

Title: Prediabetes Outreach Program

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PROBLEM STATEMENT

- The Centers for Disease Control and Prevention (CDC) report that 37.3 million (11%) people in the United States have diabetes (CDC, 2022).
- Additionally, 96 million American adults have prediabetes (1 in 3), of those, more than 8 in 10 are unaware; without taking action people with prediabetes could develop Type 2 Diabetes (T2D) within 5 years (CDC, 2023). Therefore, screening is a valuable part of prevention.
- Increased prevalence of T2D has a substantial impact on low-income communities (Shirinzadeh et al., 2019). Outreach in underserved high-risk populations is needed urgently to prevent further widening of health disparities (Ritchie et al., 2020).
- Overweight and obesity are modifiable risk factors for T2D. A landmark study identified that an average weight loss of 5-7% reduces the progression from prediabetes to T2D by 58% (Knowler et al., 2002).
- The CDC, Diabetes Prevention Program (DPP) is a lifestyle modification program addressing T2D prevention.

PROJECT PURPOSE

- A health department (HD) on the central east coast of Florida had concern for their community's death rates due to T2D and found that 30% of adults (≥18 years) in their county were obese, compared to 27% in the state of Florida. To reduce obesity and diabetes rates they applied for funding to implement a DPP, but the program had a problem; poor enrollment.
- The overarching aim of the quality improvement (QI) project was to improve enrollment into the DPP. Additional goals were to increase screening, expand to lower socioeconomic areas, and enhance weight loss in future DPP cohorts.
- In overweight and obese adults with prediabetes, does revision of the enrollment process for the DPP, increase enrollment rates and reduce the weight of the new participants by 2% compared to the previous practice over 90 days?

MODEL/NURSING THEORY

- The Model for Improvement with the PDSA Cycle was used to provide a systematic approach to this QI project.

METHODS

- Participants:** Inclusion: Adults aged 18 and older who met the high-risk (≥5) criteria on the Prediabetes Risk Test (PRT). Exclusion: pregnancy
- Setting:** County HD and local community center
- Instruments/Tools:** Prediabetes Risk Test (PRT) Tool (Appendix A), sensitivity and specificity of the PRT were estimated to be 81.4 and 70.2 (Gamston et al., 2020).
- Intervention and Data Collection:** Developed a protocol to implement screening within the HD, improve community outreach, increase enrollment into the DPP, and developed a pre-session to mitigate barriers to enhance retentions and weight loss.
- Data Analysis:** Descriptive statistics and a one-sample test of proportion was used to evaluate weigh loss and screening outcomes.

RESULTS

Screening

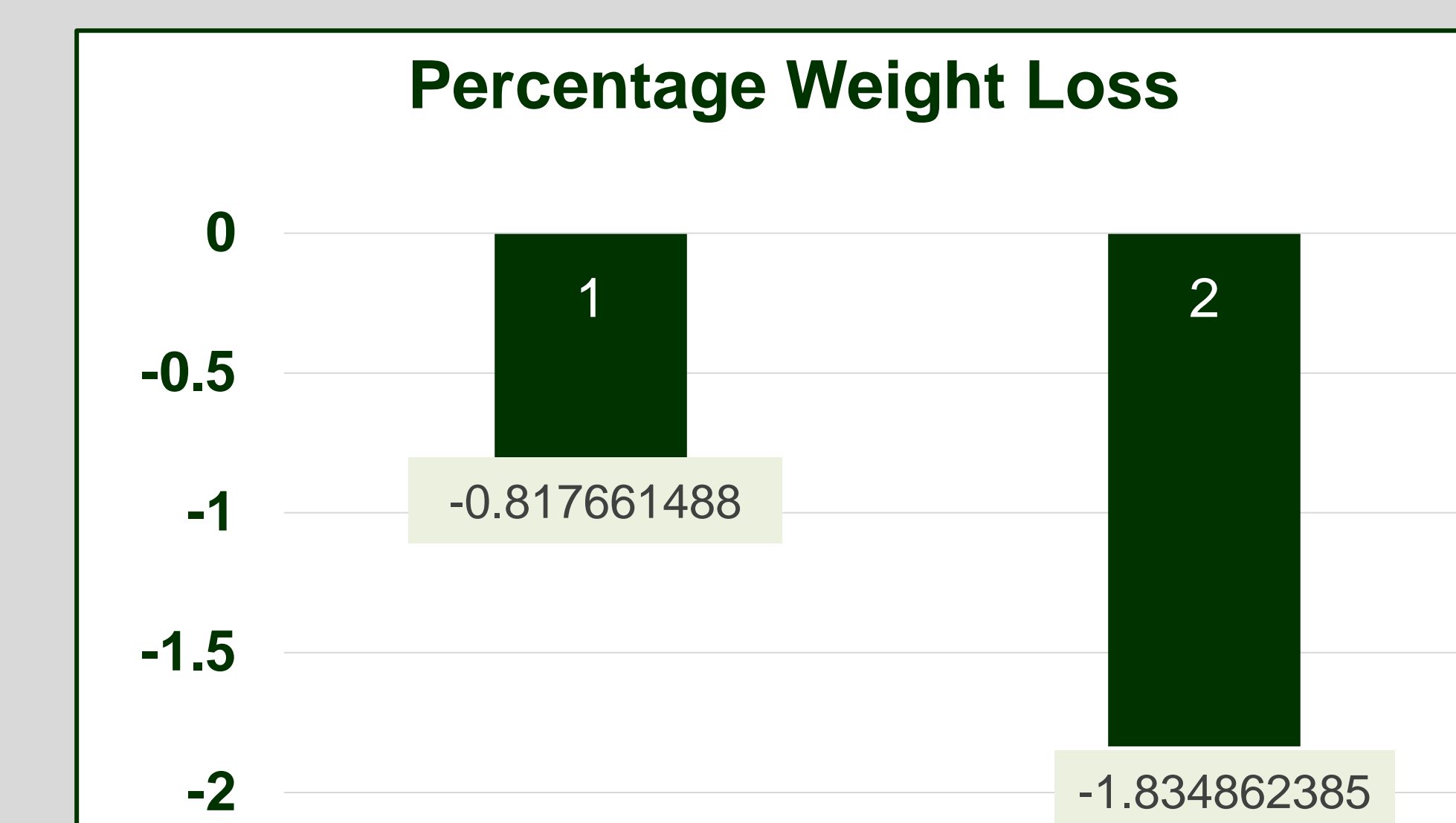
- Of the 351 patients treated in the health department clinic, 76 of them (21.6%) were screened using the PRT, an improvement ($p < 0.0001$) from no screenings prior to the intervention.
- Of these 76 individuals, 10 (13%) screened high-risk and eligible to enroll in DPP, a significant improvement ($p < 0.0001$).

In-Clinic Screening		
Month	Screenings per Month	# met Criteria for DPP
November 2022	32	3
December 2022	6	1
January 2023	18	4
February 2023	20	2
Patients seen in HD clinic (n=351)	76	10
Post-intervention Results	21.7% ($P < 0.0001$)	13.2% ($P < 0.0001$)

Weigh loss

- The addition of a pre-session prior to the DPP start date improved weight loss by 1%

60 Day Percentage Weight loss Comparison Pre & Post Intervention			
	0 Days Weight	60 Days Weight	% Weight Loss
Pre Intervention Cohort (n=6)	1,233	1,223	-0.817661488
Post Intervention Cohort (n=3)	777	763	-1.834862385



DISCUSSION

- From the 351 patients treated in the health department over 120 days, 76 (21.6%) individuals were screened using the PRT. The increased screening from zero to 76 was a statistically significant improvement ($p < 0.0001$).
- Ten of the 76 patients (13.2%) screened high-risk ≥5 on the PRT and were eligible to enroll into the DPP, a statistically significant improvement ($p < 0.0001$).
- Pre and Post-intervention weight loss measurements showed a clinically significant improvement of 1% weight loss.

PIVOTS

- The project implementation had multiple barriers and pivots (see swim lane diagram) that required pivotal redirection.
- Resignation of DPP leader prevented enrollment from the initial PRT screening quick response code flyers that were placed in the community; redesigned the screening flyer and passed out 100 flyers at the Martin Luther King parade, passed out 50 flyers at a local Publix.
- Community partner stakeholders of the HD received emails to forward to their communities, which led to three enrollees to the in-person cohort.
- Patient refusal to attend an in-person cohort; planned and designed an online cohort, which is currently being enrolled.

IMPLICATIONS FOR ADVANCE PRACTICE NURSING

- Although the DPP proves to decrease prediabetes and T2D risks, screening, enrollment and retention are the greatest challenge. This QI project provided a template with solutions to mitigate these barriers.
- The DPP provides a preventative and proactive approach to prevent obesity and T2D through education and awareness to make educated choices regarding their health, leading to a healthier community.
- Poor enrollment from low socioeconomic areas is well documented (Ritchie et al., 2020). Feedback from the post-intervention cohort identified that implementing the DPP in their neighborhood was helpful. Continuing to bridge the gaps into the low socioeconomic communities and offering online access improves accessibility to DPP programs.

SUSTAINABILITY

- Screening within the HD clinic with the PRT will continue to provide potential enrollees into the DPP.
- Providing the DPP in-person and online will help to sustain the programs continuation, and offer the community options in format.
- The implemented pre-session will continue to be incorporated into the DPP courses.

REFERENCES

Please scan QR code for references and appendix



SCAN ME

Barriers and Pivots

Swim lane diagram: Decreased Screening Time and Loss of Community Outreach = Poor Enrollment

Time	September 2022	October 2022	November 2022	December 2022	January 2023	February 2023
Health Department DPP Team		Coordinator resigned- delayed start	No DPP coordinator to enroll into DPP from the QR code flyers			DPP cohort coach resigned HD. However, continued to coach cohort. Coach's vested interest in enrollment interventions was jeopardized
Health Department Closures	Hurricane Ian- HD closed for shelter use	Hurricane Nicole- closed for shelter. HD Closed. Loss in screening time	Thanksgiving 1 week holiday closure-loss in screening time		Seasonal Holiday 2 Weeks holiday closure- loss in screening time	
Pivot/ Solutions			Screened In-clinic refusals. Planned and designed online cohort	Mass email sent to community partner stakeholders	Passed out 100 redesigned flyers at the Martin Luther King parade.	Passed out 50 flyers at Local Publix for online DPP. Enrollment started into the online DPP.

A diabetes prevention program was improved by a created screening process, expanded community outreach to a high-risk area, and the weight loss was enhanced with the addition of a pre-session.