease and leading causes of death; also has the capacity to geocode and map mortality data for the county and sub-county geographic areas, including municipalities, ZIP Codes, and census tracts.
   - Community Health Assessment (CHA) - Publishes periodic Community Health Assessment (CHA) reports that include secondary and primary data in the form of community surveys and focus groups.

3. **Centers for Disease Control**
   - 500 Cities Project - Modeled BRFSS data for obesity and physical inactivity for Greensboro, High Point, and census tracts.

4. **Piedmont Health Counts**
   - Community Dashboard - Healthy eating and physical activity indicators, social and environmental determinants of health, and other health and health-related data; includes Guilford and Alamance counties, ZIP Codes, and census tracts.

5. **County Health Rankings and Roadmaps**
   - Guilford County Health Rankings and Comparisons - Includes measures of length of life, quality of life, health behaviors, access to clinical care, social and economic factors, and physical environment for all counties in the United States, with comparisons to state and national benchmarks.

Note: The purpose of this list is to provide a starting point from which readers can begin accessing the available eating and physical activity data for Guilford County. See Appendix A for a fuller table.

Figure 1: Five Sources for Accessing Useful Data

LEAP's Process for Engaging Communities

This section describes the process used by the LEAP team to identify initial partners and participants, the selection of healthy eating and physical activity as a community-identified priority, and the process to convene people and organizations to identify common goals and common indicators for Greensboro and Guilford County. In an effort to make our process transparent and illustrate how we are approaching community engagement, we concentrate on how we engaged partners to increase collective impact and how we targeted specific voices to clarify the scope and meaning of the data problem. We also provide additional details about the timeline and data management strategies we followed to produce a list of indicator focus areas.

Engaging Partners to Increase Collective Impact

As mentioned previously, LEAP was sparked through a series of conversations in February 2016, led by partners from UNC Greensboro's Kinesiology Department and Cone Health. A key outcome of those meetings was the identification of the need for community-level data. We heard community partners of nonprofits, education, and healthcare sectors say they needed the focus to remain on identifying meaningful indicators and metrics, and the collection of usable data, rather than an initiative that asks them to develop new or enhanced programs. At this same time, the UNC Greensboro Provost offered funding for UNC Greensboro faculty to establish or "seed" community-university partnerships. This provided the opportunity for UNC Greensboro researchers to facilitate, with community partners, the development of first steps to identify common goals and common indicators for community-level data for Guilford County.

The LEAP initiative, therefore, followed a community-engaged approach (Strand, Marullo, Cutforth, Stoecker, & Donohue, 2003). Drawing from the Carnegie Foundation for the Advancement of Teaching and Learning definition, we define community engagement as the "collaboration between institutions of higher education and their larger communities for the mutually beneficial exchange of knowledge and resources in a context of partnership and reciprocity" (n.d., para. 1). This means that the LEAP team is made up of community and university partners and values and incorporates the diverse knowledge, resources, and expertise of partners supporting health and wellness in Guilford County. The intent for the work to be mutually beneficial means that partners are involved because they think the work and outcomes will advance the mission and goals of the groups and organizations they represent. This community-engaged approach is important because it allows all partners to gain insights as well as serves to further build capacity of partners through increased understanding of the issue and the skills, knowledge, and resources that various partners can provide.

In addition to community-engaged principles and approaches that tend to describe the relationship of universities to community initiatives specifically, LEAP also looked to principles and best practices used in *collective impact* (see Kania & Kramer, 2011). Collective impact is an approach to "moving the needle" on key community priorities through large-scale, collective action among diverse stakeholders across a community. The collective impact research shows that successful initiatives "typically have five conditions that together produce true alignment and lead to powerful results: a common agenda, shared measurement systems, mutually reinforcing activities, continuous communication, and backbone support organizations" (Kania & Kramer, 2011, p. 39). Examples of collective impact include Shape Up Somerville (Somerville, MA) and STRIVE

(Cincinnati, OH), which focus on improving health and education, respectively.

Although the core research team drew from best practices informed by collective impact models, LEAP itself is not expressly a collective impact initiative. Rather, the focus of LEAP's initial 18-month effort was to provide a preliminary structure that could clarify the data needs with the community partners who presented the problem, support connections among partners, and begin the process of identifying a common agenda about indicators for healthy eating and physical activity in Guilford County. In this way, LEAP concentrated less on developing programs and more on the challenges of collecting regular and routine data. Our early conversations with community representatives from nonprofits demonstrated their desire that LEAP not yet focus on asking programs to align activities, but rather to focus efforts on creating primary, community-wide data that could later be used by community-serving organizations. Therefore, drawing from the collective impact framework, LEAP understands the importance of establishing common goals and common indicators, with the understanding that data is a key component of creating community change, given "you can't change what you don't know about." Guilford County is program rich yet challenged by both real and perceived gaps in data—especially as they relate to timely, detailed, and accurate information about the health of our residents. Good data helps us set goals and track progress.

Framing the Initial Voices

A key aspect of community-engaged approaches is that the work focuses on community-identified priorities with the key constituents who have called attention to the issues. The question of whose voices to engage and when to engage them presented a particularly poignant challenge for the LEAP team. Because eating and physical activity practices are a part of every person's life, ostensibly every person living in Guilford County might be considered a key constituent. Moreover, barriers to healthy eating and physical activity resources in lower-income communities often mean that residents in those neighborhoods are vitally important to understanding how to promote a culture of health. At the same time, the problems associated with eating and physical activity *data* were presented to LEAP's core research team by healthcare and education professionals, nonprofits, city and county agencies, and researchers. As a point of entry to address eating and physical activity data, we identified professionals working with communities to understand existing areas of work to collect data, to identify interested constituents, and to articulate what common goals for data collection and use might look like. As with any community-engaged effort, we started with the community-identified priority, and then sought to understand how best to approach the priority, allowing partners and processes to emerge as appropriate to the context. In doing so, LEAP took the time to fully grasp the problem identified by the community of health providers, nonprofits, and government agencies before engaging community voices on a larger scale.

While the vision for LEAP extends beyond the initial seed funding provided by UNC Greensboro, initial phases focused on collaborating, primarily, with representatives of nonprofits, healthcare, education, and government sectors who have expressed the desire and need for good data for decision-making (e.g., establishing goals and benchmarks for service and program outcomes). Although LEAP's core research team prioritized the professional voices who brought the problem to the table, we did not ignore voices from a broad base of constituents. LEAP engaged community voices by convening several advisory and activity groups. Figure 2 outlines the Community Advisory Committee (CAC), the Data Advisory Committee (DAC), and the Community Action Networks (CANs). These groups provided both input and guidance during LEAP's efforts to articulate the scope of the problem and identify common agenda points and indicators.

Community Advisory Committee (CAC)	Data Advisory Committee (DAC)	Community Action Networks (CANs)
Large, open invitation **Purpose:** To continue to communicate with and connect to a broad spectrum of individuals and organizations about the LEAP initiative. **Members**: Individuals and representatives of groups and organizations who seek to improve eating and physical activity in Guilford County. **Role**: Receive updates, provides input, and connect LEAP to key constituents in Guilford County and beyond. **Time Commitment**: Ongoing. Meet 2 times in fall and 2 times in spring, attend summit.	*Small team, invite only* **Purpose:** To ensure the best possible selection of LEAP indicators and measures, drawing on existing data, current research, and evidence-based practices. **Members**: Data "geeks" and researchers. **Role:** Guide the selection of indicators and measures to be discussed in CANS and select measures and indicators to discuss at large community summit (based on input from CANS). **Time Commitment**: Time limited. Meet 2 times in fall and 2 times in spring, attend summit.	*Large, open invitation, topic specific* **Purpose:** To inform indicators and measures, especially as they relate to early life, including prenatal & early childhood, K-12 youth, and early adulthood. **Members**: Program directors, data "geeks," and researchers who think about these LEAP populations. **Role:** Identify and inform indicators and measures as presented by the DAC. **Time Commitment**: Ongoing. LEAP Core Team members will reach out to agencies to meet with them. We will also convene two CAN meetings that will be open to anyone. Invited to attend the summit.

Figure 2: LEAP Advisory and Action Groups, 2016-2018

The CAC served as an open-invitation group who met primarily during LEAP's early stages to help define the scope of the problem, plan initial steps, and begin developing an existing bank of measures and indicators. The DAC focused on the researchers and community partners most familiar with collecting, analyzing, managing, and communicating data. The DAC was largely responsible for synthesizing and refining information provided by the CAC and CANs, using the filter of their expertise in data management. Finally, through a series of focus

group interviews, the CANs provided input regarding important questions to ask communities about eating and physical activity practices. CAN contributors came from a variety of backgrounds—primarily healthcare and education professionals, researchers, representatives from nonprofit organizations, and city and county agencies—and select CAN focus groups also engaged food access advocates, immigrant and refugee community members, and community leaders from neighborhoods identified as food deserts. CAN groups focused most of their conversations on specific groups, including birth moms, K-12 students, college students, and communities/neighborhoods. Input from DAC and CAN partners served as the primary drivers for developing the focus areas and indicators. Appendix C provides a complete list of organizations and neighborhoods represented across the advisory and action groups.

Outlining the Phases of LEAP Activity

The primary purpose of LEAP is to identify common goals and indicators, in an effort to build shared data collection strategies and resources regarding lifetime eating and physical activity practices. Related to that purpose is the need to engage multiple voices in the conversation, starting with the partners who first raised the data challenges facing Guilford County. Also related are the needs to articulate the scope and relevance of those challenges before taking the message to a larger audience as well as to specify existing and available data, both real and perceived gaps in that data, and possible strategies to fill those gaps. As such, LEAP's core research team pursued these aims across four phases of activity, which are detailed both here and in Figure 3:

- **Phase 1:** LEAP initiated the planning, information gathering, and convening activities with various stakeholder groups. LEAP's core research team established both the Data Advisory Committee (DAC) and a series of Community Action Networks (CANs) to initially prioritize the local indicators and focus areas that are important to Guilford County health organizations. As part of this process, we reviewed existing assets and data gaps related to eating and physical activity practices, and we created a preliminary bank of indicators and key concepts.
- **Phase 2:** LEAP convened the DAC and CANs in an iterative process to identify existing indicators and measures, current availability of data, and desired local indicators. The DAC featured a relatively consistent group of members who met a total of four times over six months. The DAC first reviewed the list of existing measures and indicators and provided guidance on how to synthesize information to meet needs in Guilford County. The CANs were convened first through a series of focus group meetings to discuss data priorities and then in two strategic convenings to review and provide feedback on work produced by the DAC. In this way, LEAP was able to solicit a broad range of voices to construct a set of indicator focus areas.
- **Phase 3:** LEAP hosted a Summit in May 2018 at which health and education professionals, city and county agencies, nonprofit representatives, and researchers came together to review LEAP's work-to-date, including a list of indicator focus areas. Attendees at the Summit helped LEAP's core research team prioritize both the most important and the most feasible areas through which to start the next steps.
- **Phase 4:** LEAP has produced this progress report to disseminate both to stakeholders who have participated in the project, thus far, as well as other community members and potential partners whose input is needed as LEAP moves forward. LEAP's core research team will continue to convene partners and collect community voices, in an effort to ensure the community-engaged nature of LEAP. We expect this report to serve as a foundational document for the concurrent development of grant proposals for programs, research, and education.

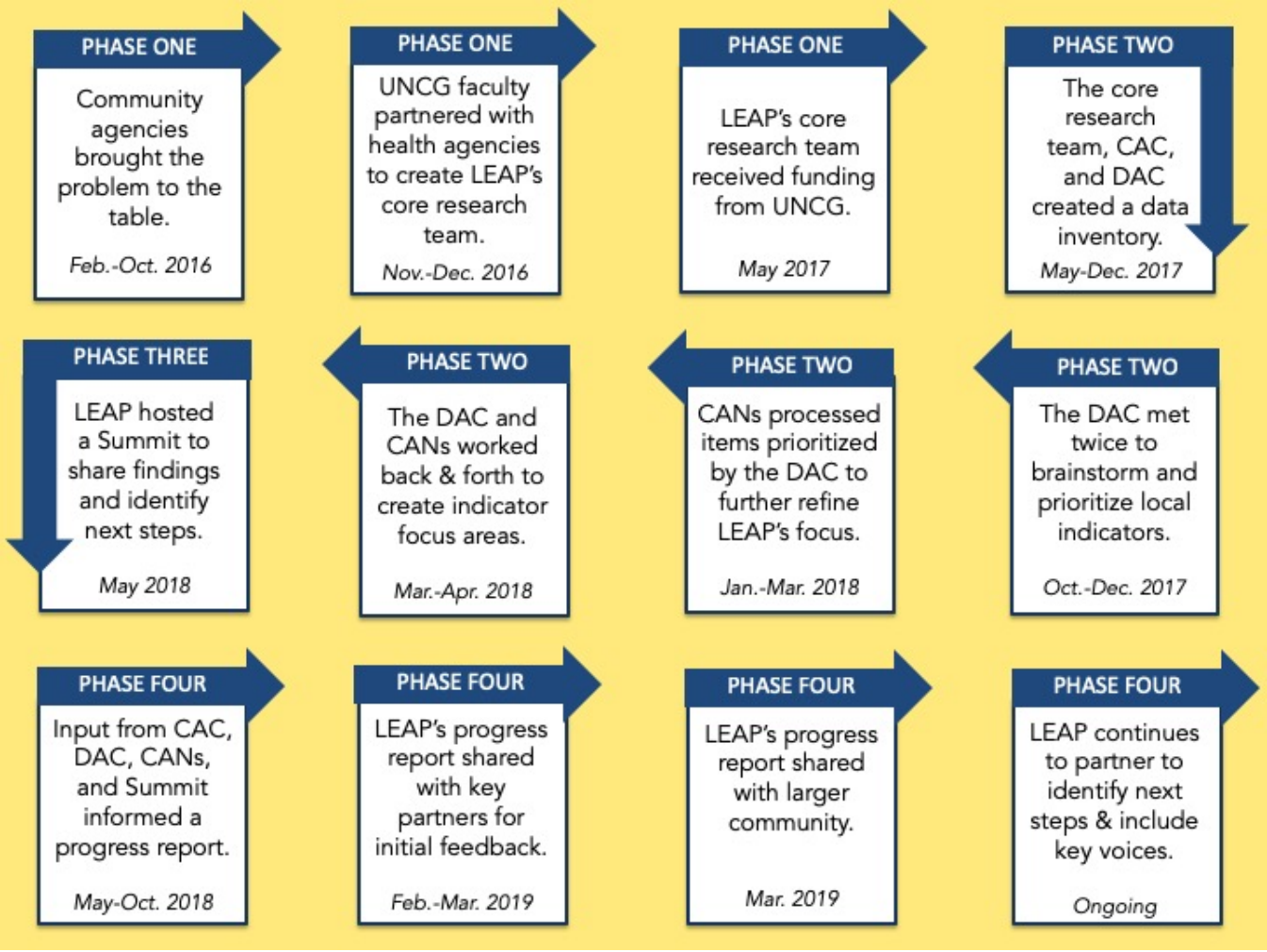

Figure 3: LEAP's Primary Activities for 2017-2018

Data Management and Analysis

Very early in our process, we recognized that the potential scope of LEAP—and the eating and physical activity challenges it might address—was far beyond what we could cover through our initial seed grant period. As we considered what kinds of data we might collect through this process, we saw the need to nest clusters of concepts and ideas related to eating and physical activity practices. More specifically, we recognized that eating and physical activity involved policies about food and exercise, social structures and traditions, environmental factors, and actual individual behaviors and practices. Figure 4 illustrates how we framed this nested approach. Realizing that we could not sufficiently address all four of these areas, LEAP's core research team decided to focus on the individual and environmental factors at the center of the nest because these seemed to be of most interest according to information gathered in the CAC, DAC, and CANs.

Figure 4: Nested Approach to Prioritizing Indicators

Data management for the initial phases of LEAP involved several layers of qualitative and archival research related to behaviors and practices as well as environmental resources and constraints. To best manage the data needs during these early stages, we opted for a grounded practical approach (Craig & Tracy, 1995), which allowed us to engage the theoretical, practical, technical, and philosophical needs that were communicated in the data through LEAP's partners. We also drew from Tracy's (2012) strategies for managing qualitative data, particularly in terms of organizing multiple types of data including field notes, interviews, feedback exercises, and archives.

In terms of data collection, LEAP's core research team kept detailed tracking and monitoring data for the DAC and CAN meetings as well as the culminating Summit.

- For the DAC meetings, we collected feedback forms at various points during the LEAP convenings, and we kept detailed field notes of conversations at each meeting. Whenever possible, we used multiple notetakers to capture small group discussions.
- For the CANs, LEAP researchers engaged in a series of focus groups and meetings with various stakeholders, where data included transcribed interviews and field notes.
    - Early in the process, we convened six focus groups to discuss what kinds of data would be useful to community partners and members[1]. The interviews were recorded and transcribed and helped inform early DAC meetings.
    - Later in the timeline, LEAP researchers organized more formal CAN meetings: First by engaging already existing groups,

[1] Two focus groups included a mix of community members and health professionals who work with food, a third captured voices of researchers who study some aspect of food and physical activity, the fourth was conducted with the Greensboro Community Food Task Force, the fifth focused on members and advocates from Greensboro's Cottage Grove neighborhood, and the sixth gathered perspectives from the health professionals who work with Greensboro's immigrant and refugee communities.

such as the Community Action for Healthy Babies network and UNC Greensboro Recreation and Wellness staff. These meetings also helped inform the work of the DAC as members began to synthesize key ideas into a list of indicator focus areas, and they also laid the foundation for two formal CAN meetings where participants reviewed early versions of that list for additional reflection and refinement. As we moved toward the Summit, we also began to ask DAC and CAN participants to identify formally their top priorities through both feedback forms and simple voting.

- For the Summit, we relied on a variety of formal and informal techniques, all of which were also documented through field notes.
  - We used *PollEverywhere* to gather quick information about Summit participants as well as the list of indicator focus areas that LEAP presented at the Summit.
  - We facilitated a dot-voting process to identify the most important and most feasible areas for LEAP's next steps.
  - We asked participants to share additional ideas through feedback forms.

Taken together, these data represent LEAP's efforts to engage multiple stakeholder voices, beginning with the professional and public voices who brought the problem to our attention. They also illustrate the iterative, back-and-forth process we used to identify the data needs and prioritize specific focus areas.

LEAP's core research team then began the process of analyzing the tracking and monitoring data that we gathered during our engagement practices. Team members responsible for analyzing the data relied primarily on techniques advanced through grounded practical theory (Craig & Tracy, 1995). We catalogued qualitative comments from the DAC meetings, focus groups, CAN meetings, and Summit separately. Leading up to the Summit, we used an open coding technique to identify and lift out specific patterns that were repeated across meetings. In doing so, LEAP researchers recognized indicator focus areas for further exploration:

- Eating practices
- Physical activity practices
- Barriers to healthy eating and physical activity
- In/Security
- Health literacy
- Self-efficacy

Following the Summit, we used those six categories to further refine the data and identify specific key terms to illustrate each of the six focus areas. In total, we coded 369 specific comments. Whenever possible, we also performed frequency counts of key terms across meetings—looking for frequency across as opposed to within meetings, to examine how potential indicators, measures, and data systems were regularly and routinely described in different contexts, by multiple stakeholders and partners.

The resulting list of indicator focus areas represents the culmination of 18 months of data collection, dialogue with community partners, and an iterative process of synthesizing voices and perspectives to find common goals and measures. The following section provides additional detail on each of the six focus areas, including definitions of terms, examples, and illustrations from our work with community partners.

Indicator Focus Areas

At the core of LEAP's efforts is a desire to provide more detailed, regular, and routine tracking and monitoring of data around eating and physical activity practices, so community partners in Guilford County can improve their programming and resource distribution. This section provides evidence for the six indicator focus areas that emerged through LEAP's processes of engaging community partners. We outline a focus on *eating practices, physical activity practices, barriers to healthy eating and physical activity, security, health literacy, and self-efficacy*. Each section features examples from the DAC, CAN, and Summit meetings, as well as potential data sources whenever possible.

Before we delve into the details regarding LEAP's six indicator focus areas, however, readers must understand how LEAP researchers used the terms indicator and measure as part of this project. Generally, "indicator" often refers to a more conceptual framing of a problem or health issue, while "measure" considers what and how data is collected around that concept. For example, Greensboro/High Point made headlines in 2015 when the Food Research and Action Center (FRAC) named it the metropolitan area with the highest rates of food hardship. FRAC argues that "food hardship" is an *indicator* for hunger. They *measure* it through one question from the Gallup organization's Healthy Living Index:

> Have there been times in the last 12 months when you did not have enough money to buy food that you or your family needed?

Put another way, indicators call attention to potential problems (i.e., if one does not have enough money for food, then one is more likely to experience hunger), and measures provide the tools for data collection to help understand the details of that indicator (i.e., use a survey to ask community members if they have enough money to buy food).

In moving toward identifying common goals, indicators, and measures regarding lifetime eating and physical activity practices, LEAP researchers identified key ideas that were regularly and repeatedly mentioned in the data. For example, many participants recognized, at the end of the day, that lifetime eating and physical activity practices involve what individuals consume and how they move. Although challenging to collect, these kinds of behavioral indicators remain important to satisfying LEAP's goals. At the same time, partners also noted several environmental and safety concerns that might keep people from eating and moving in the ways they want. If someone does not feel safe in their neighborhood—because of something as complicated as increased crime to something as simple as uneven sidewalks—asking them to "walk more in their neighborhood" might not be the most productive advice. The following six focus areas highlight where LEAP can begin to do its most meaningful work in developing local-level indicators, measures, and data systems. Appendix B also provides a shareable document that includes the indicator focus areas.

Focus Areas	Key Terms	Definitions
Eating Practices	choice, quantity, type, how often, rationale, water intake, Foods of Minimal Nutritional Value (FMNV), minimum dietary guidelines, motivation-intrinsic/extrinsic, source-fast food, source-garden, source-food pantry, source-community meal, source-free and reduced lunch (FRL)	What (e.g., choices, types), how much (i.e., quantity), how often (i.e., frequency), and why do people in Guilford County eat/drink?
Physical Activity Practices	choice, quantity, type, how often, rationale, water intake, motivation, sleep, intentional/unintentional activities, screen time, sedentary behavior, source-private, source-public, source-neighborhood, source-home, source-school, sports/leisure, individual/group	How (e.g., activity type), how much (e.g., activity intensity, duration), how often (i.e., frequency), and why do people in Guilford County move?
Barriers to Healthy Eating and Physical Activity	proximity, affordability-paid, affordability-free, health co-morbidities, access-[to what], safety, knowledge of resources, Social Determinants of Health-(what type), poverty	What prevents people in Guilford County from healthy eating and physical activity?
In/Security	affordability, access, availability, transportation, stability, food insecurity-[how is it being talked about], social support system,	What resources do people in Guilford County need to practice healthy eating and physical activity?
Health Literacy	functional eating practices (EP), functional physical activity (PA), interactive EP, interactive PA, source-[from where are you learning this? school, family, etc.]	Do people in Guilford County have the knowledge and skills for practicing healthy eating and physical activity habits?
Self-Efficacy	skills-[of what? cooking, meal planning, etc.], dependence-on self, dependence-on others, motivation	Do people in Guilford County have the confidence (and readiness) to consistently practice healthy eating and physical activity?

Table 1: Indicator Focus Areas

Eating Practices

LEAP identified Eating Practices as a central and key focus area for indicator and measurement development. Although a need exists to address barriers like access and poverty, which we will discuss in later sections, LEAP's core interest is in behaviors and practices. This means that understanding what people eat—as well as how much, when and how often, and why—is crucial to understanding the connection between how people make use of available resources and their related health outcomes. The majority of indicators on eating practices focus on self-report measures of fruit and vegetable consumption. Although fruit and vegetable consumption can provide insights into people's dietary patterns, less is known about details including where people get their food, how (or if) they are preparing it, and what their motivation to eat is to begin with. As such, eating practices emerged as an area for additional indicator and measurement development.

As an indicator focus area, LEAP first identified eating practices in the initial focus groups as well as the DAC meetings and the core research team's expertise. Consider the following exchange between a then-board member of a local co-operative grocery store in Greensboro (GSO) and a representative from a nonprofit organization that addresses health and poverty in High Point (HP):

> GSO: It is very important for us to know, what do people buy? Not just what do people need and what do people lack. What do people like? And so that was a big part of our research, asking people, also doing market research. We paid an independent grocery consultant to do market research in the area so we could find out. So people are reporting this but like what does the money say? What do people spend the money on and where? And so, we were able to do that.
>
> HP: For our backpack program, we collect data on "Why are you referring kids? Are they eating a lot more? Asking for seconds?" We have a lot of that kind of data that we're tracking on kids. We recently did a survey asking kids about things they eat or where do they get their food from. We did a kind of focus group of almost 200 kids at a youth food summit, and we asked them, "If you are hungry and your family doesn't have food, where do you get it from?" Those types of things that we were tracking just to try to find out some information.
>
> GSO: Is there something that like the city could do with that? I know you're working on supporting food entrepreneurship and things like that, but it would have been really helpful to have access to market data and research, and I bet for other food entrepreneurs, they would say that like plopping 50 grand down for like a study is a lot, and it's like, ours was just for like our little two-mile radius, and so being able to track that over the city, that's helpful. It's helpful from a business standpoint because you're able to cater to what people need and whatnot. I mean if you're selling Newman-O's and they eat Oreos and whatnot you could do that, but then...Public Health could try and figure out "Well, why are people eating so many Oreos?" And like, "Why is that public behavior?"

This exchange demonstrates both the need for more regular and routine data on actual purchasing and eating practices as well as opportunities for city and county offices to partner and facilitate that data collection.

The need for richer and more routine data on eating practices was also evident in subsequent CAN meetings and the Summit. As we further refined the categories around eating practices, we looked for instances in the CAN meetings and the

Summit feedback where participants referenced key terms related to what, how, and why people eat. Specifically, we examined meeting data for references to key terms, including: *choice, quantity, type, water intake, foods of minimal nutritional value (FMNV),* and *food source* (e.g., grocery store, fast food, food pantry, free and reduced lunch).

For the CAN meetings, we unitized our frequency counts at the meeting level, and we coded six different convenings (unique from the initial focus groups), results from a CAN worksheet, and a LEAP survey for individuals who could not attend face-to-face meetings. Across these eight instances, participants referenced quantity of food (n=6), type of food (n=7), and source of food at school (n=7) as core components of eating practices in need of more information. In addition to the source of food at school, specific references to free and reduced meals at school were made at three of the meetings. For the Summit, we unitized our frequency counts at the individual level, and we coded both field notes from breakout groups (n=4), feedback forms (n=32), and results from dot voting (n=47). Within the meeting field notes, key terms such as source, choice, type, and education were linked most frequently with eating practices. Through the dot-voting exercises, we asked participants to consider which data would be most useful in their work, and they identified meeting minimal nutrition standards (n=11), sources of food (n=11), and consumption of foods of minimal nutritional value (n=8) as data of key importance.

As a whole, the data illustrate the need for a more nuanced understanding of purchasing and eating practices for individuals—particularly children—in an effort to improve health outcomes. Eating practices were most frequently tied to quantity and types of food, sources of food, sources of food at school, and meeting minimal nutritional standards. Although some of this data exists, for example the number of children who receive free and reduced meals at Guilford County Schools, we have the opportunity to examine more closely where people buy their food and what they buy.

Physical Activity Practices

As a complement to eating practices, physical activity practices also emerged as a primary indicator focus area. Here, LEAP has a significant opportunity to bring together community and professional voices, as local efforts, data, and programming around physical activity practices are often less organized than those related to eating practices. For participants across the various convenings, physical activity practices included a range of definitions and activities, including everything from simple movement to routine and rigorous activity that increases heart rate.

Early comments on physical activity practices referenced a need to understand the relationship between eating practices and physical activity practices. Two assistant professors from UNC Greensboro, one from Community and Therapeutic Recreation (CTR) and the other from Public Health Education (PHE), grappled with this idea in one of the initial focus group interviews:

> CTR: I was just going to say, "How about more closely linking eating and exercise?" Like, if you eat your meal and then you go walk your dog for half an hour, you're going to stimulate your metabolism...and you know, it's not going to turn into fat, [like] if you just plop in front of the television for the evening. So, linking your two-prong approach, say how can we create the time for you to have time to eat a meal, to make a healthy meal, to eat a healthy meal, and then to walk it off before you go and sit in front of the computer and work for another four hours.
>
> PHE: And that's good...that's what a lot of the patients did. Because they knew if they could exercise, it stimulates their cells to release insulin faster. If they knew

> they could get off insulin by walking, they would. And so that was an approach.

This exchange speaks to the need to address physical activity and eating practices as related activities and to design metrics that can capture that intersection.

Initial CAN meetings also highlighted ways in which LEAP can focus on both environment and behaviors when it comes to physical activity. For example, the following insight was provided by a Cone Health professional regarding the relationship between physical activity and K-12 age children:

> Well, you have to still look at the environment. I mean you could not get enough activity anywhere, but if you look at areas and recess time and that might differ. If you are not getting recess and then you go to after-school care that's not active and you go home and it's dark or you're in a place that's not safe to play, then you're not going to get the activity.

The DAC also engaged the topic of physical activity practices, often citing the difficulties in developing resources and indicators at the community level. For example, participants noted how some communities have developed walking groups; however, such programming only worked for people who have the capacity to walk. Similarly, using the number of steps as an indicator for physical activity, which has been popularized through personal pedometers and apps like FitBit, excludes some members of the community. Moreover, the DAC also expressed the need to be sensitive to culture in the development of physical activity indicators. As the DAC considered alternative indicators to the number of steps, for instance, one member suggested increasing heart rate or engaging in activity to "break a sweat" as possible indicators. However, others noted potential problems with the "break a sweat" indicator, as breaking a sweat can have particular consequences in some contexts, particularly for women of color.

The details on physical activity practices became clearer as LEAP more intentionally engaged researchers, health and education professionals, and nonprofit representatives through the formal CAN meetings and the Summit. Similar to eating practices, we refined the focus on physical activity by coding for key terms, including: *choice, quantity, type, water intake, motivation, sleep, sedentary behaviors, screen time,* and *source*. Across the eight sources of CAN data, participants identified quantity (n=5), type (n=5), sedentary behaviors (n=7), screen time (n=7), and sources of physical activity at school (n=5) and in the neighborhood (n=5) as components of physical activity in need of clearer data. As we looked deeper into the Summit responses and dialogues, key terms including source, education, motivation, and social determinants of health were linked to physical activity practices in the field notes. Through dot voting, Summit participants also called attention to meeting minimal physical activity standards including minutes, frequency, and intensity (n=15) and sedentary behaviors (n=5) as useful data for their work.

In terms of physical activity practices, the data suggests there is a need to better understand how (and how often) people move as well as a desire to inform programs that can work for multiple and different kinds of bodies. Whereas tracking and monitoring data often exists for eating practices, communities—at least in Guilford County—appear to have less access to information about physical activity practices. Participants noted a particular interest in knowing more about the timing, frequency, and intensity of physical activity; at the same time, they wanted more regular and routine data about sedentary behaviors and screen time. Some participants also expressed an interest in studying these kinds of practices and behaviors through accelerometers, which involves the study of acceleration and motion, to better understand how people in Guilford County move. As such, physical activity practices remains an

indicator focus area that is ripe for further development and measurement.

Barriers to Healthy Eating and Physical Activity

While influencing eating and physical activity practices are at the core of LEAP's mission, participants also brought to our attention the need to address barriers to healthy eating and physical activity alongside the practices and behaviors. In other words, what keeps people from enacting the eating and physical activity practices that can promote overall health? The question of barriers brings together the behavioral, environmental, structural, and policy elements of our nested approach, as participants and community members can experience obstacles to pursuing healthy eating and physical activity practices from many directions.

Barriers to healthy eating and physical activity frequently opens up the conversation to consider access to resources. The concept of access was perhaps the most cited and concerning barrier for many participants. In the case of food, access includes neighborhood resources, such as a convenient place to buy healthy and/or fresh food, and transportation, if needed, to get there. Consider the following example from a local food advocate and community member:

> I was working with a refugee family a few years back, and you know, where they lived, I mean, it was mostly corner grocery stores, and they used a lot of rice as a staple of course in their diet, and you know, they were buying these small little things of rice, and it was expensive, and I used to take them to Super G, where you can buy these, you know, huge bags of rice. But if I hadn't been able to drive them over there, that wasn't going to happen, you know? So, yeah, it's how much time you have and how, and the access issue of transportation, too.

Access also includes resources in the home, as highlighted by a nonprofit representative from a health and poverty nonprofit in High Point:

> And I think about too sometimes that...you didn't have enough, but maybe you didn't have anywhere to store food. Maybe you don't have a home, your lights are out, your refrigerator's broken. I mean any of those things could affect whether you can store certain things or have certain foods. Or you had no way to heat it—you know, cook it. Those kinds of things could also come in to play. I mean, if you do have SNAP benefits but if you have nowhere to you know put the food.

Access to the resources necessary to enact lifetime eating and physical activity practices is of crucial concern to partners in Guilford County. This concept comes up regularly and repeatedly in community conversations, especially when one considers that Guilford County currently has 26 food deserts (USDA, 2015), or neighborhoods where residents are both low-income and must travel more than a mile to a grocery store or supermarket. Moreover, our cities and county have few markers about easy access to physical activity, as a representative from Greensboro's planning office noted when he commented that a missing indicator for him is knowing what options for physical activity are available to people.

Participants also regularly linked access to sufficient food and physical activity resources to concepts like time and convenience. As one early focus group participant, a representative from a local education alliance, stated, "What if you're used to having the convenience I mean, how long it takes to actually cook a dinner and maybe lunches for the next day, and just food prep. It's an investment of time." Another focus group participant had questions about how much time it takes for people to get food, claiming, "I think about some of the places in our organization where people will line up hours and hours and hours before food is distributed and that's you

know like at least half a day or more." Thus, concepts like time, convenience, neighborhood-level access, and transportation emerged as areas for further exploration.

Although access to resources at both community and household levels are certainly important, alongside access were frequent references to social determinants of health and poverty as barriers to healthy eating and physical activity practices. These concepts emerged more directly as we moved into the DAC and CAN meetings. At both the October 30, 2017, and December 5, 2017, DAC meetings, participants noted how LEAP has a unique opportunity to examine how race, class, poverty, and gender biases influence how people construct their eating and physical activity practices. Additionally, DAC participants highlighted early on how LEAP would have to consider disability, with one UNC Greensboro Community and Therapeutic Recreation faculty member noting how people with disabilities often face the highest rates of obesity and inactivity. Field notes from the two formal CAN meetings also illustrated a strong interest in poverty and social determinants. Notes from the March 13, 2018, CAN meeting stated:

> Poverty and socio-economic drivers are a huge challenge...Including that there are challenges for families who are low-income and who do not have access to healthy foods, both prenatal and through early childhood. Their viewpoints on this may be different.

Other comments noted how safety can be a barrier to physical activity in neighborhoods. Across both the March 13 and March 19, 2018, CAN meetings, safety concerns arose when participants articulated how people will not go outside to exercise if they do not feel safe in their neighborhoods. Moreover, at the March 19 meeting, one participant linked those safety concerns to health insurance, arguing that people in different income brackets also might engage in physical activity differently because of concerns over harm or injury. In other words, people with fewer financial resources cannot afford to get hurt; therefore, their approaches to physical activity might be different.

Access, poverty, social determinants, and other barriers also featured prominently in the Summit conversations. Within the small group breakout sessions, participants claimed that understanding barriers is important to their work. As one nonprofit representative stated, "My must have is determining barriers. Resources are available for many residents that still don't access them." Better data and indicators about barriers, specifically what keeps people from accessing and utilizing the resources available to them, is of particular need as LEAP moves forward. Dot-voting showed barriers—specifically barriers related to access (n=22) and barriers related to social determinants (n=20)—as the most important across all possible indicators shared at the Summit. Moreover, LEAP's core research team also examined which potential indicators scored highest on both the importance of the indicator and the feasibility of collection, and social determinants had the highest combined score (importance, n=20; feasibility, n=20). Many participants, including members of LEAP's core research team, have highlighted how much of this data is already being collected. Additionally, research specifically on social determinants of health drives much of the work by local groups including the Health Disparities Collaborative. As such, LEAP will need to consider how much of the data gap around barriers might be perceived, and how much is actually a gap in data. It is possible that part of LEAP's future work is to help clarify and communicate to a larger public the data that is available and to draw attention to partner organizations who are collecting it.

In/Security

LEAP dug a bit more deeply into the concept of barriers by focusing specifically on the concepts of security and insecurity. Conversations around in/security focused primarily on food. Because Greensboro and Guilford County have been highlighted as a metropolitan region experiencing

food insecurity—with the USDA (2015) identifying 26 food deserts, Feeding America (2018) measuring 1 in 4 children experiencing food insecurity, and Food Research and Action Center (2015) ranking Greensboro/High Point in the top 10 for food hardship—LEAP saw an opportunity to examine how the concept of security related to both food and physical activity. Food security, according to the Food and Agriculture Organization of the United Nations (FAO, 2002), involves a complex integration of *availability* (i.e., is there food?), *accessibility* (i.e., can people get to it?), *utilization* (i.e., how are people making use of the resources available and accessible to them?), and *stability* (i.e., how well can the food system maintain resources?). Across all four of these key terms are also concerns over *affordability*. These categories of in/security map on to both eating *and* physical activity practices, as communities are frequently interested in knowing what food and activity resources are available to people.

In/Security emerged as a topic fairly early in LEAP meetings, particularly because of Greensboro and Guilford County's food insecurity rates. As with discussions of barriers, the concept of access also became a prominent feature of this focus area. For example, a representative from a Guilford County health agency and member of the core research team pointed out in an early focus group meeting:

> Starting in about 2009-2010, that (community health) assessment cycle, we became aware through the data that we were collecting that there was a significant issue with respect to access to sources of healthy food, and that this was occurring in the same areas where people were experiencing higher rates of diabetes, heart disease, and so forth. And some of the recommendations that came out of that process had to do with increasing access through farmers markets, mobile farmers markets, working with convenience stores to improve quality of food in those areas. That same issue has been expanded upon and developed over the two subsequent assessment processes that have occurred since then.

Guilford County already has experience tracking the concept of security, with data collected through their Community Health Assessment cycle, every three years. At the same time, the concept of access continued to emerge as an area where people wanted more and easily shareable information about food and physical activity data. For example, a representative from the city's planning office stated:

> So, we have some of the USDA stats on food hardship and food security. I find them, beyond a certain point, I find them frustratingly crude measures because they miss a lot of stuff. Because if you don't have a car, you can be *not* in a food desert and *not* be able to get food and vice versa. If you're in a food desert and you've got a car, it just plays out so differently because of the system tracking and what not. So, trying better to fit within that locally.

Part of security—for both food and physical activity—involves ensuring that the resources available are a good match for the people who use them. Several participants spoke to this nexus of availability, access, and utilization, particularly in terms of identifying and meeting needs within our communities. As a leader from a local backpack and food pantry program mentioned in the early focus group meetings:

> For us, where we struggle is identifying the children in need. When you rely on one source to identify those children, we found that we are missing groups of children potentially.....So that is one area we have struggled in is just making sure we identify all the kids in need.

Similarly, a community member and local food advocate also referenced the necessity to identify needs in children as well as how those needs are being met both within and outside of the home:

> The other thing is do you qualify, do your children qualify for free and reduced lunch? That's not on here, not from what I see, which is a little above the "poverty threshold." But if your children qualify, that means that, well do they eat breakfast at school? Do you send them to school with the expectation that they eat breakfast, because sometimes my kids qualify. So sometimes, if they don't make it out the door in time, it's like "Oh yeah, you're there in time for breakfast?" In my experience, I have been in that place where breakfast was at school, where lunch was at school, because it was not in my house. It was not there. It was not going to be there, and this on food stamps. So, when you ask if you qualify, it gives you a sense of a secondary question about, well, do your kids actually eat at school? Which meals do they eat at school? So, then you can talk about some other things that are going on in the household and systemically understand what they have access to. Because it's very easy, and this is from experience, to put your kids on the bus and hold the school system accountable to feed them when you can't.

As such, a clearer understanding of how access meets both need and utilization is an important component of in/security, especially as community partners and members identify programs and actions to move toward it.

Considering how access—as well as availability, utilization, and stability—are related to lifetime eating and physical activity practices, LEAP's core research team developed keyword codes around these terms and examined them in the CAN and Summit convenings. We primarily included utilization under eating practices and physical activity practices (discussed previously), and we also considered two additional key terms: *affordability* and *social support networks*.

Affordability is especially related to utilization and stability, considering that large factors in developing food desert, food insecurity, and food hardship measures are income and having enough money to buy food. CAN-meeting participants were quick to note the need to develop and track affordable and free resources. For example, at both the March 16 and 19, 2018, formal CAN meetings, participants articulated a need to know more about the free and public sources of physical activity in each neighborhood/community, with one commenter at the March 19 meeting suggesting that LEAP develop a network of non-paid programs—such as those offered through Greensboro Parks and Recreation, UNC Greensboro's Project Effort, and community soccer programs—that are available to community members. Similar resources have been developed for promoting food security, like the *Little Green* and *Little Blue* books, which catalogue food pantries and free meal locations in Greensboro.

Additionally, LEAP researchers started to notice how meeting participants began to link the concept of social support networks to food and physical activity security. As a CAN-meeting participant clarified, "I think about the social support networks. Like, do you have the support within your family or your community?" These kinds of social support networks are often different than the material resources that many programs focus on (e.g., distributing free food or meals). They might involve direct social support from friends and family as well as community support through coaching and mentoring.

As with the previous indicator focus areas, LEAP examined the later CAN and Summit meetings for the key terms to clarify the important data points around in/security. We coded the meeting notes, feedback forms, and dot-voting results for key terms including: *access, availability, stability, affordability, social support networks,* and *food insecurity*. Across the eight

CAN convenings, availability (n=5), stability (n=5), and social support networks (n=6) were the ideas more prevalently featured in the discussions. Through dot voting at the Summit, participants ranked food insecurity (n=12), social support networks (n=9), and affordability/availability/access (n=22) among the most important data for their work.

Taken together, these concepts begin to illustrate the need for data that connects access to utilization. The connections between availability, access, and affordability are key to understanding how people actually use the resources available to them. We would also like to note that several participants, from representatives from the city's planning office to community members to health professionals, called for more stories around this topic in particular. There exists a need among community members to share their stories and a need for community organizations and agencies to hear those stories. In doing so, these organizations and agencies might more strategically align their programming with what community members will actually use.

Health Literacy

With the indicator focus area on health literacy, LEAP started to focus on the connections between education, knowledge, and practice. Throughout our process, many participants referenced the need to know more about our communities' knowledgeability about food and physical activity. For instance, much of the existing nutrition advice encourages people to cook at home in order to better control the ingredients and calories. Also, most food pantries and food banks are limited by policy to redistributing whole ingredients that can be turned into meals, as opposed to prepared meals. These constraints often assume that people know how, have the resources, and want to cook at home, and this is one example where partners are looking for more nuanced data. Similarly, participants articulated a need to focus on education around physical activity, specifically whether people have the knowledgeability about the kinds of exercise that improve health and what kinds of physical activity are needed for the respective bodies.

As such, we drew from Nutbeam's (2001) definition of health literacy, which concentrates on functional, interactive, and critical health literacies. Functional health literacy focuses on basic skills, such as the ability to read nutrition labels or develop an exercise plan. Interactive health literacy involves the ability to communicate about the health issue to others, such as a parent teaching a child about eating and exercise. Finally, critical health literacy involves synthesizing complex information to better manage one's own health and may even involve advocating for one's own resources. For example, if community members are given the opportunity to advocate for the resources they want to see in their neighborhoods, what might that look like?

As LEAP researchers moved into the data from the DAC, CAN, and Summit meetings, we saw connections between knowledgeability, health literacy, and how participants use resources available to them. As a Registered Dietician mentioned during the early focus group meetings:

> I work with clients, patients, to teach them or empower them to better manage their health through their diet, and a lot of the patients I work with access food pantries all over the area, and so I was working with a patient and brought brown rice out for her to try, and failed to mention how to prepare the brown rice, and so when I followed up with her in a few weeks, the brown rice had been thrown away because she had prepared it like white rice. I just wasn't—she didn't feel comfortable or confident in preparing it in just kind of the vague way I told her or suggested, so I guess what resources are in the community that can help with food preparation and empowering people to know how to cook.

Food literacy is often particularly important to our immigrant and refugee communities, as noted

during one of the focus groups with agencies who work with these members of our community. A participant stated:

> Sometimes storage of food...is different overseas than it is here. So, the big one I've seen is that milk does not always have to be refrigerated overseas, but here it does. So then, you know, we've had cases where kids were being given spoiled milk because the parents didn't realize that you had to refrigerate it in this country.

In terms of physical activity, participants especially linked data needs to health literacy for children, primarily to establish a basic knowledge of fitness and how exercise affects the body. The majority of comments collected on this topic, however, focused primarily on food and cooking literacy, as opposed to physical activity.

Although health literacy emerged across only three of the CAN meetings, it did feature more prominently at the Summit. Participants identified knowledge of dietary and physical activity guidelines (n=10), knowledge of available resources (n=15), and sources of knowledge and education (n=13) as key components of the indicator focus area and important information that could improve their work. As with previous focus areas, how people source their information and resources is of particular interest. Developing indicators and related measures around these types of literacy needs can help programmers close the gaps between the resources offered and those that are most useful to community members.

Self-Efficacy

The final indicator focus area that LEAP researchers lifted out of our community's data involves self-efficacy—the confidence and capacity that people have to engage in healthy practices. Frequently, self-efficacy is linked to behavior change and motivation. At the Summit and the formal CAN meetings, for example, the idea of "finding your *why*" and using that to build one's confidence emerged in breakout groups and in the final convening. In other words, finding one's motivation to improve their health can serve as a way to promote self-efficacy. The need for data around this concept of self-efficacy emerged early in the focus group conversations. Consider the following comment from a UNC Greensboro Assistant Professor in Public Health Education:

> Health coaching is what comes to my mind, because when we do health coaching, we often attribute change to a personal thing. You know, like, you want to see your grandchild graduate. Yes, OK, let me make a change. Some people don't care enough about themselves to make the change, whereas if it were for somebody else, they would. And I have noticed that we have to take that approach with health coaching. And also...you see it's very difficult to come to another country, and so what are they going to do? Revert back to what they're used to. They're coping with eating, and it's back to coping. I think there are a lot of other factors we should ask about because a lot of it is related to that. Because they want to.

This comment speaks to a greater need to understand what people have the capacity and desire to do, of which change and motivation are related concepts.

As with previous indicator focus areas, LEAP's core research team identified key terms for additional coding of the CAN meetings and the Summit. In terms of self-efficacy, we highlighted skills related to *gardening, physical activity, meal preparation, dependence on others,* and *motivation* as key terms. Motivation was the primary concept that emerged under this category, with four of the CAN meetings engaging this concept directly. The importance of self-efficacy was clarified at the Summit. As one participant noted in a breakout group:

> We need to know where we start and where we are. This is seen every day in

> their practices. People understand health things, but they don't change their practices. What can be done to change the self-efficacy?

And another commented that this concept, "encompasses everything we are looking for. Self-efficacy part is most interesting." The dot voting also showed that skills for healthy eating and physical activity (n=13) and confidence in ability to practice healthy eating and physical activity (n=13) were areas of possible measurement development that would be important for LEAP's initial partners.

Understanding how the people in our communities develop the motivation, confidence, and capacity to practice healthy eating and physical activity is a crucial part of LEAP's efforts. As such, self-efficacy continues to be an indicator focus area that the LEAP team can take forward for additional feedback and measurement development. In some ways, this concept also presents the idea of a community efficacy, alongside an individual self-efficacy. As one of our participants, an educational and health advocate, stated, "Consider environment and support as well as motivation. If healthy eating and physical activity is the goal, we want it to be sustainable instead of a temporary improvement. This is most impacted by your environment and those around you."

Recommendations and Next Steps

As an extension of LEAP's efforts to engage multiple perspectives on healthy eating and physical activity, culminating in the final Summit, we offer a series of recommendations and next steps. These recommendations are designed to capture what the LEAP team learned from the various voices who contributed to the project as well as what needs to be done in order to collect and manage usable data related to healthy eating and physical activity in Guilford County. They are matched with complementary next steps, which serve to highlight a trajectory for how LEAP and potential partners might proceed. Table 2 provides a complete list of recommendations and next steps, and we offer some additional explanation here.

General Recommendations

As a whole, participants across LEAP's multiple points of engagement recognized the need to continue focusing on healthy eating and physical activity, especially in terms of collecting and using data to better inform health programs. They also recognized the need for a group—like LEAP—to prioritize these sorts of coordinated efforts. LEAP's general recommendations speak to insights we gained from participant voices as well as what is needed to continue this kind of work. As such, we focus on the indicator list, sustainability, community integration, and social determinants of health.

Much of LEAP's work centered on refining and prioritizing the list of needed indicators. We focus more specifically on recommendations related to the indicator list in the next section, but generally, we offer some insights—primarily to researchers—regarding what we learned from our community-engaged process. The proposed indicator list offers a good starting point for prioritizing what needs to be tracked and monitored when it comes to healthy eating and physical activity. At the same time, this list needs further refining and confirmation across communities. For example, LEAP generated a list of six indicator areas, based on initial focus groups, existing indicators, and work with the DAC. As we moved through all of the feedback from the CANs and the Summit participants, we noticed that people often used the same language and examples to talk about Barriers and In/Security as well as Health Literacy and Self-Efficacy. Consequently, one of our recommendations for researchers encourages additional data collection to confirm the collapsing of these categories. LEAP members are also working with the Center for Housing and Community Studies and the City of Greensboro's Local Food Promotion Program to examine local food security, and, as a next step, they plan to collect this kind of data.

Additionally, although the proposed indicator list was generated with input from multiple perspectives, LEAP's dedication to community engagement compels us to routinely verify this list with a wide range of partners. This practice is especially important as we refine the list and begin using it; therefore, LEAP will make this progress report available for public comment. LEAP plans to strategically incorporate multiple perspectives, including residents and researchers, into our continuing efforts. Our commitment to this kind of engaged work also speaks to our general recommendations related to sustainability and community integration. LEAP heard a clear need from our initial partners for a group to coordinate related research and data collection efforts and provide a platform for results. In order for LEAP to continue, our research team needs to establish a more long-term vision, funding strategy, and partnership structure to carry out the work. Moreover, LEAP remains committed to incorporating voices from residents, researchers, nonprofit leaders, and city and county offices. As such, we recommend strategically including these

voices in multiple levels of our process, and as a next step, LEAP will work to create a Community Board.

Our final general recommendation highlights a need to focus on the social determinants of healthy eating and physical activity alongside the individual and family-level practices. Although our work began with a focus on those individual choices and behaviors, our participants routinely identified social determinants—including education, economic stability, race, and neighborhood—as necessary indicators moving forward. LEAP recommends developing research practices that consider both the individual behavior *and* the social determinants of our communities.

Implications for…

- **Researchers**: Get involved with LEAP researchers to help verify our indicator list and begin pairing indicators with appropriate measures, survey protocols, and routine data collection. Help develop sample research instruments that capture both individual practices and social determinants.
- **Residents and Local Groups**: Provide feedback during the period of public commentary on this progress report, the proposed indicator list, and our recommendations. Ask to be considered for the Community Board.
- **City/County Offices**: Continue partnering with researchers to provide access to data, create mechanisms and platforms for collecting new data, and obtain funding to make these sorts of practices routine.
- **General Interest**: Better data can help ensure that food, physical activity, and financial resources are getting to the necessary places and people. Inclusive data can help us improve programs and create opportunities for residents and other community members to highlight the ideas that are important to them.

Indicator Focus Areas

Based on input from various partners, particularly during the CAN and Summit meetings, LEAP noted several recommendations specific to the indicator focus areas—many of which are relevant to residents, researchers, nonprofit organizations, and city/county offices. In terms of both eating and physical activity practices, we recommend developing measures and survey tools that consider *where* and *why* people get their food and physical activity. Although participants expressed a general interest in what, when, where, why, and how people eat and get active, they also noted a specific lack of understanding regarding where and why. For some participants, focusing on the where before the what helps reduce the possibility of policing what people eat, while the why opens the door to understand people's motivations. LEAP has identified potential partners to begin collecting data around these topics, which we have noted in the next steps. These partners include both City of Greensboro and Guilford County offices related to planning, parks and recreation, and public health.

With regards to both Barriers and In/Security, LEAP recommends working with community partners to identify the actual factors that keep residents from eating and getting active in ways that are healthy and workable for them. We recommend moving beyond surface-level attention to access to examine how access to food and physical activity options connect with other topics, including income, poverty, transportation, and other social determinants of health. Moreover, participants often spoke about Barriers and In/Security in similar ways; therefore, we encourage researchers to collect additional data to help us confirm combining these categories.

Finally, Health Literacy and Self-Efficacy are also categories that researchers might combine. Throughout LEAP's process, we noted how many participants spoke about these concepts in ways that emphasized finding motivation to engage in healthier habits, identifying workable eating and physical activity practices, translating information and resources into everyday routines, and

maintaining changes that showed positive results. As such, we noted how participants treated Health Literacy and Self-Efficacy in terms of the individual and social *capacity* to eat and be active. In an effort to simplify our approach, LEAP suggests a need for additional data to confirm this recommendation, and we have identified an existing project to help us collect that information. Beyond researcher recommendations, this focus on capacity also challenges residents, nonprofit organizations, and local health agencies to consider the importance of motivation and confidence in practicing healthier eating and physical activity habits. LEAP often assumes that people in Greensboro and Guilford County want to live healthier lives, and our team needs greater input from individual community members to know what that motivation and confidence looks like.

Implications for…

- **Researchers**: Partner with LEAP researchers to establish regular and routine data collection practices that examine the indicator focus areas. Help confirm and simplify our list to emphasize the priorities for Greensboro and Guilford County.
- **Residents and Local Groups**: Use the period of public comment and other community-engaged opportunities to inform researchers and LEAP advisors about what we should prioritize from our current indicator list and what we are missing from this list.
- **Nonprofit and Community Organizations**: Examine the relevance of the indicators we have identified to your work. Help LEAP prioritize which indicators will most support your programs and services.
- **City and County Offices** (including school systems): Continue to provide support for and access to city/county data regarding healthy eating and physical activity. Consider working with LEAP researchers to embed healthy eating and physical activity priorities into current data collection and planning.
- **General Interest**: The proposed indicator focus areas help communicate priorities for Greensboro and Guilford County. They also give us an opportunity to be innovative in how we promote healthy eating and physical activity by working with a wide range of partners to identify what is truly important for our communities, especially those that can be overlooked.

Data Strategies

With an emphasis on data strategies, LEAP's recommendations become more technical in terms of how we collect and manage data as well as how we fill the gaps in what we know about healthy eating and physical activity in Greensboro and Guilford County. Although our recommendations are most relevant to researchers, LEAP also welcomes insights from residents, city/county offices, and health agencies regarding how we collect data, how we identify the appropriate gaps to fill, and how we share our results in ways that invite follow-up action.

Of primary importance to LEAP is our recommendation to establish a set of standards or ethics for future data collection around healthy eating and physical activity. We recommend that all future research related to LEAP recognize the importance of data collection and analysis that is culturally and ethically appropriate and does not fatigue the communities and participants who contribute to this research. Moreover, we continue to emphasize the importance of addressing neighborhood-level characteristics and trends as well as the need to allow open access to research results. These sorts of standards are designed to promote reciprocity between LEAP researchers and the communities with whom we work.

Beyond the need for a set of research standards, LEAP also recommends the creation of a "living indicator bank." Part of LEAP's initial work involved cataloguing existing data and research regarding healthy living and physical activity in

Guilford County. We advocate for the creation of an indicator bank that regularly and routinely updates this information and creates a platform for new research results and health indicators. With continued funding and support, LEAP could take the lead on developing and maintaining this kind of indicator bank.

Finally, one of our most immediate needs regarding data strategies involves responding to the identified gap in information regarding physical activity, particularly at the K-12 level. Participants regularly noted the potential to gather county-level and local data in partnership with K-12 schools. LEAP is already in the process of developing relationships with partners at Guilford County Schools and researchers who are working with the school systems, primarily to assess local needs for data collection around physical activity. We encourage this kind of partnering, especially as we focus on identifying and implementing indicators around physical activity.

Implications for…

- **Researchers**: Partner with LEAP to identify ongoing research projects that focus on healthy eating and physical activity. Assist in creating a set of research standards for future LEAP research. Contribute research to the living indicator bank.
- **City and County Offices** (including school systems): Work with LEAP researchers to integrate shared data strategies around healthy eating and physical activity data strategies into current practices.
- **Residents and Local Groups**: Assist in creating a set of research standards for future LEAP research.
- **Funding Agencies**: Consider funding the work to create the living indicator bank and provide ongoing funding for an online platform to ensure open access to the data.

Community

As part of our community-engaged approach, LEAP continues to emphasize the relevance of community participation and contributions as a foundation of our work. Throughout our recommendations and next steps, we call for the creation of a Community Board and other mechanisms that allow community members and residents an opportunity to drive local conversations around healthy eating and physical activity. We also offer some more pointed recommendations with regard to community participation in LEAP.

As mentioned previously, LEAP has recommended the creation of a Community Board, open access to data, and a living indicator bank as ways to ensure the transparency and community contributions to this kind of research. LEAP remains committed to engaging community members at the resident level and collecting specific indicators and measures that are relevant to the people who live in Greensboro and Guilford County. Additionally, we also encourage research that considers the connections between individual and community health. In doing so, we advocate for a more collectivist approach to health in our communities, one that reinforces health for all of our neighborhoods and residents.

Implications for…

- **Researchers**: Develop research protocols that incorporate individual and neighborhood-level contributions. Consider research questions and data collection that explores the relationship between individual and community health.
- **Residents and Local Groups**: Contact LEAP researchers to get involved with the Community Board or other LEAP committees. Inform LEAP researchers about specific priorities in your communities. Participate in LEAP data collections.

- **Nonprofit and Community Organizations**: Connect LEAP researchers with interested individuals whom your organization represents.
- **General Interest**: LEAP's proposed indicator list and community-engagement strategies are designed to connect people with their health through food and physical activity practices. By continuing to involve community members and residents at every step of our process, we hope to examine the importance and relevance of local engagement in developing long-term solutions for community-identified problems.

Structure

LEAP's final set of recommendations focuses on the long-term structure and sustainability of LEAP as a research collective. More specifically, we conclude our list of recommendations with calls for long-term funding and infrastructure around healthy eating and physical activity, formal support from city and county offices for research on these topics, and strategic alignment—through LEAP—of researchers and community partners who are interested in this type of work.

Much of what LEAP has proposed is the strategic alignment of information, people, and infrastructure around the topics of healthy eating and physical activity. We call for platforms that allow us to collect and share information, integrate the perspectives and needs of multiple people and neighborhoods, and build infrastructure that helps us translate information and data into better programs and policies. This type of infrastructure requires LEAP to build leadership, advisory, and action teams, which also requires long-term funding and financial sustainability. LEAP has already established plans to seek this kind of funding in an effort to build the type of infrastructure we think is needed.

Finally, part of this strategic alignment involves the integration of multiple perspectives. LEAP will remain committed to identifying ongoing research and indicator projects, both to avoid redundancy and also to recognize possibilities for collaboration and better networking. We hope to align researchers in Guilford County—primarily those institutions who participate in the Greater Greensboro Consortium (e.g., UNC Greensboro, North Carolina A&T, Guilford College). We also hope to strengthen networks around healthy eating and physical activity by establishing LEAP as a point of connection between local researchers and local organizations and residents. To do so, we recommend embedding LEAP goals into the research and programming that is already active in Guilford County, even as we also identify opportunities to answer new and emerging questions around healthy eating and physical activity.

Implications for…

- **Researchers**: Contribute to a LEAP advisory or action team. Partner with LEAP researchers to obtain both short- and long-term funding.
- **Residents**: Participate in a LEAP advisory or action team.
- **Nonprofit and Community Organizations**: Collaborate with LEAP to obtain both short- and long-term funding.
- **City and County Offices**: Help fund LEAP efforts to build infrastructure around healthy eating and physical activity in Greensboro and Guilford County.
- **General Interest**: LEAP members hope to build a network that provides useful, timely, and routinely-updated information on healthy eating and physical activity, which is only possible through sustainable funding and long-term interest in this type of work. Strategic infrastructure will help us reduce redundancies and better align local research and subsequent programming.

General Recommendations		
	Recommendations	**Next Steps**
1. Indicators List	Continue to refine the indicator focus areas to identify specific indicator/measurement pairings that are both important and feasible to partners in Greensboro and Guilford County. Begin to develop measurement strategies and data systems around those pairings.	Verify the list with partners and community members across multiple levels and channels. Develop and implement a plan for making this progress report available to multiple communities and partners for public comment.
	Consider collapsing focus areas from six to four. • Combine Barriers and In/Security into one area labeled Barriers. • Combine Health Literacy and Self-Efficacy into one area labeled Capacity.	Partner with the Center for Housing and Community Studies in Spring 2019 to verify the recommendation through a community-wide survey and pilot test of a local food security questionnaire.
2. Sustainability	Develop funding, structure, and clear vision for the next stages of LEAP.	Refine the structure for the current iteration of LEAP (including a steering committee and a Community Board).
3. Community Integration	Strategically include resident perspectives with regard to developing measures and vision. Continue efforts toward educating and informing community members of LEAP's process and practices and seeking feedback from community members regarding the importance of healthy eating and physical activity in their daily decision-making.	Create a Community Board. Any new surveys, instruments, or research protocols that are developed around LEAP initiatives should be vetted through a multi-community level process (including agencies, nonprofit organizations, researchers, and residents).
4. Social Determinants of Health (SDOH)	Integrate social determinants of health (e.g., race, education,	Partner with existing community efforts (including the Guilford County Community Health

	environment, poverty; SDOH) in long-term health assessments.	Assessment, the Greensboro Health Disparities Collaborative, and the City of Greensboro's Local Food Promotion Program) to address SDOH in data collection.

Table 2: LEAP Recommendations and Next Steps: General Recommendations

Indicator Focus Areas		
	Recommendations	**Next Steps**
1. Eating Practices	Emphasize measurement development around *where* and *why* people get their food and drink.	Share the LEAP conclusions with the City of Greensboro's Local Food Promotion Program, which is preparing a local food security survey. Work with Cone Health to consider how Electronic Medical Records might serve as a source of data. Work with Guilford County Department of Health and Human Services regarding a recent grant to study diabetes in minority populations.
2. Physical Activity Practices	Emphasize measurement development around *where* and *why* people engage in physical activity.	Share LEAP conclusions with the City of Greensboro Parks and Recreation Department as they develop their next 10-year plan. Work with Guilford County Schools around their Fitnessgram program to track and monitor physical activity.
3. Barriers	Identify, document, and measure the various factors that keep people from enacting the healthy eating and physical activities that work for them. Partners emphasized *access* and *social determinants* as initial factors.	Connect to existing efforts (including the City of Greensboro's Local Food Promotion Program and the Greensboro Health Disparities Collaborative) to examine healthy eating and physical activity barriers.
4. In/Security	Identify how well in/security aligns with barriers, particularly around the topic of access, to determine whether or not to combine the categories.	Partner with the Center for Housing and Community Studies and the City of Greensboro's Local Food Promotion Program to collect data and verify this recommendation.

5. Health Literacy	Document and measure how the people in our communities develop the motivation, confidence, and capacity to practice healthy eating and physical activity. Focus on tracking and monitoring key skills development related to gardening, physical activity, meal preparation, dependence on others, and motivation.	Share the results and public comments related to this progress report with Guilford County's Community Health Assessment team and Ready for School, Ready for Life.
6. Self-Efficacy	Incorporate community efficacy, alongside individual self-efficacy. Identify how well self-efficacy and health literacy align in order to combine the categories and focus on Capacity.	Work with a Community Board to identify strategies for identifying and documenting community efficacy. Partner with the Center for Housing and Community Studies and the City of Greensboro's Local Food Promotion Program to collect data and verify this recommendation.

Table 3: LEAP Recommendations and Next Steps: Indicator Focus Areas

Data Strategies		
	Recommendations	**Next Steps**
1. Data Collection	Establish standards for collecting data related to LEAP. For example, anyone collecting data should: • maintain collection practices that are culturally and ethically appropriate, • collect data in a consistent and timely manner that does not fatigue participants, • identify neighborhood/census block characteristics and trends, and • allow open access to the public and researchers for all information about the community.	Form working sub-groups to identify measures and documentation strategies for each of the indicator areas. Integrate existing data collection strategies from community partners and researchers who choose to work with LEAP. Identify what new data are to be collected and how often they are to be collected. Incorporate different perspectives (e.g., residents and researchers) and standards for accountability.
2. Data Management	Establish a living "indicator bank" that includes links to existing data, made easily accessible to the public. This indicator bank can be updated to include new data as community members, partners, and researchers collect and make it available.	Develop a list of specific indicators that are already collected and shareable across Greensboro and Guilford County (including type of data, frequency of collection, and current measures used). Create a platform (or integrate space for an indicator bank into an existing platform) for multiple partners and community members to access local data on healthy eating and physical activity in Greensboro and Guilford County.
3. Data Gaps	Respond to community partners' identified gaps in data around early childhood and K-12 age groups.	Partner with Ready for School/Ready for Life to address the data gaps around children, particularly in the early childhood age group.

		Work with Guilford County Schools and other community partners to address data gaps around children, particularly in the K-12 age group.
	Respond to the researchers' identified gaps in data around physical activity. Current data collection tends to emphasize healthy eating and food access.	Work with the newly formed steering committee and Community Board to reframe the Community Action Networks (CANs) to focus on different priorities, including data gaps, research foci, and resident-identified matters.

Table 4: LEAP Recommendations and Next Steps: Data Strategies

Community		
	Recommendations	**Next Steps**
	Routinely communicate data collection and results to nonprofits, city/county offices, and other community-based and community-focused groups.	Create a platform (or integrate space for an indicator bank into an existing platform) for multiple partners and community members to access local data on healthy eating and physical activity in Greensboro and Guilford County.
	Consider how individual health connects to community health.	Advocate a more collectivist approach to community health alongside a focus on individual eating and physical activity.
	Connect community building to healthy eating and physical activity in community conversations around Greensboro and Guilford County.	Create and support spaces for people to share stories about their experiences with healthy eating and physical activity. Facilitate spaces where health can be a topic of conversation.
	Engage community members at the resident level when identifying and collecting specific indicators and measures.	Create and sustain a Community Board. Any new surveys, instruments, or research protocols that are developed around LEAP initiatives should be vetted through a multi-community level process (including agencies, nonprofit organizations, researchers, and residents).

Table 5: LEAP Recommendations and Next Steps: Community

Structure		
	Recommendations	**Next Steps**
	Continue to seek, review, and support projects and initiatives doing similar work to avoid redundancy.	
	Focus on building infrastructure around physical activity alongside healthy eating. Community partners have built more infrastructure around healthy eating and food systems. The same kinds of organizing around physical activity are needed.	Partner with the Greensboro Community Food Task Force, who has developed a working group focused on physical activity as it relates to food. Work with the newly developed steering committee and Community Board to prioritize physical activity.
	Embed data collection about healthy eating and physical activity into existing data collection mechanisms, whenever possible. These might include funding reports, assessment data, and semi-annual health reports.	Work with the Guilford County Department of Health and Human Services to identify the most appropriate data collection in which to embed questions about healthy eating and physical activity.
	Identify opportunities for city and county offices to partner and facilitate data collection, such as food purchasing and neighborhood access to physical activity.	
	Formalize financial support for the community health assessment in order to create continuity between assessments and assessment cycles.	Connect to triennial community health assessment requirements and reporting to identify possible funding sources.
	Strategically align researchers in Guilford County, primarily those whose institutions are members of the Greater Greensboro Consortium.	Identify higher education partners who are researching specifically with communities around healthy eating and physical activity.

	Strategically align with active residential groups concerned with these topics (e.g., neighborhood associations, community garden groups, co-ops).	Seek funding to support needed resources for areas such as child-care and transportation when working with residents.

Table 6: LEAP Recommendations and Next Steps: Structure

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Web addresses used in embedded hyperlinks, by order of appearance:

- LEAP - https://communityengagement.uncg.edu/leap/
- Detailed mortality data - http://www.schs.state.nc.us/data/vital/dms/2016/
- County-level health data book - https://schs.dph.ncdhhs.gov/data/databook/
- County health data book - https://schs.dph.ncdhhs.gov/data/databook2016/
- NC mortality files - https://schs.dph.ncdhhs.gov/data/vital.cfm
- Cancer profiles - https://schs.dph.ncdhhs.gov/data/cancer/profiles/2017.htm
- Guilford County Department of Health and Human Services, Division of Public Health's Health Surveillance and Analysis Unit (HSAU) - http://www.guilfordcountync.gov/our-county/human-services/health-department/health-statistics
- Behavioral Risk Factor Surveillance System (BRFSS) – https://schs.dph.ncdhhs.gov/data/brfss/
- Community Health Assessment - http://www.guilfordcountync.gov/our-county/human-services/health-department/health-statistics
- Healthy NC 2020 - https://publichealth.nc.gov/hnc2020/docs/HNC2020-FINAL-March-revised.pdf
- Community Health Needs Assessment - https://www.conehealth.com/about-us/community-health-assessment/
- County health website - http://www.countyhealthrankings.org/app/north-carolina/2018/rankings/guilford/county/outcomes/overall/snapshot
- CDC's 500 cities project - https://www.cdc.gov/500cities/
- Guilford County-specific YRBSS surveys - http://www.guilfordcountync.gov/our-county/human-services/health-department/health-statistics/2011-2012-guilford-county-youth-risk-behavior-survey-results
- Greensboro Neighborhood Congress - http://greensboroneighborhoodcongress.org/
- Piedmont Health Counts - http://www.piedmonthealthcounts.org/
- Shape Up Sommerville - https://www.somervillema.gov/departments/health-and-human-services/shape-somerville
- STRIVE - http://www.strivepartnership.org/
- PollEverywhere - https://www.polleverywhere.com/

Appendix A: Data Sources Related to Eating and Physical Activity

Table 7: Data Sources Related to Eating and Physical Activity

Source	Data	Details
NC State Center for Health Statistics (SCHS)	Detailed mortality data (2016)	- Chronic disease conditions linked to physical activity, nutrition and obesity - State and county level - Age-group, sex, and race
NC State Center for Health Statistics (SCHS)	County-Level Health Data book (2018)	- Age-adjusted race and sex-specific
NC State Center for Health Statistics (SCHS)	NC Mortality Files	- North Carolina resident deaths, with underlying and contributing causes of death, along with demographic characteristics and residential location of the decedent
NC State Center for Health Statistics (SCHS)	Behavioral Risk Factor Surveillance System (BRFSS)	- Individual obesity and physical activity and dietary data - Has measures of chronic disease prevalence, consumption of fruit and vegetables*, physical activity and obesity * In the 2018 BRFSS, questions about fruits and vegetable consumption were removed.
NC State Center for Health Statistics (SCHS)	County Health Data Book (2016)	- Aggregated inpatient hospital utilization and charges by principal diagnosis and county of residence. Includes average days stay, total charges, average charges per day and average charges per case by diagnostic category
Health Surveillance and Analysis Unit (HSAU), Guilford County Department of Health and Human Services, Division of Public Health	Youth Risk Behavior Surveillance System (YRBSS)	- Has a range of questions for middle and high school students about unhealthy dietary behaviors and inadequate physical activity - Guilford County specific.

Health Surveillance and Analysis Unit (HSAU), Guilford County Department of Health and Human Services, Division of Public Health	Mortality Surveillance Reports	- Also has the capacity to geocode and map mortality data for the county and sub-county geographic areas, including municipalities, ZIP Codes and census tracts.
Health Surveillance and Analysis Unit (HSAU), Guilford County Department of Health and Human Services, Division of Public Health	Community Health Assessment (CHA) Community Health Needs Assessment (CHNA)	
Centers for Disease Control	500 Cities Project	- Modeled BRFSS data for obesity and physical inactivity for Greensboro and High Point
Piedmont Health Counts	Community Dashboard	- Healthy eating and physical activity indicators

Note: The purpose of this table is to provide a platform from which readers could begin accessing the available Eating and Physical Activity data for Guilford County.

Appendix B: Indicator Areas

Table # Indicator Areas

Focus Areas	Key Terms	Definitions
Eating Practices	choice, quantity, type, how often, rationale, water intake, FMNV, minimum dietary guidelines, motivation - intrinsic/extrinsic, source - fast food, source - garden, source - food pantry, source - community meal, source, source - free and reduced lunch [FRL]	What (choices, types), how much (quantity), how often (frequency) and why do people in Guilford County eat/drink?
Physical Activity Practices	choice, quantity, type, how often, rationale, water intake, motivation, sleep, intentional/unintentional activities, screen time, sedentary behavior, source - private, source - public, source - neighborhood, source - home, source - school, sports/leisure, individual/group	How (activity type), how much (activity intensity and duration), how often (frequency) and why do people in Guilford County move?
Barriers to Healthy Eating and Physical Activity	proximity; affordability - paid; affordability - free; health co-morbidities; access - [to what]; safety, knowledge of resources, SDOH - [of what kind]; poverty	What prevents people in Guilford County from healthy eating and physical activity?
In/Security	affordability, access, availability, transportation, stability, food insecurity - [how is it being talked about], social support system,	What resources do people in Guilford County need to practice healthy eating and physical activity?
Health Literacy	functional EP, functional PA, interactive EP, interactive PA, source - [from where are you learning this? school, family, etc.],	Do people in Guilford County have the knowledge and skills for practicing healthy eating and physical activity habits?
Self-Efficacy	skills - [of what? cooking, meal planning, etc.]; dependence [on self or others], motivation,	Do people in Guilford County have the confidence (and readiness) to consistently practice healthy eating and physical activity?

Appendix C: Organizations and Agencies Partnering and Contributing to LEAP Efforts

Bryan Foundation
Center for New North Carolinians
City of Greensboro Local Food Promotion Program
City of Greensboro Parks and Recreation
City of Greensboro Planning and Community Development
Collaborative College Grove
Community Action for Healthy Babies
Community Foundation of Greater Greensboro
Cone Health
Cooperative Extensions
Greater High Point Food Alliance
Greensboro Community Food Task Force
Guilford Child Development
Guilford College
Guilford Community Care Network
Guilford County Department of Health and Human Services
Guilford County Schools
Guilford Education Alliance
Guilford Nonprofit Consortium
Guilford Parent Academy
High Point University
Mustard Seed Community Health
North Carolina A&T State University
Nurse Family Partnerships
Partnership for Children
Ready for School, Ready for Life
Triad Adult and Pediatric Medicine
UNC Greensboro
United Way of Greater Greensboro
United Way of Greater High Point

Appendix D: LEAP Core Team Members

Lauren Haldeman, Ph.D., is a Professor in the Department of Nutrition at UNC Greensboro. Her work engages communities in the design and implementation of targeted nutrition education interventions focusing on health beliefs, self-efficacy, barriers, and food insecurity to improve nutrition-related health outcomes.

Emily M. Janke, Ph.D., is the director of the Institute for Community and Economic Engagement and associate professor of peace and conflict studies at UNC Greensboro. She supports the development and work of reciprocal, cross-sector partnerships among institutions of higher education and the broader community.

Marianne LeGreco, Ph.D., is an associate professor in the Department of Communication Studies at UNC Greensboro. Her work focuses on promoting food security through community-oriented policy and practice.

Sandra J Shultz, Ph.D., ATC is Professor of Kinesiology and Co-Director of the Applied Neuromechanics Research Laboratory. Her research focuses on risk factor assessment and exercise interventions to reduce musculoskeletal injury in adolescent females.

Kathleen E. Edwards, Ph.D., is a visiting scholar with UNC Greensboro's Institute for Community and Economic Engagement. As an educator and activist, she collaborates on community-engaged projects that work toward equity and justice.

Michael A. Hemphill, Ph.D., is an assistant professor of kinesiology at UNC Greensboro. His community-engaged scholarship focuses on positive youth development in sport, physical activity, and physical education contexts.

Mark Smith, Ph.D., serves as the epidemiologist and head of the Health Surveillance and Analysis Unit of the Guilford County Department of Health and Human Services, Division of Public Health. Dr. Smith collects data and monitors county health trends, leads periodic community health assessments and assists with community action planning efforts to address priority health issues.

Kathleen Colville, MSW, MSPH is the Director of Healthy Communities for Cone Health. Kathy's team works to connect clinical services and community assets so that everyone we serve has equitable access to health information, clinical services, behavioral supports and living conditions to optimize their opportunities for long and healthy lives.

James (Jake) Hochrein, MD FACC Chief Cone Cardiovascular Service Line is the medical director of cardiovascular services in the Cone Health System. He has a particular interest in developing strategies for preventing and managing chronic disease through building community collaborations.

Michelle Gill-Moffat is the Youth Services Superintendent for Greensboro Parks and Recreation. Her work includes supporting youth service providers and the community to educate, enrich and inspire collaboration for a stronger Greensboro and providing youth with an opportunity for recreation and volunteerism.