GEORGETOWN UNIVERSITY
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HEALTH CARE FINANCING INITIATIVE

Continuity between Prenatal and Labor and Delivery Care Serving a High-Risk Urban Population

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Abstract

This brief study measures continuity between prenatal and delivery care in Safe Babies Safe Moms' (SBSM) population and explores the association of that continuity to patient demographics and health history, birth outcomes, and delivery costs in SBSM's inaugural year. The results help contextualize our health economics research and recommendations for SBSM.

SBSM is a program of MedStar Health to improve perinatal outcomes in Washington, DC. SBSM is supported by a 5-year grant from the Clark Foundation.

Introduction

Continuity between prenatal care and birthing at MedStar Washington Hospital Center (MWHC) deserves particular attention as a juncture in patient flow and data management that influences outcomes we can observe and evaluate for clinical and cost effectiveness.

SBSM augmented services at OB Gyn Specialty Care and several more clinics in DC serving populations where rates of adverse perinatal outcomes were most severe. During 2021, new screening and care bundles focused on priority health conditions potentially impacting pregnancies – hypertension, diabetes, anemia, and behavioral/mental health MWHC is the delivery hub of SBSM's care delivery sites . In 2021, ~25% of DC moms, and over ~40% of moms residing in Wards 7 & 8 (Southeast) delivered at MWHC.

Historically, walk-in deliveries have been associated with excess costs and barriers to efficient labor and delivery care (Miller 2005, Shaw 2008). Electronic health records have greatly improved records access, but barriers still exist when patients transfer clinics or walk-in to hospital for delivery. SBSM has made efforts to improve communication and records access with local clinics that frequently provide prenatal care to patients served by MWHC.

Methods

We used a retrospective cohort design to track the prenatal and delivery encounters of ~3,500 persons delivering their babies at MWHC in 2021. We split patients into 3 groups, based on prenatal relationship with MedStar and SBSM.

Group 1: OBGyn Specialty Care Prenatal Patients. 3 or more visits to the clinic with the highest concentration SBSM service enhancements in the program's first year.

Group 2: Others with MedStar Prenatal Visits
This group includes patients seen at any MedStar OB Clinic, including patients who were occasional patients at OB Gyn Specialty Care.

Group 3: Walk-In Deliveries
This group includes patients who delivered at MedStar Washington Hospital Center, but were not prenatal patients within the MedStar records' system.

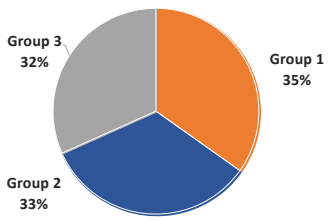
Data for this study was generated from MedStar internal sources. Any prenatal history of Group 3 patients is beyond this study. Python, Excel, and STATA for analysis

Results

Two-thirds of patients who delivered babies at MWHC got prenatal care from MedStar Health. Patients with 3 or more visits to OBGyn Specialty Care were over half of the prenatal patients who delivered at MWHC. **Demographic differences between Prenatal Groups and Walk-Ins were statistically significant, but not of a magnitude that can be considered operationally distinct**. Patients in subgroups of particular interest: Black, Residents of DC Ward 7&8, Medicaid recipients were a greater proportion of the prenatal patients(Groups 1 and 2) and of the Walk-Ins (Group 3).

In 2021, SBSM has implemented screening and care bundles for 4 health conditions potentially impacting pregnancies – hypertension, diabetes, anemia, and behavioral/mental health. Records from 39% of Group 3 patients showed diagnostic markers of these priority health conditions By comparison, 63%*** of Group 1 patients had one of the 4 conditions documented.. In Group 2, 50%** had markers of these preexisting health conditions.

SBSM 2021 DELIVERY COHORT



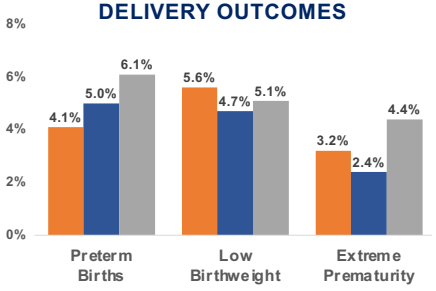
Birth outcomes showed some statistical differences, but not a clear pattern. Group 3 patients had a higher rate of preterm births and babies with low birthweight- the two most commonly reported adverse birth outcomes– compared to prenatal patients. Walk-In patients delivered babies diagnosed as Extremely Premature less than Group 2 patients, but more than Group 1, with these differences significant at the p<.05 level. In this sample, more than half the moms experienced some complication during labor and delivery. Prenatal patients' records had higher occurrences of these diagnoses than Walk-Ins. These differences were significant at the p<.05 level

Cost per delivery for Walk-In patients was higher than for both groups of prenatal patients, but with unequal variance, and with unclear statistical significance.

DEMOGRAPHICS & HEALTH HISTORY

	Total	Group 1	Group 2	Group 3
Mothers	3,496	1,217	1,171	1,108
Black	52.6%	60.0% ***	53.4% ***	43.8%
Ward 7or 8 Resident	31.7%	39.4% ***	33.2% ***	21.6%
Medicaid	59.7%	59.0% ***	62.3%	57.9%
Age <18	1.26%	.99% *	1.28%	1.53%
3+ Prior Pregnancies	29.6%	32.3% *	28.4%	28.0%
Prior Preterm Delivery	3.8%	8.22% ***	2.43%	.27%
Preexisting Dx	35.1%	44.2% ***	37.7%	22.1%
MedStar Prenatal Visits		12.4	4.7	--

DELIVERY OUTCOMES



	Total	Group 1	Group 2	Group 3
Cesarean Section	33.8%	36.3%	30.0% **	35.1%
Preterm Birth	5.4%	4.1% *	5.0% **	6.1%
Low Birthweight	5.2%	5.6% **	4.7% *	5.1%
Extreme Prematurity	3.6%	3.2% *	2.4% *	4.4%
Diagnosed Complications in L & D	57.5%	56.5% **	61.6% *	54.1%
Avg Cost/ Patient				
Prenatal + Delivery	$8,640	$10,394	$8,304	-n/a-
Delivery Only	$6,148	$6,261	$6,045	$6,475

Source: Georgetown HCFI Analysis of data from MedStar Health as part of the SBSM Health Economics Research Team.
** p <.05, **p<.01, ***p<.001 compared to Reference Group 3*

Limitations and Next Steps

We interpret the results of this preliminary analysis with great caution, due to three primary limitations: i) The evolving nature of the SBSM clinical implementation, ii) yet-to-be settled consensus on operating definitions for elevated risk and iii) reliance on billing systems designed for discrete payment transactions to assemble a comprehensive, longitudinal view of each patient served by MedStar. Despite the limitations, our findings offer insight to the SBSM team in several ways: refining the conceptual framework for segmenting patients at elevated risk for adverse outcomes, recognition of which subgroups and which outcome metrics are most influenceable and observable. Going forward, the health economics team will continue to partner with SBSM work groups to further distinguish the patients and services most impacted and benefitting from enhanced services through SBSM and at MWHC.

Conclusion & Insights for Practice

Most patients delivering babies at MWHC are also prenatal patients, and it appears overall, there is continuity of care between prenatal and birthing care. Patients with history and diagnoses suggesting elevated risk were more likely to be prenatal patients before delivery at MedStar. Yet, one in three patients whose birth outcomes are captured in MWHC results did not have the full benefit of prenatal care, caregiver coordination, and efficient records flow before their visit to give birth.

The results of this analysis highlight the importance of developing data systems to exhibit the relationship between patient characteristics, history, service utilization, outcomes and costs, and to do so from a comprehensive view of the entire pregnancy. In advance of that lens, we cannot yet articulate the true impact of clinical interventions and financial investments intended to address very important needs for moms and babies in DC. Furthermore, timely access to records prior to patients presenting at MedStar, as well as records of outcomes following care at MedStar should be elevated as a program management priority across all SBSM departments and partners.

Further assessment with the SBSM clinical and research teams will be needed to address specific care needs for subgroups enrolled in the program, and to further reduce the obstacles to efficient care currently experienced for patients who do not or cannot access the full range of services available within SBSM.

References

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2. Shaw, K. J., Gutierrez, M., Fridman, M., & Gregory, K. D. (2008). Health care costs associated with changing clinics and "walk-in" deliveries: evidence supporting a regionalized health information network. American Journal of Obstetrics and Gynecology, 198(6), 707

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