A Community HUB Model that Advances Clinic Capacity for Pediatric Obesity Care

Executive Summary

Chronic disease care (diabetes, CVD, substance use, etc.) is a major burden on our healthcare system. Much of that burden is driven by lifestyle issues like diet, exercise, and stress. Stress is driven primarily by the social determinants of health (SDOH) such as poverty, food insecurity, racism, past trauma, etc. To address lifestyle issues appropriately we feel that we must begin with childhood and the childhood family and to do so within the context of the SDOH. Adults, even when willing and educated, can still find it extremely challenging to address lifestyle but can be motivated when their children are also involved. The healthcare system is now operating in an increasingly complex world of resources, referral connections, payment systems, information exchanges, etc. It is extremely challenging for even a large healthcare system to navigate this complexity. We do not have enough care managers, community health workers, or care coordinators to manage this ever-expanding array of patients in need of chronic care nor resources to address these complex problems. Just having awareness of all the available resources within our own healthcare system is difficult. Even when programs are in place, families often need help to learn about and follow through with appropriate resources. Additionally, the healthcare system then needs feedback and updates on patient/family progress so it can respond, reinforce, or modify the plan of care. The healthcare system needs a coordinated community partner with the ability to identify community resources, connect patients/families with those resources, follow-up with them, and provide ongoing feedback to the healthcare system. We propose to align primary care at an FQHC with such a coordinated system, focusing on pediatric obesity, via a family focus, and taking into account the SDOH.

The Community HUB (HUB) is a model that advances pediatric obesity care by providing primary care systems that extend beyond the walls of the clinic for community integration that drives connections with evidence-based, community health and wellness programs as well as wrap-around services that address SDOH. Our goal with this project is to address childhood obesity in Iowa with a care coordination system that uses robust clinical-community linkages and advanced navigation processes for increased enrollment in two national, evidence-based programs: the Produce Prescription program and the Healthy LifeStars At Home program.

The Agency for Healthcare Research and Quality (AHRQ), the Administration of Community Living, and other national organizations are advocating for the development of hub-like models like ours. The infrastructure of a hub is designed to connect people with meaningful evidence-based programs/practices/services, while avoiding duplication of effort and keeping at-risk populations from falling through the cracks. This project is an innovative and timely response to the growing issue of childhood obesity.

Population Served and Need

Childhood obesity is a serious medical condition that affects children and adolescents at epidemic proportions in the United States. Children who are obese are at greater risk for type 2 diabetes, cardiovascular disease, hypertension, hyperlipidemia, and sleep apnea—conditions previously thought to be adult diseases. In addition, overweight and obesity in childhood are known to have significant impact on both physical and psychological health well into adulthood. See page 6 for local data.

Clinicians are underreporting the diagnosis of obesity in the pediatric setting and interventions are needed to increase the identification of children who may benefit from receiving resources that encourage a healthy lifestyle and optimal weight maintenance.[1] More health care providers are asking questions about food insecurity, but screening for food insecurity is not enough. Finding ways to support health care providers with ways to connect their patients with access to healthy food is key to improving long-term health outcomes.

[1] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5349642/

Primary Health Care, Inc. (PHC) is an FQHC located in Des Moines IA, and serving about 35,000 high needs, mostly minority patients. They served 40,427 patients in 2021, two thirds from minority populations, many immigrants, and 93% living below 200% of the poverty level. For several years PHC has operated a "Wellness Center''. For a variety of reasons, most funding opportunities have focused on adults, often adults with diabetes. For example, PHC has a burgeoning CDC Diabetes Prevention Project and has participated in university research programs on diabetes group activities. But it has become increasingly clear to them that our society cannot hope to overcome our culture's Chronic Disease challenges if we do not focus on children. It is in childhood where the lifelong habits related to diet/nutrition, exercise and stress management are set. From research PHC has been conducting with the University of Iowa, they have identified two key insights: 1. Adults can be motivated, and their health habits improved by focusing on their children, and 2. Without addressing social determinants, families do not have the bandwidth to also tackle health habits. Acquiring rent assistance, or seeking help for a partner's substance abuse issues, will take precedence over walking with your children or buying fruits and vegetables.

The Team

CHPcommunity is a local nonprofit organization managing the HUB that is made up of a network of community partners coming together to support evidence-based health promotion programs (EBPs) and services in Iowa. The HUB has a strong and diverse network of state and national partners that are active as the HUB advisory group. The 40-member advisory group consists of community partners who are accomplished experts with decades of experience in their respective industries to include public health, healthcare systems, academia, and social services to name a few. The HUB advisory group creates a "learning forum" around the hub model and helps advance the statewide work of the HUB in Iowa to improve population health. The HUB is currently funded by our national partner the National Association of Chronic Disease Directors (NACDD) through September 29, 2023. NACDD provides us with training and technical support, education and resources, state networking opportunities and other guidance in the expansion of EBPs and brings national support for statewide HUB efforts.

Primary Health Care (PHC) was founded in 1981 and provides comprehensive services including Medical, Dental, Integrated Behavioral Health, HCH, MAT, and Ryan White, with Residency Programs in Internal Medicine and Family Medicine. The target population for this project will be PHC families with at least one child that is overweight/obese. Currently, 23% of our pediatric population is identified as overweight/obese, but only 63% of total children have a BMI recorded, suggesting our first issue is accurate identification, and 23% is a low number.

Our Lead Clinician, Dr. Jennifer Groos, is a board-certified pediatrician with 16 years of experience and practices general pediatrics at PHC. Dr. Groos currently serves as Lead Faculty for the National Childhood Obesity in Primary Care (COPC), a Quality Improvement project led by the American Academy of Pediatrics Institute on Healthy Childhood Weight (IHCW). She leads the 5-2-1-0 Health Care Program in Iowa. She serves as the co-chair for the COACH network (childhood obesity advisor) for the American Academy of Pediatrics Section on Obesity. She is a past-president of the Iowa Chapter of the American Academy of Pediatrics, chair of the chapter committee on legislation, and founder and chair of the chapter committee on obesity. Dr. Bery Engebretsen, Chief Visionary and founder of PHC is our Lead Medical Advisor for the project.

The HUB has a Memorandum of Understanding with Iowa State University (ISU) documenting the shared commitment to building a sustainable statewide hub to support referrals, training, implementation, and evaluation of evidence-based, health-related programming. ISU U-TuRN is a transdisciplinary network that integrates expertise from multiple departments to support the development and translation of EBPs focused on health and they contribute complementary expertise and support to the HUB.

The Iowa Primary Care Association (Iowa PCA) provides technical assistance and training to Iowa Community Health Centers to support their commitment to provide quality, affordable, and equitable primary and preventive health care services. Iowa PCA supports the work of this project as a pilot for later spread.

The HUB has consultative support from the Iowa Chronic Care Consortium related to the role of CHWs as HUB Navigators. The Iowa Chronic Care Consortium is a not-for-profit partnership founded by Des Moines University, Iowa Farm Bureau Federation, Iowa Health System, Mercy Health Network, and Iowa United Auto Workers. Their purpose is to develop capacity throughout Iowa to effectively manage the most prevalent chronic disease affecting Iowans. They provide CHW training across the state.

Finally, additional partner support comes from Easterseals Iowa and the National Center on Health, Physical Activity, and Disability for the inclusion of individuals with disabilities in EBPs. This inclusion support involves training for program delivery organizations, access to assistive technology, and resources to create inclusive marketing messages for recruiting individuals with disabilities into programs.

Solution and Approach

Health care systems that are integrated within their communities reinforce healthy behaviors, enhance patient-centered care, and improve patient engagement. This integration ultimately helps to prevent and treat obesity and improve our populations health. But clinic and community integration has been challenging over the years. Health care systems have not generally engaged well with community organizations and many social service providers operate isolated data systems and reporting requirements that are not aligned nor available to healthcare systems. A system design that builds in clinical-community linkages will promote the integration of medical systems with community systems. Our HUB model solution with its software, Workshop Wizard, provides essential support by convening stakeholders from community and clinical systems, builds trust and new relationships, and negotiates the many challenges that accompany efforts to integrate clinical and community systems.

Community-wide programs such as the Produce Prescription Program (PPP) and Healthy LifeStars At Home (HLS At Home) target key behaviors associated with achieving and maintaining healthy weight. Our HUB model addresses the integration function and advanced navigation into these EBPs increasing access and participation with health equity as a priority. HUB Navigators will screen referred patients for SDOH by assessing the individual's health, behavioral health, and social risk factors using the PRAPARE screening tool. Once a need is detected, the HUB Navigator will coordinate connections to support services in the community by making a referral to partner systems with the HUB such as United Way 211, Findhelp and Unite Iowa. The HUB will use Community Health Workers (CHWs) in the HUB Navigator role. CHWs are frontline agents helping to reduce health disparities in underserved communities and function as role models by supporting positive self-care behaviors. As advocates, CHWs will ensure underserved individuals get the services and follow-up care they need. Research shows that successful CHWs can help reduce racial and ethnic disparities in accessing care.

In this project, the HUB collaboration with PHC will 1) encourage more frequent identification of child obesity and food insecurity, 2) increase referrals and participation of children and families at-risk to the Pediatric PPP and HLS At Home programs, 3) refer to local agencies to address identified SDOHs, and 4) create a feedback loop to share meaningful progress and outcomes data with the care teams ultimately strengthening the link between health care and community resources.

The Pediatric PPP has already been initiated within PHC and HLS At Home is just getting started with internal promotions. The HUB already has an embedded referral order within PHC's electronic medical record (EMR). We will work initially to set up the referral process with Dr. Groos to lead the project and Dr. Engebretsen will encourage other PHC physician leaders to adapt clinical recommendations for prevention and treatment of childhood obesity and food insecurity that includes the two programs.

Our solution development strategy entails:

- Clearly defining child and family program eligibility criteria and share widely within health system
- Determine a patient identification process that will be tested and refined over the 3 phases of this project
- Develop a patient referral process that is embedded in clinical practice
- Implement the HUB advanced navigation process, including screening and referral for SDOH

- Communicate data and evaluate progress as detailed in the Data Section below

Concept Phase 1 *(09-14-22 through 03-14-23)*

- Project team leaders meet to discuss implementation plan and process mapping.
- Conduct a retrospective electronic medical record review for the presence of BMI classified as obese or overweight in children and compare to the number of diagnoses of overweight or obesity in children. Pediatric care providers must first identify patients who are overweight or obese to ensure that they receive optimal counseling and resources to achieve and maintain a healthy weight.
- Assess ways to increase the identification of pediatric obesity.
- Physician champion is involved in testing and implementing the processes for identification and referral.
- Create a care coordination project packet to include workflow diagrams, program information, patient flyers, referral tools, and learned best practices.
- Develop a six-month provider engagement plan that includes lunch and learns to share the purpose of the project, provide education about the two EBPs and patient eligibility requirements, and review the screen-detect-referral process.
- Project team to create a monthly progress dashboard/spreadsheet and work with ISU U-TuRN team for project evaluation design.

Implementation Phase 2 (03-15-23 through 08-08-23)

- Train two FTE bilingual HUB Navigators to initiate the HUB's referral management capabilities. Two FTEs will enable us to manage upwards of 3000 referrals/year (6 new referrals/per day x 2 FTEs x 5 days x 50 weeks).
- Lead Medical Advisor and Provider Champion lead the efforts to educate other PHC providers.
- Assess effectiveness of EMR 'Care Alerts' to providers.
- Share monthly progress reports and patient testimonials with the project team and at provider meetings.
- Refine clinic and HUB processes as best practices are learned.
- HUB to monitor responsiveness of partners for social services care to address SDOH.
- Recruit more clinicians to refer as applicable.

Scaling Phase 3 (08-09-23)

- Work with HUB Technology subcommittee and healthcare system IT to improve system interoperability for sharing information, creating EMR cues for referrals to HUB when program eligibility is met, and integrating patient program outcomes into quality reporting measures for PHC. Information systems should be bidirectional, provide real-time utility to the care team, and assure that data can easily flow between care delivery and community systems.
- Creating best practice manual with health care initiatives related to obesity; modifying the standard of care to include clinical-community integration and coordination through the HUB.
- Training and education of all members of the clinical care team within the FQHC in pediatric obesity care is essential, including referral to Pediatric PPP and Healthy LifeStars at Home.
- Expanding processes to include other community EBPs that prevent and manage chronic disease.
- IPCA can help support best practices learned through PHC with other FQHCs across Iowa.

Data and Measurement Approach

PHC's EMR and integrated data reporting tools will allow us to track basic demographics on patient referrals (age, sex, race/ethnicity, insurance status). Clinical data will be tracked to assess BMI, A1c, and lipid profiles. A "tracking type" will be set up within PHC's reporting tool (i2iTracks) for patients entered in the program. This will allow special reporting, as needed, as well as access for alerts, etc. For comparison purposes, we will look at the same data from the UDS report on the entire Pediatric population, or from i2i, if not available in the UDS.

PHC has extensive experience with research protocols and will review this project with PHC's IRB. However, this project will be conducted as a performance improvement activity and data is being collected to assess and document any improvement in the quality of childhood obesity services and any improvement in those outcomes. A consent process is already in place for use of the HUB by PHC patients. The HUB is a business associate (BA) of PHC with a signed business associate agreement (BAA).

We also hope to demonstrate an increase in at-risk children and their families engaging in childhood obesity interventions including addressing food insecurity leading to sustainable improvements in clinic to community collaborations. Project evaluation will include report generation from HUB's Workshop Wizard (WW) database management system and PHC's EMR. WW has been actively involved with CHPcommunity for two years and is used by 20+ other states to manage statewide program initiatives including multiple EBPs and an unlimited number of partnering organizations. The HUB holds the only WW license in Iowa. WW will track and report participant data, manage referrals and referral correspondence. WW data is backed up daily and encrypted in transit using HTTPS (Hypertext Transfer Protocol Secure) and at rest by using Amazon Web Services (AWS) EBS encryption (AES-256). AWS hosts the servers and provide physical security and firewall protection. The servers are protected by WebRoot anti-virus software and WW websites are built to help prevent SQL injection.

The HUB will report on:

1. Number of self-directed community members to the Pediatric PPP and HLS At Home programs
2. Number of referrals from PHC to the Pediatric PPP and HLS At Home programs
3. Number of HUB Navigator screens performed at intake
4. Number of HUB Navigator connections into additional support services in the community
5. Compare referral method (EMR query vs. point of care) outcomes for conversion to enrollment
6. Report program completion rates
7. Report pre and post program survey data
8. Report demographics of participants (lower income/ethnicity)

Finally, using translational science within the HUB not only supports community-based organizations across the state with the delivery of EBPs at a scale needed to impact public health, but it also has the potential to allow researchers to study implementation processes and program sustainability, so that continual optimization and enhanced implementation of EBPs through the HUB occurs. The ISU U-TuRN team will be facilitating our translational research efforts.

Local Data Section

In Iowa, 28.3% of 10- to 17-year-olds are overweight or obese[2]. Childhood obesity is highest in the lowest income groups and in Iowa, 14.7% of 2- to 4-year-olds from low-income families are obese.[3] Unfortunately, the pandemic risk factors for pediatric obesity have gotten worse. Health experts in Iowa report that children who are obese and contract Covid-19 struggle to recover, experience worse health outcomes, and longer hospital stays. On top of health risks like developing diabetes, this added weight could also mean the child would face difficult obstacles if diagnosed with COVID-19.[4]

Also in Iowa, 229,500 people are facing hunger and 80,160 of them are children. That equals 1 in 9 children facing hunger.[5] Consistent with a March 2017 research article in the Journal of Specialists in Pediatric Nursing, there is an association between food insecurity and childhood obesity. The odds of a child being obese were 5 times higher for children from food insecure households.[6]

Cook and colleagues conducted a national survey to examine the frequency of obesity diagnosis and diet and exercise counseling and found that obesity was diagnosed at 0.78% of all ambulatory visits and 0.93% of all well-child visits.[7] Currently, 23% of PHC's pediatric population is identified as overweight/obese, but only 63% of those have a BMI recorded.

The Pediatric Polk County Produce Prescription Program - Medical providers write 'prescriptions' for free fruits and vegetables and give them to patients who have weight-related health concerns, along with nutrition education and monitoring of biometrics. This program was piloted in 2021 with 189 individuals over six months. Participants redeemed over $26,000 of fresh produce and showed improved health outcomes, including decreases in A1c and cholesterol.

The Healthy LifeStars program - Children ages 5-12 and their parents learn how to eat the right foods in the right amounts, how to stay active, and how to set and achieve personal goals. This program was recently adapted to be delivered online with video lessons, worksheets, recipes, and more, to be able to reach more people who have barriers to in-person program attendance (such as work, childcare, and transportation barriers). Healthy LifeStars has reached 4,527 children in the last three years, which is why we think this new online program delivery will be successful reaching families throughout the state of Iowa. This new, Healthy LifeStars at Home program will be offered through this project.

To date, the HUB is receiving medical referrals from over 120 healthcare providers and referring participants to seven statewide programs.

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[2] https://www.unitedwaydm.org/5210advocates

[3] https://www.polkcountyiowa.gov/media/dsnh1zr3/healthy_polk_plan_english.pdf

[4] https://www.kcrg.com/2022/01/31/child-obesity-linked-increased-risk-difficult-covid-19-recovery/

[5] https://www.feedingamerica.org/hunger-in-america/iowa#:~:text=In%20Iowa%2C%20229%2C500%20people%20are,of%20them%2080%2C160%20are%20children.&text=face%20hunger.,to%20meet%20their%20food%20needs.

[6] https://pubmed.ncbi.nlm.nih.gov/28321980/

[7] Cook S, Weitzman M, Auinger P, Barlow SE. Screening and counseling associated with obesity diagnosis in a national survey of ambulatory pediatric visits. *Pediatrics*. 2005. July; 116 1: 112- 116.