Integrating Patient Choice and Social Needs into Health Plan Infrastructure:
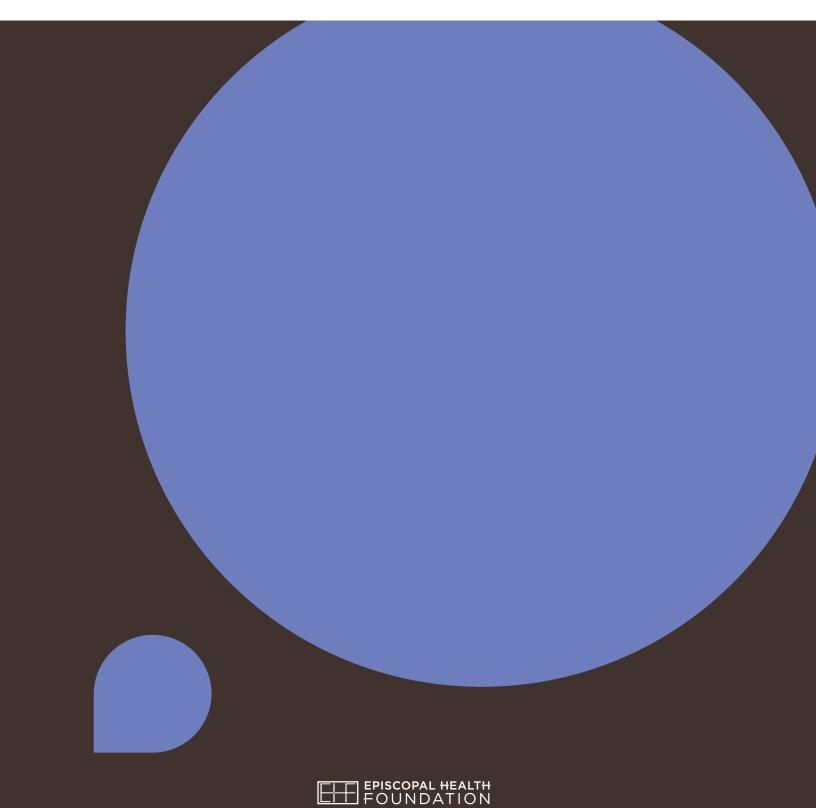# The Nurture Program, A Scalable Model for Care

EPISCOPAL HEALTH FOUNDATION

Integrating Patient Choice and Social Needs into Health Plan Infrastructure: The Nurture Program, A Scalable Model for Care

Driscoll Health Plan (DHP), a non-profit community-based health insurance plan serving South Texas and the Rio Grande Valley introduced the Nurture Program in collaboration with Factor Health Labs in the Population Health department of Dell Medical School, UT Austin.

Goal: This initiative aimed to improve maternal and newborn health by expanding access to nutrition education and food purchasing support for pregnant women and assess practical concerns around future scalability via health plans.

Specific Challenges Addressed: This program and assessment aimed to (a) better understand how to maximize plan member uptake of resources, (b) how to integrate delivery into payer organizations, and (c) whether we could deliver assessments with plan data primarily, to minimize the time, cost and complexity of acquiring data from provider organization.

a) ***Addressing low participation rates through person-centered design:*** Food and nutrition access programs aimed at specific populations often struggle with low participation.[1] This is frequently due to programs unintentionally introducing new barriers for individuals already facing healthcare challenges or being too narrowly designed, failing to account for the real-life complexities of the target population. The success of these programs depends on a well-designed implementation that prioritizes the patient. In the current program we designed both targeted practical nutritional consultations accompanied by more flexible grocery store gift card resources to allow participants agency and a low-stress approach to utilizing resources.

b) ***Exploring health plan ability to integrate nutritional programming:*** Health plans can either completely outsource delivery of nutrition programs, or, if the program design enables it, integrate delivery within population health, member service or other departments. We designed Nurture with components that could be easily delivered via a health plan, trained health plan staff, as necessary. In the current implementation, education and food purchase resources were delivered by the health plan staff and only nutritional consultants were outsourced. The latter too could be delivered in-house if there is already existing expertise at the health plan.

c) ***Making assessments more efficient by focusing on health plan data:*** In addition to implementation challenges, the ability to evaluate programs such as Nurture is more difficult at the health plan level as access to clinical data can be limited or costly and complex to acquire. To evaluate the Nurture program's effectiveness, we reviewed DHP's available data, primarily claims, building analysis around the existing DHP infrastructure.

PROGRAM ELEMENTS & ENROLLMENT

Program: The Nurture Program was designed as a quality improvement initiative targeting pregnant women aged 30 years and above enrolled in DHP's STAR and CHIP programs. The program enrollment ran from October 2022 to July 2023 and sought to promote healthier pregnancies through nutrition-based interventions. Specifically, the program element delivery was designed with a member-centric focus, ensuring that they might maximize their utilization of all parts of the program. Program elements included:

1) **Nurture Resources:** Participants received monthly packages, up to 8 total, during pregnancy, each containing:
    i) A $40 grocery store gift card (two $20 cards per package).
    ii) A healthy eating information sheet from Brighter Bites.
    iii) Three nutritious recipes.
    iv) Nutrition-related FAQs (included in half of the packages).

    The grocery gift cards were from a widely used chain store located in participants' neighborhoods, making them easily accessible and more seamlessly fitting into their daily lives. Unlike traditional food assistance programs, these gift cards were not restricted to specific food items—or even food at all. To maximize support, they were accompanied by healthy eating guides and recipes with simple, everyday ingredients to encourage nutritious choices. However, if a participant had a more urgent need, such as purchasing a basic household staple, they had the flexibility to do so. This approach promotes a holistic model that prioritizes individual agency, allowing participants to address their most pressing needs.

2) **Nutritional Consultations:** Each participant had access to two 30-minute telephone consultations with a nutritionist. These consultations were scheduled by community health workers (CHWs) during their initial call to confirm program participation.
    i) To encourage engagement, participants could reschedule as needed. They received text reminders one day before their appointments. Consultations were available in English or Spanish, based on participant preference, and were tailored to each individual's nutritional goals and interests during pregnancy.
    ii) During the first session, participants worked with the nutritionist to develop a personalized nutrition action plan. The second session provided additional support and information to reinforce these goals.

Enrollment Process*.* Eligible members were identified bi-weekly from membership rosters, randomly selected, and contacted via SMS, mailed flyers, and follow-up calls by Community Health Workers (CHWs). The CHW's outreach included 3 attempts to contact the members at different times of the day and days of the week.   Importantly, all program outreach was conducted in the member's preferred language when known.

The program's effectiveness was assessed through multiple data sources, primarily claims data for both mother and newborn, and included health plan membership files, nutritional consultation utilization, and gift card usage.

1) **Participant Engagement:** Participant engagement was measured by (i) enrollment levels and uptake of (ii) nutrition education sessions and (iii) grocery gift card usage.
   i) Enrollment: The plan's population health division employs community health workers (CHWs) who made the initial calls to enroll participants. They were able to reach 46% of members referred to the Nurture team. Of those reached, 224 of 225 (99%) expressed interest in joining the program.
   ii) Nutritional Consultations Uptake: Participation in the consultations was high, with 89% of participants attending at least one session and 82% attending two sessions.
   iii) Grocery gift card usage: 86% of grocery cards were fully redeemed during a final check one month after program completion. On average, participants spent $234/- in grocery cards over the course of the program.

2) **Maternal Health Outcomes:** Outcomes for the group that received the program were better than those in the control group for rates of gestational diabetes, 36% in the group that received the program versus 38% for those that did not, pregnancy induced hypertension, 19% vs 21%, and preeclampsia 8% vs 10%.

3) **Delivery and Newborn Outcomes:** Vaginal deliveries were higher in the program group compared to the control, with 56% of program group delivering vaginally while 49.5% in the control group. The rates of preterm birth were 13% in the program group and 17% in the control group. Length of stay for newborn, measured in days, was lower in the program group with an average of 3.7 days compared to the control group at 4.6 days. The one outcome that was reversed was the rate of babies small for gestational age, with controls having a lower proportion relative to program.

LEARNING

1. **High enrollment.** When contacted, mothers wanted this flexible nutrition-focused support.
2. **High nutritional consultation uptake.** Participation in the consultations was high, with 82% of participants attending both sessions and 7% attending one session. Compared to other maternal health interventions that include nutrition education, Nurture had a higher participation rate.[2] This reinforces that mothers on Medicaid sought more practical education.

3. **High food purchase utilization**. Utilization was higher than seen with vouchers or other methods, with 86% of grocery gift cards utilized completely.[3] Thus, the resources were in a format that were usable and were clearly needed. The value of the gift cards may have to be higher to increase the likelihood of seeing statistically significant changes.
4. **Outcomes, maternal, delivery and newborn–** Most maternal, delivery and newborn outcomes were better for those mothers that received the Nurture program compared to controls. Specifically, the rate of vaginal births was borderline significant (p=0.07) with 6.5% of women delivering vaginally instead of via C-section. By addressing food insecurity, health literacy and nutrition counselling, this may have increased engagement and trust by the mothers with MCO/healthcare providers in the management of their care leading to reduced C-section rates. This is evidenced by the high engagement rate of the program and usage of the gift card.
5. **Claims-based approach to assessment:** Claims data is primarily categorical and discrete, thus even with ~200 cases and controls with a 1:4 ratio, statistical significance was not achieved on most metrics. In addition, the numbers available for pilot evaluation can be reduced with incomplete data sets, inability to match (mother to baby in this case), and extended claims lags.

Financial Implications

We used the improvements in vaginal births and newborn length of stay to *estimate the potential* for cost savings because of Nurture. Table 3 in Appendix describes the estimates of cost savings for improvement sizes as measured in this study for reduction in C-section (6.5% of women) and reduction in newborn length of stay (0.9 days on average). With assumptions of $7000/- difference in the cost of C-section versus Vaginal birth, and $1000 per newborn day in hospital, we calculate potential cost savings for 1000 women at ~$1.35 million. We next compute program costs for 1000 women, including cost of grocery cards, nutritional consults, and admin expenses at 15% as ~$400,000. Thus, we estimate a net savings for 1000 women as ~$950,000. These assessments provide a ballpark for the scale of savings possible with the degree of outcomes improvements we observed.

Conclusion:

The Nurture Program demonstrates how patient-centered social interventions can be effectively integrated into member support within a health plan's existing infrastructure. By addressing nutritional needs and providing practical nutritional education, this pilot program showed promise in improving maternal and newborn health outcomes. Based on outcome size, the program also showed potential for reducing healthcare costs net of program implementation costs. As a scalable model, Nurture illustrates how health plans can incorporate nutritional support programs to enhance outcomes and better engage high-risk populations. Plans might consider alignment of a potential program with current organizational infrastructure, gaps and the ability and cost to fill such gaps

in areas such as enrollment and implementation, including assessing any potential benefits accrued when scaling delivery.

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Appendix: Demographics, Outcomes and Cost Savings Model

Table 1. Demographics of the cases and controls

Demographics		N (%)	Case N (%) 221	Controls N (%) 1053
Ethnicity/ Race	Asian/ Pacific Islander	3 (0.24)	0	3 (.28)

	American Indian	1 (0.08)	0	1 (0.09)
	Hispanic	564 (44.27)	107 (48.42)	457 (43.4)
	Other	14 (1.1)	3 (1.36)	11 (1.04)
	White	152 (12.0)	14 (6.38)	138 (13.1)
	Black	11 (0.86)	4 (1.81)	7 (0.66)
	Missing	529 (41.5)	93 (42.08)	436 (41.4)
Mother age at delivery, M (SD)		34.21 (3.07)	34.24 (2.98)	34.20 (3.09)
Location of Birth	CHIP Nueces	28 (2.2)	10 (4.52)	18 (1.71)
	STAR Hidalgo	725 (56.9)	135 (61.09)	590 (56.03)
	STAR Nueces	514 (40.4)	70 (31.67)	444(42.2)
	Missing	7 (0.6)	6 (2.71)	1 (0.09)

Interpretive note: Considerable missing data for ethnicity/ race but comparable distribution across groups.

Table 2. Outcomes for mother and baby measures from claims database.

Outcomes	N (%)/ M(SD)	Case N (%)= 221	Controls N (%)=1053	p-value from logistic or linear regressions
Maternal				
GDM-1 dx (usual)	470 (37.60)	78 (36.11)	392 (37.91)	0.692
Pregnancy induced hypertension dx	258 (20.64)	41 (18.98)	217 (20.99)	0.528
Preeclampsia	118 (9.44)	17(7.87)	101 (9.77)	0.391
All obesity dx	582 (46.56)	99 (45.83)	483 (46.71)	0.907
Overweight to Obesity dx	587 (46.96)	101 (46.76)	486 (47.00)	0.954
Delivery				
Miscarriage	36 (2.87)	9 (4.48)	27 (2.57)	0.142
Vaginal delivery	630 (50.56)	109 (56.19)	521 (49.52)	0.073
Newborn				
Non live birth	7 (0.56)	1 (0.45)	6 (0.57)	0.996
Preterm birth	202 (16.40)	24 (12.63)	178 (17.08)	0.161
Newborn weight concern (small or large for GA/ birth weight categories)	103 (9.22)	20 (11.11)	83 (8.86)	0.354
Small for GA	39 (3.1)	13 (5.9)	26 (2.47)	0.018
Large for GA	3 (<1)	1 (<1)	2 (<1)	0.436
Gestational Age, M(SD)	37.56 (2.36)	37.68 (2.13)	37.54 (2.40)	0.482
Length of Stay for baby, M(SD)	4.44 (12.08)	3.72 (9.96)	4.58 (12.44)	0.402

Abbrv. Dx = diagnosis, GDM = gestational diabetes diagnosis, GA = gestational age

Table 3. *Estimated* cost savings for 1000 women from improvements in vaginal delivery and reduction in newborn stay.

Estimates	Outcome Difference (from study)	Cost Reduction Estimate for 1000	Benchmark used in estimate
Reduction in C-section deliveries	6.5% points	$ (455,000)	C-section vs. Vaginal cost ~ $7000 p delivery
Decrease in newborn days in hospital	0.9 days	$ (900,000)	1 day in hospital ~ $1000 per newborn day
Total Cost Savings for 1000 women		**$ (1,355,000)**	
	Costs per Person (from study)	Program Cost Estimate for 1000	
Grocery Store Cards	$ 234	$ (234,000)	
Administrative at 15%	$ 35	$ (35,100)	
2 Nutritional Consults (incl of admin)	$ 130	$ (130,000)	
Total Program Cost for 1000 women	**$ 399**	**$ (399,100)**	
Net Cost Savings for 1000 women		**$ (955,900)**	