Proposal Title: Drawing Play: Communicating with Children about their Environment through Drawing at Well Visits

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Primary Strategic Priority
Improving the Health and Wellness of Individuals and Populations

Proposal Abstract (brief summary of the proposal – 250-word limit):

Many of the challenging issues in healthcare need to be addressed from a multidisciplinary perspective that incorporates not only the individual in treatment but the ecology in which that individual is situated. This proposal describes a multifaceted project anchored around three highly interconnected issues: pediatric obesity, the built environment, and health communication.

Drawing Play is a project to help clinicians better address factors of child obesity and develop child appropriate methods for engaging children in treatment/care plans. At the Rutgers Chandler clinic while children are waiting they will be asked to draw where they like to play; and then the resident or attending physician will begin the encounter by talking to the child directly about their drawing. The drawing is intended as a communicative tool to enable the child to become a more active participant in their well child visit. Just as crucially, for the physician these drawings are a unique and meaningful way of understanding the child’s environment which is seldom possible through direct questioning. This knowledge is vital for gaining a sense of the child's physical activity to provide meaningful advice related to obesity prevention or reversal. A long-term goal is to connect children’s perspectives to the policymakers and planners who develop the built environment they live in, to better facilitate opportunities for physical activity.

The development, implementation, data collection, and analysis for this project will involve collaboration from multiple Rutgers departments: pediatrics, communication, landscape architecture, planning, visual arts, and public health, along with local community organizations.

Full Proposal Description (5-page limit)

[Insert here the full proposal, which should describe in detail a) what is being proposed, b) how the initiative aligns with the University Strategic Plan, c) any additional themes, priorities, and elements addressed, d) who will be involved, e) desired outcomes, and f) anticipated resources to support this initiative.]

Drawing Play is a project that will be implemented at the Eric B Chandler Community Clinic in New Brunswick. It is a federally funded healthcare center that offers primary care services. It
also serves as the primary teaching clinic for pediatric residents among others. The majority of patients are Hispanic immigrants who face many challenges from language barriers to the intricacies of navigating the American health care system.

For pediatric care, children wait in a large open waiting room mainly distracted by a TV screen. With the Drawing Play proposal, children will be given clipboards with a sheet of paper and crayons in the waiting room and will be asked to draw where they like to play. When they come in for their well child check the visit will begin with the pediatrician asking the child directly about the drawing, eliciting descriptions from the child about the environment they drew and how it is meaningful to them and their daily routines. This will provide valuable information for pediatricians to delve into the child's environment for purposes of diagnosis and also recommendations for physical activity and safety precautions.

These interactions between physician, patient, and parent are a key component of healthcare so studying and improving upon this would help to improve the whole experience. There is not much literature in communication within pediatric settings so this is an important task. This would be evaluated with questionnaires of health care providers before and after implementation as well as patient and family members. Communications research experts can also provide opportunities for live observation of healthcare communication for an additional degree of insight into the delivery of healthcare.

After the initial research phase one goal will be to connecting children's perspectives to community organizations working to improve the built environment. Policymakers and planners rely on community support and ideas and garner this through efforts such as needs assessments through public surveys. The drawings and children’s perspective collected through the clinic can be presented to these organizations; this will be done in an de-identified method to remain HIPPA compliant. This phase of the project will include collaboration with departments of public health, planning, landscape architecture and crucially community organizations such as New Brunswick Tomorrow.

**Background Information**

**Obesity and Health Environments**

A child's environment is a vital determinant of their health. Clinical and epidemiological evidence accumulated over the past fifty years establishes toxic environmental exposures and the built environment as causative factors in childhood disease.\(^1\) Pediatric obesity is an epidemic in the U.S., with nearly 18% of children being obese or overweight. Physical activity is crucial to helping children reach or maintain a healthy weight, but many live in environments that make this extremely challenging. Access to parks and playgrounds is important, but even in neighborhoods with playgrounds available, there may be other factors that limit their use such as parental concerns about safety. Children’s perspectives are important. What draws them to

parks, outside spaces and other environments that are conducive for healthy behaviors and routines -- is it specific activities and programs, sports fields, or simply a place for unstructured play? The answers to these questions are important for the planners and policymakers who are designing parks, neighborhoods, and cities. To find these answers, we need to turn to children and ask them how they perceive their environment and what they imagine it could become.

**Communicating with Children**

Pediatricians are tasked with guiding the long term health and safety of children and have a unique opportunity to talk to them about their environment. Making meaningful, relevant recommendations about physical activity requires healthcare providers to recognize children's unique outlook on matters affecting their lives. Eliciting their opinions and thoughts is therefore critical to quality discussions about their health and well-being.² This recommendation is increasingly being acknowledged in the communication and medical literature.³ However, engaging children's perspectives is challenging for a number of reasons, from the time required to gain a child's cooperation, to the types of communication strategies that facilitate these kinds of discussions. Research suggests that starting with drawings could open a child-centric dialogue about matters that are important to them, since "Children's ability to retrieve information about their experiences may be more readily accessed by stimulating their perceptive senses than by semantic stimulus."⁴ ⁵

**Drawing Methodologies**

Various drawing methods have a long history of use by pediatricians, child psychologists, and other practitioners, each of which has specific aims and means of interpretation. Drawings as a means to communicate with children in a health setting has been studied since the 1920s, starting initially with measuring childhood development and aptitude with the Draw-A-Person test, to Draw-a-Family test in the 1950s. In the 1970s, drawings were used to understand family dynamics from the child’s perspective, with Kinetic Family Drawing. These methods have also been used for understanding child abuse. More recently using pediatric drawing has been studied in sick children in inpatient settings and in specific situations such as pediatric cancer patients.⁶ Studies have also used drawing to understand children’s emotions after cardiac surgery.⁷ Previously established techniques such as Kinetic Family Drawing have been readapted to new situations such as understanding the psychological aspects of children with

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Finally, in the past decade as environmental health has become more prominent, childhood drawing has been extended to understand childhood perceptions of the environment. For example, a study in Australia compared children’s drawings and photographs of their neighborhood to their distance walked measured by pedometer. Another study in southeast England used drawing and photographs to ascertain adolescents perceptions of their environment. These last two studies suggest that drawing techniques can be fruitfully adapted to understanding a child’s health environment.

Alignment with University Strategic Plan
This project directly reflects the priorities in the University Strategic plan with meaningful collaboration between Rutgers faculty and staff in the medical sciences, the humanities, and the social sciences. Given that the primary population served by this project will be immigrant residents of New Brunswick and their children, our goals are also aligned with the Strategic Plan’s priority to build an inclusive, diverse, and cohesive culture. We are working to better integrate pediatric patients and their immigrant parents into the medical culture that serves them, in ways that make them more meaningful partners in this process. Furthermore, this project directly addresses two of the integrating themes, namely health and wellness in individuals and populations, as well as creative expression and the human experience. This project also connects academic research with community agencies and action for real world change.

Who will be Involved
This project began within the Department of Pediatrics with Drs. Chethan Sarabu and Shilpa Pai collaborating with Dr. Jacqueline Fleming and the Rutgers Eric B Chandler Clinic. They are primarily responsible for the conduct of this study at the clinic. All of the healthcare professionals and staff who work there will need to be trained in implementing the project.

Drs. Vikki Katz and Lisa Mikesell from the Department of Communication bring their expertise of communication study design to the earliest stages of developing the research questions and protocols. They along with students in their department will also lend their skills in conducting this research with site based observations and interviews.

Two of our key community partners are Mariam Merced from RWJUH Community Health Promotion and Jaymie Santiago from New Brunswick Tomorrow. Other faculty that have expressed interest in collaborating on this endeavor are Dr. Kevin Henry from the Department of Public Health and Dr. Laura Lawson from the Department of Landscape Architecture. This project...

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project will be open to medical residents, graduate and undergraduate students from all of these departments.

Desired Outcomes
Drawing Play is a long term project that provides a platform for multidisciplinary research endeavors along with clinical practice changes. The goals of this initiative therefore include: (1) developing and testing a communicative resource to successfully engage children in their own healthcare visits; (2) providing physicians with new diagnostic tools to better understand children's physical activity and safety and assist them in providing appropriate guidance and intervention; (3) expanding Rutgers reach into the local community to promote child health and well-being; (4) building a research team with diverse expertise that will conduct and publish research that will inform the fields of pediatrics, communication, design, public health, and community research in new and exciting ways.

Anticipated Resources
We are planning to begin this research project through a CATCH (Community Access to Child Health) grant through the AAP (American Academy of Pediatrics). We are applying for a $3,000 CATCH grant that would fund purchase of needed supplies and training seminars for staff and faculty involved in this project. The project will not need significant funding to get off the ground, but as the core project expands, funding from Rutgers would facilitate hiring undergraduate and graduate students to serve as research assistants collecting data in the waiting rooms while children are drawing, as well as during pediatricians clinical encounters with parents and children in which those drawings are used as a communicative tool.

Proposed Measures to Mark Progress or Determine Success
[Please explain, in one or two paragraphs, how progress toward achievement of the initiative will be measured and how overall success will be determined.]

Just as the project is multifaceted in the issues it addresses, our measurements of progress and success are likewise manifold.

Short-term outcomes and measures

Productive and ongoing multidisciplinary collaboration: We are building a unique research space with collaborations across disciplines around a long-term project, so the first measure of success is simply the number of different departments engaged in this endeavor. We believe that this research model can lead to multiple studies related to the utility of drawing play, each which can bring in their own funding to support the core goals of the investigation.

Child, parent and clinician satisfaction: We will assess the attitudes and satisfaction of children, parents and clinicians utilizing this communicative approach in pediatric clinic interactions to explore how participants perceive the use of this approach.
Impact of drawing play on clinic communication: We will identify recurring communication practices to evaluate how this approach impacts communication between the child, parent and pediatrician during clinic visits.

Impact of drawing play on health outcomes, reported behaviors and/or routines: We will explore connections between children’s drawings of play with baseline measures of physical health such as BMI. Additionally we will longitudinally track these measures over time for children participating in the study to see if using this new approach can more effectively engage children and their parents around physical health routines.

Long-term outcomes and measures

Extend creative, child friendly approaches to other community and pediatric clinics: The uniting factor is improving healthcare provision to increase the well-being of children. We know that addressing the big challenges of healthcare require moving upstream and connecting diverse sets of experience together. This proposal explores creative approaches to improving pediatric healthcare that could be implemented far beyond our one clinic if we show measurable gains from this approach. If that began to happen, we would consider this proposal immensely successful.

Connecting children’s perceptions to policy and planning: This project will identify, from children’s perspectives, facilitators and barriers of physical activity in children’s environments. Using these findings, we will draft a planning initiative to engage local leaders. We are working with community based organizations such as New Brunswick Tomorrow which has already connected many of the key stakeholders in transforming the city, from planners to policymakers. With this initiative we hope to connect children's perspectives to these decision makers and give their ideas a voice.