Children's Hospital of Philadelphia
PolicyLab

Improving Maternal and Child Health Through Interconception Care

Statement of Problem

Birth outcomes are worsening in the United States and demonstrate stark racial inequities. More specifically, Black birthing individuals currently experience three times the rate of maternal mortality compared to White birthing individuals and twice the rate of preterm births.

There is a growing understanding that preventive care is crucial to improve pregnancy outcomes, decrease health care costs and increase health equity. The interconception period, which spans from one birth to a subsequent conception, is a key period for health promotion. During this time, preventive services can improve birth outcomes by monitoring for and addressing postpartum complications. In addition, because 60% of births in the U.S. are repeat births, interconception health promotion can improve outcomes in subsequent pregnancies by supporting chronic disease management, pregnancy spacing and early entry into prenatal care.

The interconception period is also a critical time for infant health. For infants, their early growth and development contributes to future health, and that growth and development is influenced by parents' health. The importance of the interconception period has recently been emphasized by the American College of Obstetricians and Gynecologists and the National Academies of Medicine regarding the transition from obstetrical to primary care, and by federal and state efforts to extend Medicaid coverage for the full year after birth.

Furthermore, during the interconception period, individuals interact with the health care system both as patients in adult settings and as parents in pediatric settings. Pediatricians are increasingly attentive to the need to address maternal health issues such as postpartum depression. Despite this overlap, coordination between adult and pediatric settings around preventive health for families is rare, leading to potential gaps in care or redundancies in mother-infant services.

Description

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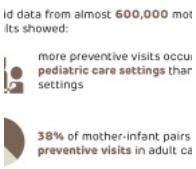

These findings demonstrate that pediatric health systems may be well-positioned to provide intergenerational family services to help coordinate preventive care for mothers and their children.

Analyzing care for mothers and babies in the first year of life

The goal of this body of research is to understand health care utilization from the perspective of the mother-infant pair and to help health systems achieve better integration and coordination of preventive care delivery, leading to reduced burdens for new families and improved maternal and child health outcomes.

This project addressed the lack of coordination between adult care and pediatrics by identifying preventive care opportunities from the mother-infant dyad perspective in the year after birth. Using Medicaid data from almost 600,000 mother-infant dyads with continuous coverage during the year after birth, our results showed that more preventative visits occurred in pediatric care than adult settings. We found substantial gaps in recommended preventive care, with 38% of mothers and almost 10% of infants receiving no preventive visits. Yet there was also substantial utilization of care across dyads, who had a median of nine total visits.

We also looked at characteristics of dyads with no adult preventive services and above average pediatric preventive services to suggest populations that might particularly benefit from integrated services in pediatric settings. We found that dyads with Black and Latinx mothers, and those with preterm birth, were particularly likely to be in this category. Our results demonstrate both gaps in preventive care receipt but also a substantial number of visits, suggesting strategies to streamline care for mother-infant dyads would lead to improved outcomes.

We then examined a subgroup of this Medicaid sample, made up of more than 17,000 women who had either prematurity, hypertension, or diabetes in the first pregnancy and who went on to have a second birth within three years. We found substantial recurrence of pregnancy complications, with 48% experiencing prematurity, hypertension or diabetes in the subsequent pregnancy. However, adult preventive care in the year after birth was associated with lower odds of hypertension in subsequent pregnancies.

Lastly, our team looked at more than 20,000 dyads in the Medicaid sample mentioned above with mothers who are 18 years or younger. These parenting teens could be seen in the same setting as their infants, regardless of whether infant care was provided by a pediatrician or a family medicine office. We found that among teens who received integrated services, meaning visits for the infant and the mother were billed by the same clinician on the same day, rates of preventive care were higher for mothers. However, these integrated visits were not common. Only 17% of teens had integrated visits in the year after birth. Integrated visits were associated with younger age, maternal health risks, non-Latinx White race, living in rural or high-poverty areas, and receiving care from Family Medicine-trained clinicians. Again, these findings suggest that there are opportunities to better integrate preventive care with a goal of improving outcomes.

Exploring factors associated with receipt of interconception care

In a secondary analysis of data from 376 women who participated in a randomized trial on interconception care in pediatric settings, we assessed for factors related to interconception care utilization. We found that enabling factors, particularly having a personal doctor or nurse and having non-Medicaid insurance, were associated with receipt of care in this period.

Examining use of primary care among pregnant & parenting teens

This next study was designed to help us understand patterns of preventive care among pregnant pediatric patients. In this cohort of 150 teens with a positive pregnancy test at two pediatric primary care sites, we found primary care visits and reported contraceptive use declined following a pregnancy test, even when teens brought their infants for care at the same primary care site.

Next Steps

Taken together, this research demonstrates both substantial interconception utilization of care and substantial gaps in care. We found opportunities to offer preventive services during infant visits, but also demonstrated that providing integrated preventive care to mother-infant dyads is not the norm, even in circumstances where one office could feasibly offer care to both members of the dyad. Next steps to improve care and reduce burdens for families may include understanding health care structures and processes that support integrated care for mother-infant dyads and exploring care navigation strategies to address fragmented care in the interconception period.

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PolicyLab Leads

Emily Gregory MD, MHS

Faculty Member

Emily Gregory is a faculty member at PolicyLab, an assistant professor in the Division of General Pediatrics at Children’s Hospital of Philadelphia (CHOP) and the Perelman School of Medicine at the University of Pennsylvania, and a practicing primary care pediatrician. Her research addresses maternal-child health and

health care redesign. Her current work focuses on the role of pediatrics in supporting health care access and health behavior change for women following high-risk pregnancies, with a goal of improving subsequent pregnancy outcomes and long-term women's health. She is interested in teamwork and the role of nurses in pediatric primary care. Prior work has addressed breastfeeding, postpartum depression, healthy weight during pregnancy, contraceptive access and preventive health care utilization, among other topics.

Dr. Gregory holds a bachelor's degree from Harvard University and a medical degree from McGill University. She completed her pediatrics residency at Massachusetts General Hospital and fellowship in Academic Pediatrics at Johns Hopkins, where she also obtained a Master of Health Sciences at the Johns Hopkins Bloomberg School of Public Health. Dr. Gregory's research has been supported by the National Institutes of Health, the March of Dimes, the U.S. Maternal Child Health Bureau, and the Centers for Disease Control and Prevention through a Young Investigator Award from the Academic Pediatrics Association.

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Team

Molly Passarella
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Statistical Programmer

Molly Passarella is an experienced statistical programmer at PolicyLab and the Center for Perinatal and Pediatric Health Disparities Research (CPHD) at Children's Hospital of Philadelphia. Since 2012, Ms. Passarella has worked closely with Dr. Scott Lorch and several notable investigators on studies measuring infant quality of care, analyzing systems delivering neonatal care, assessing intermediate factors contributing to racial/ethnic disparities, quantifying the quality of health care received by both pediatric and adults patients, investigating the role of race/ethnicity on outcomes and health care use, and the overall role of the health system on variations in patient outcomes.

Ms. Passarella is an expert in statistical designs and methods used in health services research, in particular with univariate and multivariate models, and matching methods. She is also well versed in programming logistic regression models and performing statistical tests. She is a skilled SAS programmer and experienced in merging databases to create analysis files for the development of models. Ms. Passarella provides needed

statistical analyses as requested by faculty investigators. She also consults on projects and can teach young investigators basic programming skills in Stata, SAS and R.

Ms. Passarella graduated from Monmouth University with a Bachelor of Science degree in Mathematics in 2009 and from Villanova University with a Masters in Applied Statistics in 2012.

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Alexander Fiks
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Faculty Member

Alex Fiks is a faculty member at PolicyLab at Children's Hospital of Philadelphia (CHOP), an urban primary care pediatrician at CHOP, director of Clinical Futures at CHOP and an associate professor of pediatrics at the Perelman School of Medicine at the University of Pennsylvania. He is also the director of the American Academy of Pediatrics (AAP) Pediatric Research in Office Settings (PROS), a national research network, medical director for the Pediatric Research Consortium (PeRC), CHOP's practice-based research network and co-director of the Possibilities Project, an initiative to innovate primary care delivery. Additionally, Dr. Fiks is a founding member of the hospital's Department of Biomedical and Health Informatics.

Board certified in clinical informatics, Dr. Fiks' research is aimed at improving outcomes for ambulatory pediatric patients through practice-based research with a focus on improving health and health care decision-making through health information technology. To achieve these goals, much of Dr. Fiks' research is focused on fostering shared decision making between clinicians and families, especially in the setting of behavioral health conditions. He is also especially interested in how electronic health record data may best be used to improve primary care, medication use and child health more broadly. As Director of AAP PROS, Dr. Fiks has been involved in building the Collaborative Electronic Reporting for Comparative Effectiveness Research (CER^2), an electronic health record database designed to support pharmacoepidemiologic and other comparative effectiveness studies that currently includes >2 million U.S. children from across multiple health systems.

Dr. Fiks received his medical degree from Harvard University, and received a Master's of Science in Clinical Epidemiology (MSCE) degree from the University of Pennsylvania. He has received additional training in clinical informatics.

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Related Tools & Publications

- Streamlining Preventive Care for Moms and Babies in First Year of Life
  Blog Post
  Jun 11, 2020
- Enabling Factors Associated with Receipt of Interconception Health Care
  Article
  Dec 2019
- Preventive Health Care Utilization Among Mother-infant Dyads With Medicaid Insurance in the Year Following Birth
  Article
  Mar 2020
- Reaching Mothers Through Intergenerational Care in Pediatric Settings
  Research at a Glance
  Jun 2020
- Preconception and Interconception Pediatric Primary Care Utilization of Pregnant and Parenting Teens
  Article
  Jan 2021
- Interconception Preventive Care and Recurrence of Pregnancy Complications for Medicaid-insured Women

Article
Feb 2022

- Prevalence and Predictors of Integrated Care Among Teen Mothers and Their Infants
Article
Jun 2022
- Motivational Interviewing to Promote Interconception Health: A Scoping Review of Evidence from Clinical Trials
Article
Nov 2022
- Acceptability of Dyad Care Management After Preterm Birth: A Qualitative Study
Article
Nov 2023
- Integrating Care for Mother-infant Dyads After Birth: A Qualitative Study of Clinician Perspectives on Feasibility
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Dec 2023
- Communication and Birth Experiences Among Black Birthing People Who Experienced Preterm Birth
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