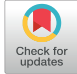

Improving the Health of All Children in Our Community: The Nationwide Children's Hospital and Franklin County, Ohio, Pediatric Vital Signs Project

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Historically, pediatrics has been focused on improving outcomes for all children, yet current practice arrangements limit the ability of pediatricians to focus on population healthcare. In the late 19th century, the time of the field's founding as a distinct specialty, pediatricians instituted population health initiatives to improve nutrition and sanitation and reduce the spread of infectious disease.[1] A century later, the American Academy of Pediatrics (AAP) identified the need to address the "new morbidities" of psychosocial and behavioral problems with a focus on the environmental factors that can lead to or worsen mental health or developmental trajectories.[2] More recently, the AAP has recommended that pediatricians address the threats to child well-being, including societal poverty, toxic stress, and racism.[3-5] However, nearly all pediatricians focus on individual patients and their families within the context of specific clinic visits or inpatient care. Pediatricians are paid based on clinical encounters and our healthcare system operates on the underlying assumption that patients come to providers for care. This inherently diminishes our ability to focus on population health. The reality is that many children do not have a medical home, with important gaps in the quality of care exacerbated by disparities.[6,7]

Pediatricians have been able to work together to develop systems to address important gaps by partnering with public health and engage in advocacy to improve population-level health outcomes.[8] There is a long track record of engagement of pediatricians in advocacy for public programs (eg, the Special Supplemental Nutrition Program for Women, Infants, and Children, the Supplemental Nutrition Assistance Program; parks and recreation centers; public schools) and policy (eg, environmental legislation and safety standards) to improve child health outcomes. For perspective, it was disagreement with the American Medical Association in the 1920s about the importance of the US Children's Bureau, which provided well-child services and visiting nurses, that ultimately led to the formation of the AAP.[9] The AAP continues to support pediatricians to address community needs, ranging from large-scale advocacy efforts to supporting clinicians in their communities.[10] Children's hospitals also often play an important role in care delivery within their communities, and the Children's Hospital Association, which includes >220 hospitals, focuses on quality, safety, and access to care.

Despite these opportunities to engage in broader community health initiatives, most pediatrician's work to improve child health has been in improving the care that patients receive using quality improvement (QI) approaches. Many QI projects improve care delivery to children who have access to care or to networks of similar clinical sites. Sustaining improvements and spreading them across broader populations is challenging. Accountable care organizations have been successful in addressing these challenges for some children because accountable care organizations face significant financial risk for avoidable healthcare expenditures (eg, emergency department visits, hospitalizations). In some models, the savings are not sufficient to support or even justify focusing on improving child health measures. Furthermore, accountable care organizations have no responsibility for those not enrolled in their plans and therefore are not responsible for improving the health of the general population.[11] The key gap is the lack of care and QI activity directed to all children, regardless of where they receive care or who pays for it. Ideally, QI projects should be developed at the population outcomes level and be done in partnership with everyone invested in improving child health outcomes, including traditional healthcare providers, non-healthcare partners, schools, and community organizations.

Development of the Nationwide Children's Hospital and Franklin County, Ohio, Pediatric Vital Signs Project

In response to the lack of healthcare accountability for population health and the need for standard measures that could be used across communities, the National Academy of Medicine (NAM) published Vital Signs: Core Metrics for Health and Healthcare, proposing that health systems be accountable across 4 domains: healthier people, high-quality care, affordable care, and engaged people.[12] This NAM report encourages a shift in accountability, not just for the health of patients, but also the health of entire communities with specific and measurable outcomes.

AAP	American Academy of Pediatrics
NAM	National Academy of Medicine
NCH	Nationwide Children's Hospital
QI	Quality improvement

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Despite this growing energy for improving population health, progress has been slow because it is unclear who should lead these efforts and how they will be supported. Children's hospitals can take the lead in focusing on improving the health of all children because of their mission, their expertise, and their frequent location in underserved communities.[13] This work is in alignment with the expressed goals of the Children's Hospital Association. Nationwide Children's Hospital (NCH), one of the largest children's hospitals in the US, has begun to transition from a focus on individual-level pediatric health to population-level health. Ten years ago, the hospital board launched a strategic plan to improve outcomes for all children in Central Ohio by expanding from an organization focused on providing the best child healthcare to an organization expected to deliver the best child health in partnership with community residents. This plan began by developing community partnerships to address housing blight, safety, and school problems in the neighborhood immediately adjacent to the hospital.[11] Collaborations between the hospital, the Columbus Mayor's office, and a not-for-profit faith-based agency, transformed community aspirations and inspired the hospital to improve meaningful health outcomes for all children in Franklin County, where the hospital is located, regardless of where the children receive healthcare.[14]

NCH and Franklin County, Ohio, Pediatric Vital Signs project is a commitment to improve health for all children based on the NAM framework. This work has required the hospital and community to align and synergize interventions to achieve common goals. Consequently, the project's outcome metrics are measurable, actionable, and meaningful to local stakeholders (Table). Community-wide QI activity with specific aims and key driver diagrams were developed for each measure. Disparities by race and ethnicity occur in all of the measures selected for the Vital Signs work. Interventions have been developed to decrease these disparities so that improvements do not accrue to subpopulations of children in the community. Although NCH facilitated the development of this Vital Signs project, city and county health departments, social service agencies, the school system, and community healthcare providers outside of NCH have committed to participation, including data sharing and working on implementing interventions.

Lessons Learned

There have been several important lessons learned about implementing population health goals through a partnership between a large children's hospital and county agencies.

Choosing Measures That Matter

Fundamental to the success of the Vital Signs project is choosing measures that are relevant to all stakeholders. The leadership team chose measures that could be directly improved (eg, lead testing, immunization), but also required significant community and hospital-based process changes to achieve success. Informal meetings with key stakeholders within NCH and long-standing community members were used to identify the areas for improvement. Bolstered by previous success in decreasing infant mortality locally, NCH in conjunction with community stakeholders chose outcomes that are more difficult to achieve but reflect meaningful improvements in population health (Table). Some of the metrics originally proposed based on the NAM report (eg, total cost of care) did not resonate with Vital Signs stakeholders and were dropped.

Table. 2030 Pediatric Vital Signs goals for Franklin County, Ohio

Vital signs	Aim
Infant mortality	Decrease the overall infant mortality rate from 7.1 to 5.9 per 1000 births and decrease racial disparities by 50%
Kindergarten readiness	Increase the percentage of Kindergartners who pass the Ohio's Kindergarten Readiness Assessment from 41% to 50%
High school graduation	Increase the percentage of students who graduate high school in ≤4 years from 85% to 93%
Teenage pregnancy	Decrease the teenage birth rate from 17.9 to 6.0 per 1000 women 15-19 years of age
Obesity	Decrease the overweight or obesity rate among children 2-17 years of age from 38.4% to less than 33.4%
Suicide	Decrease the suicide rate from 3.6 to 2.5 per 100 000 children 5-19 years of age
Child mortality	Decrease all-cause mortality rate from 26.7 to 25.7 deaths per 100 000 children 1-19 years of age
Preventive services delivery*	Increase composite score of recommended preventive services including maternal depression screening, breastfeeding, fluoride varnish application, lead screening, primary vaccination series, adolescent depression screening, and screening for sexually transmitted infections

*Specific aims and QI interventions have been developed for each of these preventive services.

Obtaining High-Quality Data

Although some access to data for Vital Signs measures had already been obtained (eg, birth and death certificates for infant mortality), obtaining other data has been more challenging. For example, Franklin County has 16 different school districts, each requiring separate data use agreements and different timelines for making data available. To address this issue, NCH developed an agreement with the county-wide Education Services Center, which is the organization that serves as the uniform data manager and consultant service for the school boards.

Some of the data (eg, breastfeeding rates) will come from electronic medical records data extracted from practices across the county. Sharing aggregate data from practices raises methodologic concerns (eg, completeness, potential for duplicate counts), and practices with low rates might be less willing to share data. The Vital Signs leadership continues to push practices for complete reporting, but also recognizes

the need to move forward even if data are somewhat incomplete. Over time, the accuracy and completeness of data should improve because the specific data elements will receive greater scrutiny. In addition, NCH has committed to providing the informatics expertise to facilitate collection and synthesis of data from a wide array of clinical, public health, and educational settings. The Vital Signs project leadership recognizes that delaying until complete data are available would likely derail this ambitious project. The stakeholders strongly believe that the Vital Signs activities to improve meaningful population health outcomes should begin now, even without perfect measuring systems, and strongly encouraged the leadership at NCH to prioritize the obvious community needs over academic concerns.

Addressing Internal Resistance

The NCH strategic planning process includes multiple internal stakeholders from all levels in the organization. Population health and specifically work to improve community health were key components of the quality and safety strategic plan. However, administrative and clinical leaders across the hospital system have sometimes challenged the diversion of resources, including faculty and staff effort, for a county-wide public health effort instead of investing in direct clinical initiatives. To overcome these concerns, departmental, divisional, and nursing leadership meetings were held to explain the overall objective of the project, including referencing the aspirational hospital strategic plan goal to improve community health. Interested clinicians were included in community teams around particular topics. Administrative leaders analyzed long-term implications for clinical budgets, including tradeoffs for participating in the Vital Signs project. Aspirational goals and practical commitments were reviewed with hospital board members and senior executive leaders. In the end, the commitment of NCH to the health of our community superseded the many financial, political, and implementation challenges.

Addressing External Stakeholder Resistance

The rapid escalation of hospital participation in public health and education activities around the county was welcomed by most governmental and not-for-profit entities. However, some agencies worried that the hospital would dominate meetings, investments, and governance. To address these concerns, longstanding governmental and social service agencies with prior relationships to the hospital were involved in the development of the Vital Signs project and were invited to select other individuals from the community to participate in the work. The support of nonhospital leadership on committees addressing each measure provided reassurance to diverse groups.

A Challenge for Everyone: Throwing down the Gauntlet

The first year of working together in a collaborative fashion to identify data sources, analyze the status of our county's children, and set 10-year goals together has been overwhelmingly positive. Hospital staff often comment to leadership about how inspired they are to work on these challenging community health issues. Our partners welcomed the opportunity to work cooperatively on goals that matter to them and to children. As a result, we challenge others to develop similar Vital Signs projects to improve outcomes for all children in their communities. We believe that as many other communities join this Vital Signs work, the health of children in the US can and will be improved dramatically.

Based on our overall experience, we have several recommendations for those willing to develop a Pediatric Vital Signs project: (1) the project should address all children living within a defined geography; (2) social and economic factors must be considered, including disparities in healthcare delivery and outcomes; and (3) QI conducted in partnership with community stakeholders, partner agencies, and community pediatricians is central to the success of this work. Children's hospitals are often uniquely positioned to marshal the improvement resources to help the community achieve success.

It is increasingly clear that, in addition to programmatic efforts, population health initiatives require advocacy to change policies to improve child outcomes. This includes policy work with local, state, and federal agencies to promote activities needed for population health, including project funding, development of incentives to participate in prevention activities, and encouraging data sharing. An important challenge to the success of this work is the underfunding of public health initiatives and the nearly constant threat of Medicaid cuts. It is important to recognize that children's hospitals have the local influence, resources, and technical experience to move Vital Signs projects forward even in the face of shortages in public funding. We encourage community stakeholders, clinicians, and children's hospitals to come together to both engage in their own Pediatric Vital Signs projects and to advocate for what is needed to conduct this critically important work. Unfortunately, many communities in significant need of a Pediatric Vital Signs project do not have a local children's hospital. We hope that pediatricians in these communities will partner with their local hospitals to develop a similar project that, although perhaps not as well-resourced, could lead to significant improvements.

Pediatric Vital Signs projects allow pediatricians to expand their ability to work in partnership with the community to improve meaningful long-term child health outcomes, which can have spillover effects to whole communities, including reducing poverty.[15] In this report, we outline measures that were meaningful to NCH and stakeholders in our communities. Based on local needs, other communities might choose other measures. Regardless of the specific measure, we challenge civic leaders, pediatricians and other children's hospitals across the country to engage in an approach to improve meaningful, population-based, child health outcomes that will not only impact children over their lifespan but significantly improve the quality of life for all of those who live in the community. ■

Data Statement

Data sharing statement available at www.jpeds.com.

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