



TEXAS TECH UNIVERSITY
HEALTH SCIENCES CENTER.
School of Nursing

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Interprofessional Collaborative Practice (IPCP) For Cardiovascular Risk Reduction

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BACKGROUND

- **The Larry Combest Community Health and Wellness Center (Combest Center)**, operated by the Texas Tech University Health Sciences Center (TTUHSC) School of Nursing (SON), is a nurse-managed federally qualified health center (FQHC), located in Lubbock, Texas, USA.
- The Combest Center is able to provide care management coordination and enabling services to vulnerable populations that facilitate their access to and quality of health care while providing typical clinical services expected in primary care.
- Average over 4,700 unduplicated patients receive services from the Combest Center annually, and we are expecting to serve over 9,000 unduplicated patients annually by 2016.

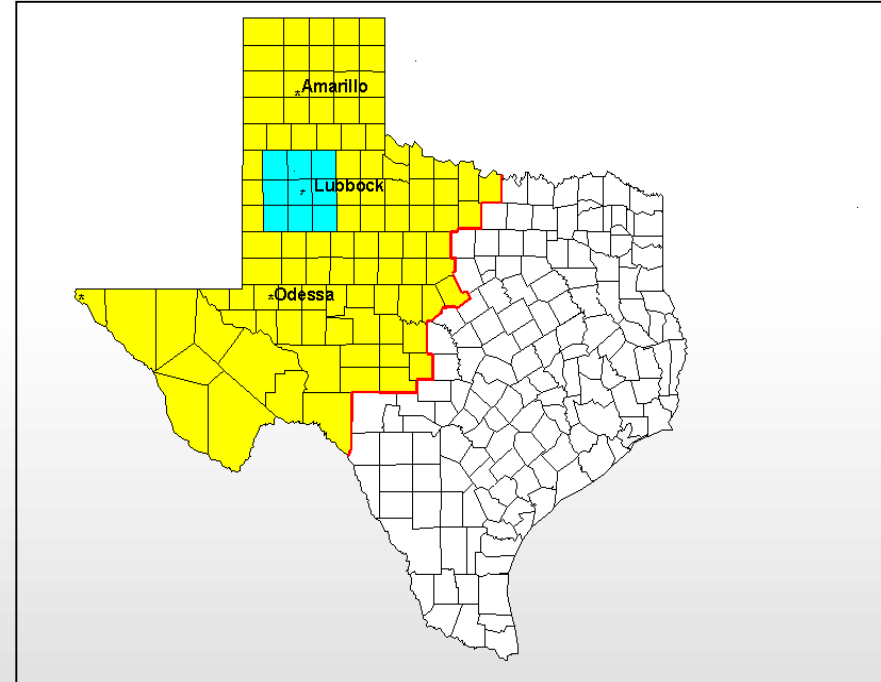


Figure 1.1.A. Area Map of Texas Showing TTUHSC and Combest Center Service Area

Demographics of Service Area

- Population over 23,000 with approximately over 7,000 households, 8,819 housing units, and over 5,600 families (average family size is 3).
- Race/Ethnicity: 56% Hispanic, 34% of African-American and 10% non-Hispanic Whit.
- Over 15% are unemployed, and over 53% only have high school or lower education.
- Over 39% of the residents don't have any types of insurance, over 45% have either Medicaid / Medicare.
- In 2015 community needs assessment study, **over 80%** of 123 residents reported they or their family members had at least one chronic condition, such as **diabetes (32%), Hypertension (52%), asthma (27%) and cardiovascular diseases (17%)**.

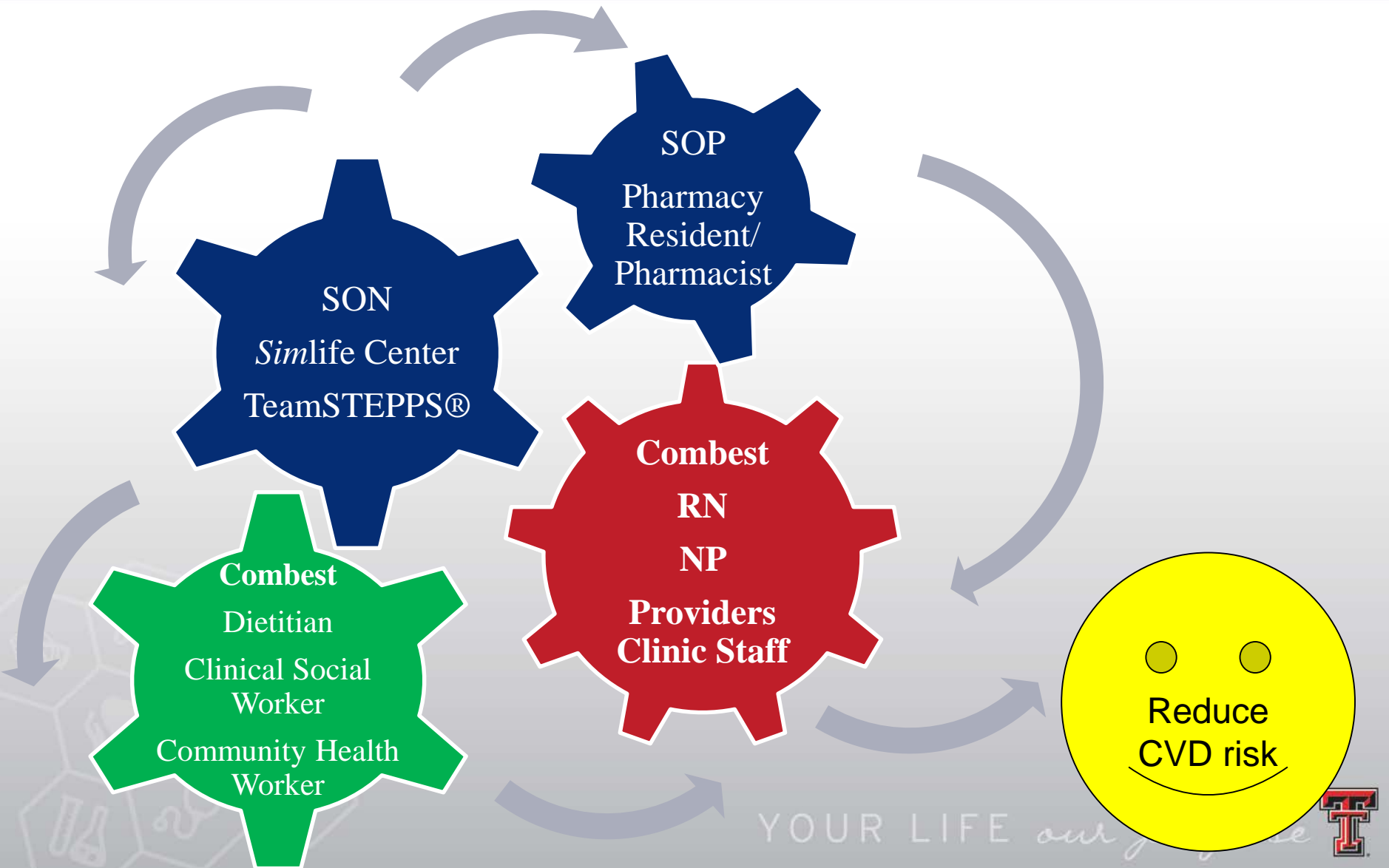
Community Needs



YOUR LIFE *our purpose*



Interprofessional Collaboration Practice (IPCP) Team



TEAMSTEPPS®

- **TeamSTEPPS® is a teamwork system developed through sponsorship of the Agency for Healthcare Research and Quality (AHRQ)**
- **Designed to improve patient safety and to improve communication and teamwork skills among health care professionals.**
- **Scientifically rooted in more than 20 years of research and lessons from the application of teamwork principles, in collaboration with the US Department of Defense.**



Teamwork learning pedagogies



- **Problem-Based Learning (PBL)**

Emphasizes problem solving and critical thinking skills to learn *how* to identify *what* knowledge is needed, *where* to get the needed information, and *how* to work together for determining whether solutions developed are correct

- **Case-Based Learning (CBL)**

A paradigm for use of “real-life” situations to stimulate problem-based learning by using a case or simulation to encourage knowledge acquisition and skills through staff interaction.

- **Team-Based Learning (TBL)**

Uses interaction among team members to promote learning.

- **Simulation-Based learning (SBL)**

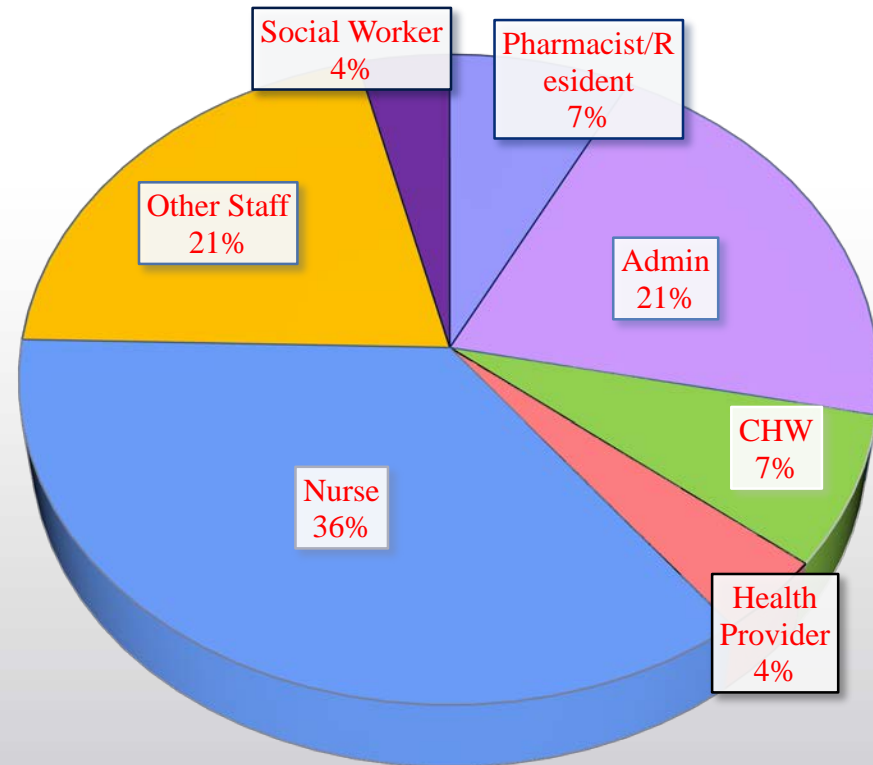
Integrates the principles of active learning in a simulated environment.

TEAMSTEPPTS® Participants



| | N (%) |
|----------------------|------------|
| Age | 53 |
| 18-29 | 2 (3.58%) |
| 30-39 | 17 (32.1%) |
| 40-49 | 18 (34%) |
| 50-59 | 8 (15.1%) |
| 60+ | 8 (15.1%) |
| Gender | |
| Female | 49 (92.5%) |
| Education | |
| High School | 13 (24.5%) |
| Associate or Diploma | 19 (35.8%) |
| Bachelors | 5 (9.4%) |
| Masters | 12 (22.6%) |
| Doctorate | 3 (5.7%) |

TEAMSTEPPTS TRAINING PARTICIPANTS



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TEAMSTEPPS® Outcome Measures

- **TEAMSTEPPS® Standardized Tools**
 - **Organizational Readiness Assessment Checklist(Pre-)**
 - **COURSE EVALUATION (Post-)**
 - **TeamSTEPPS Teamwork Attitudes Questionnaire (T-TAQ) (Pre- and Post-)**
 - **TeamSTEPPS Teamwork Perceptions Questionnaire (T-TPQ) (Pre- and Post-)**
 - **Team Performance Observation Tool**
- **CTS - Clinical Teamwork Scale™ (Global)**
- **Collaborative Practice Assessment Tool (CPAT) © (Pre- and Post-)**

TeamSTEPPS Outcomes

| T-TAQ Scores | Average Pre-Score (Mean±SD, N=50) | Average Post-Score (Mean±SD, N=52) | Average Score Change (Mean±SD, N=48) | p-value |
|----------------------|---|--|--|-----------|
| Team Structure | 4.15±0.93 | 4.65±0.46 | 0.49±0.92 | <0.001*** |
| Leadership | 4.27±0.96 | 4.57±0.54 | 0.29±1.01 | 0.0534 |
| Situation Monitoring | 4.17±0.82 | 4.58±0.52 | 0.41±0.85 | <0.01** |
| Mutual Support | 4.19±0.78 | 4.20±0.72 | 0.01±0.79 | 0.9279 |
| Communication | 4.11±0.82 | 4.48±0.48 | 0.39±0.80 | <0.01** |

The **Teamwork Attitudes Questionnaire (T-TAQ)** scores for team structure, situation monitoring and communication were significantly improved after the training (as shown in the table above). The **Teamwork Perceptions Questionnaire (T-TPQ)** scores were not changed significantly after training.



Patient inclusion and exclusion criteria

- **Inclusion criteria for this investigation are:**

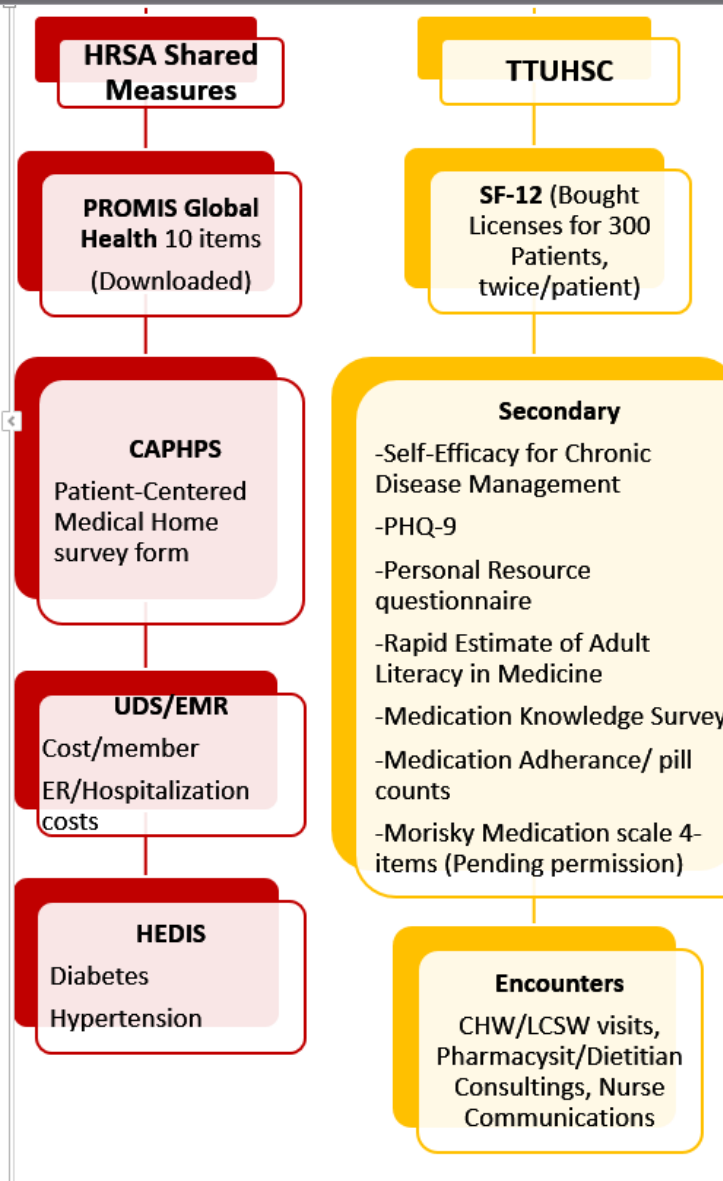
- Hypertension
- Diabetes
- Dyslipidemia
- BMI ≥ 25 kg/m²;
- Prehypertension based on ASH or pre-diabetes based on ADA definition;
- Insulin Resistance
- Tobacco Use
- Metabolic Syndrome
- Overt Coronary Artery Disease
- Established Cardiovascular Disease, defined as documented history of PAD, abnormal ABI, TIA, or stroke, CHF

- **Exclusion criteria are:**

- Persons ≥ 90 or younger than 18
- Severe Psychological Disease
- GFR < 30; Child-Pugh C (Documented);
- Heart failure > Class 3,
- EF < 30;
- Substance abuse disorders (Documented);
- Immunocompromised status (Documented)



Patient Outcome Measures



A subset of the patients who agree to participate in a research program, which investigates outcomes of the IPCP focusing on sensitive inflammatory biomarkers, are currently being tracked pre- and post- the program.

- NMR LipoProfile,
- Lp-PLA2 (lipoprotein associated phospholipase),
- Fz Isoprostane,
- Myeloperoxidase oxidase (MPO)



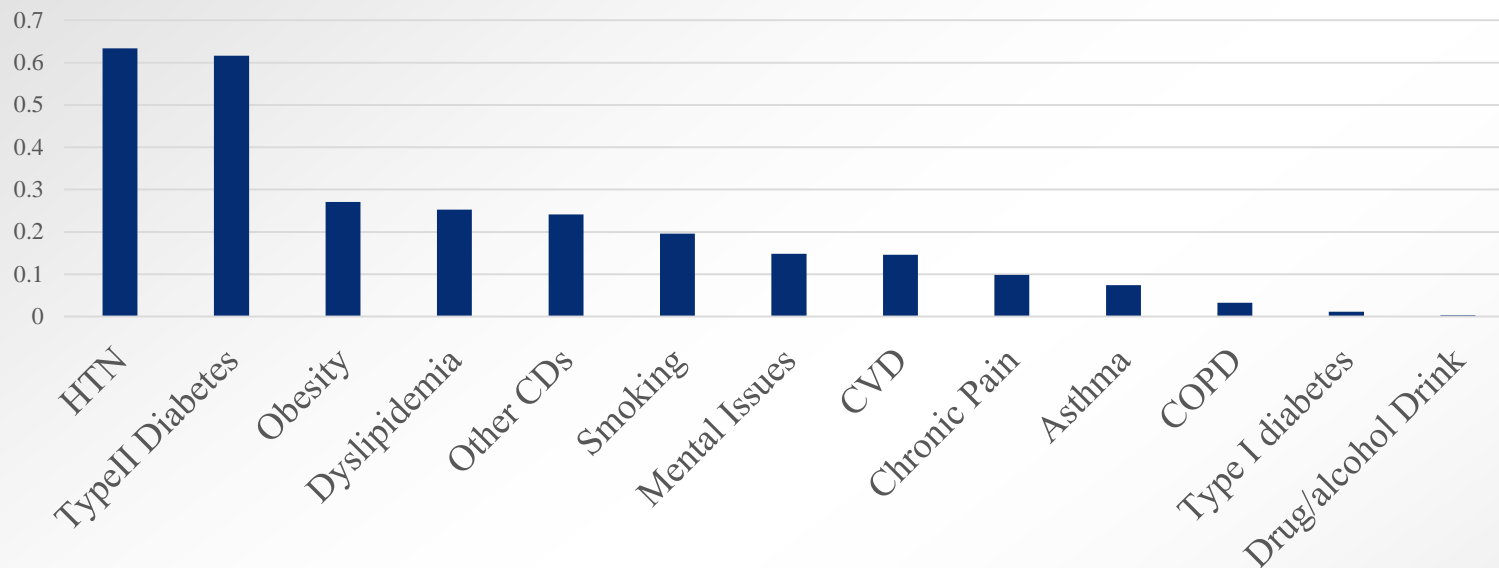
Demographics

| | Female | Male | Grand Total |
|--------------------|--------|-------|-------------|
| Race | | | |
| White | 101 | 75 | 176 |
| Black | 54 | 42 | 96 |
| Other | 27 | 37 | 64 |
| Ethnicity | | | |
| Unknown | 25 | 19 | 44 |
| Hispanic or Latino | 87 | 79 | 167 |
| Non-Hispanic | 70 | 56 | 129 |
| Age | 49±11 | 51±12 | 50±12 |
| Grand Total | 182 | 154 | 336 |

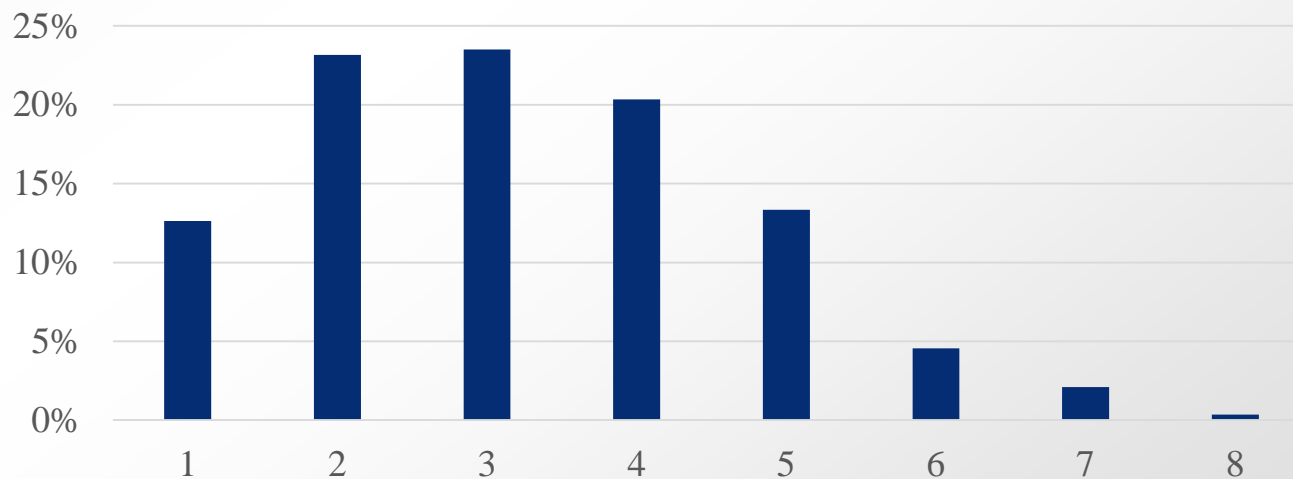


Chronic Conditions

Chronic Conditions

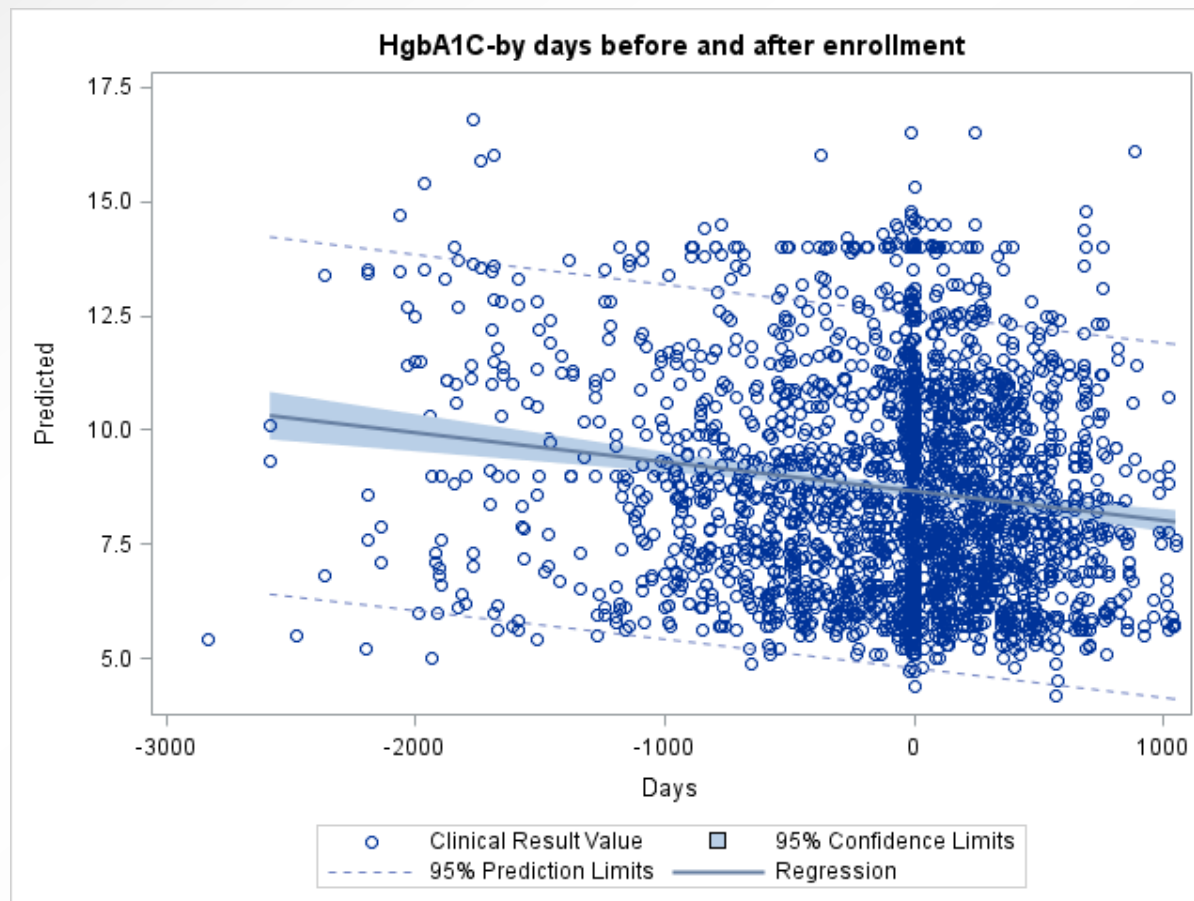


Number of Chronic Conditions %



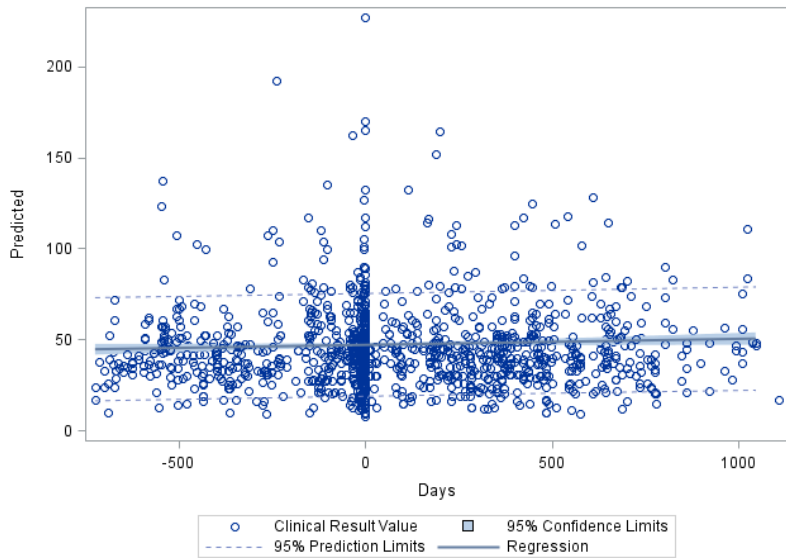
Patient outcomes—Clinical outcomes

HbA1c among Diabetes patients was significantly decreased during the program period. The HbA1c dropped more with more service hours the patients received ($p=0.0124$).

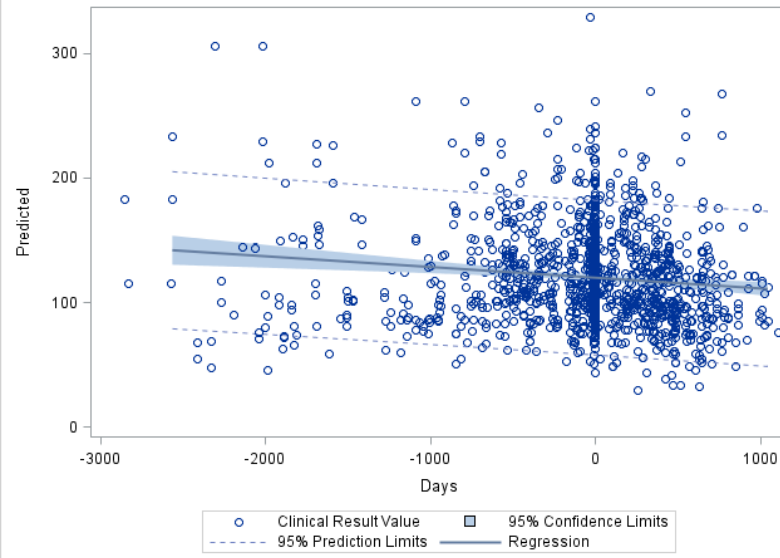


Clinical outcomes—Lipid profiles

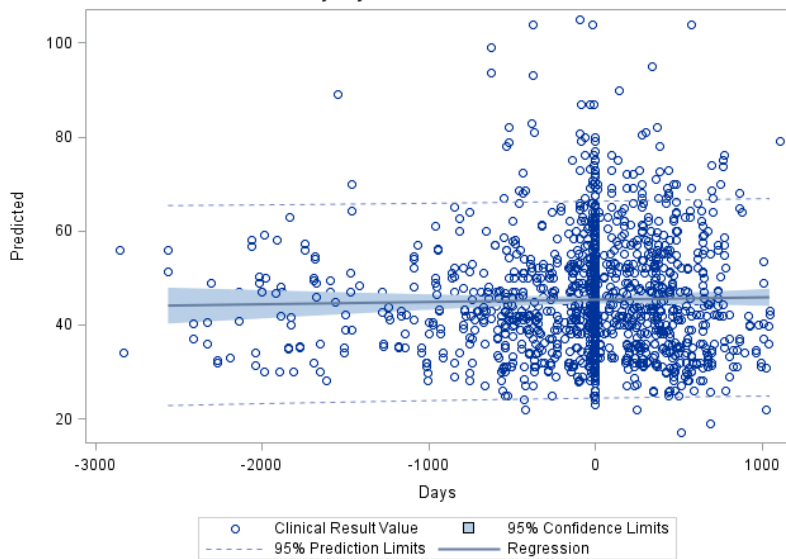
VLDL-by days before and after enrollment



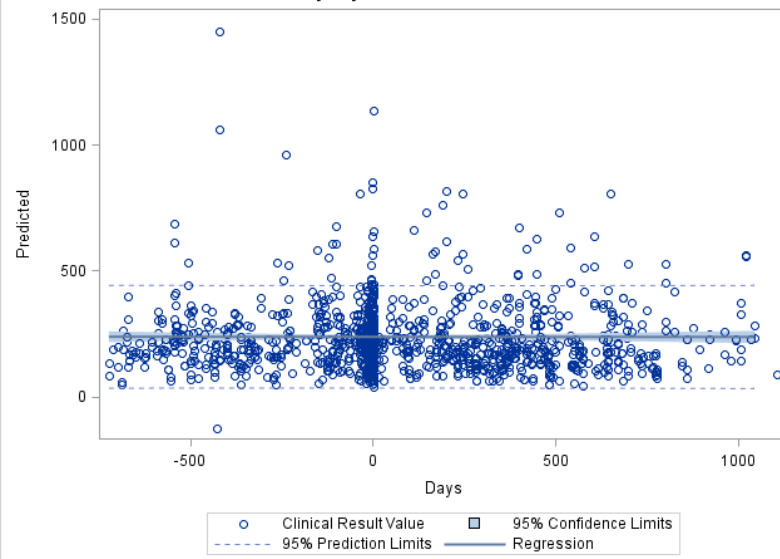
LDL-by days before and after enrollment



HDLc-by days before and after enrollment



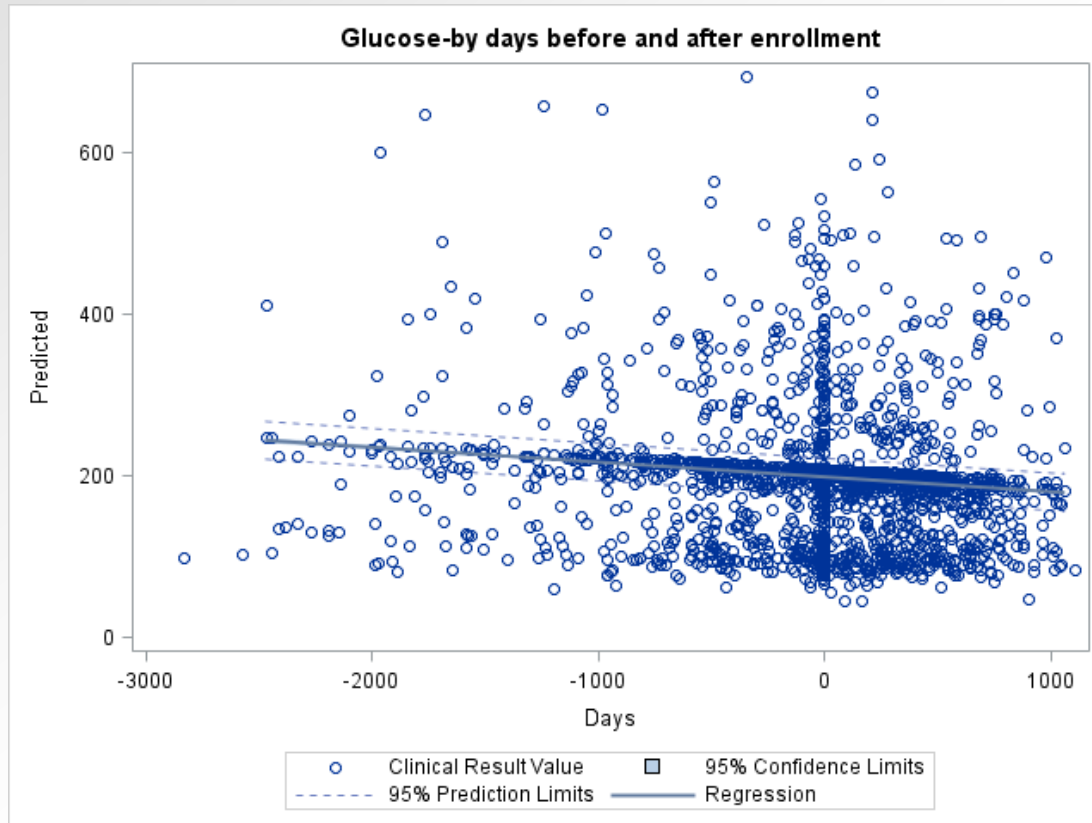
TG-by days before and after enrollment



LDL was significantly decreased over the program period ($p < .01$). It decreases more with more service hours received ($p < .01$). HDL was slightly increased but was not statistically significant.



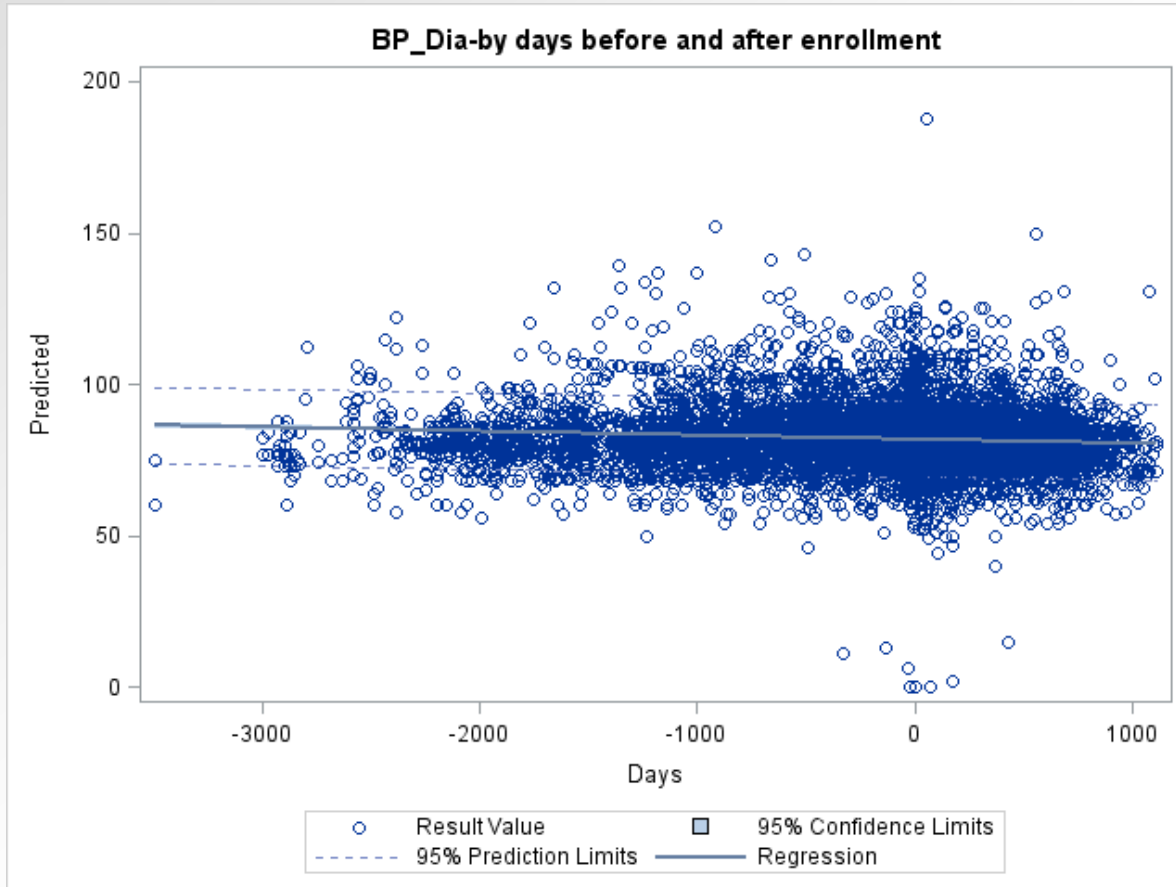
Glucose Level



Glucose level among Diabetes patients was significantly decreased during the program period ($p < .05$). The glucose level dropped more with more service hours the patients received ($p < .01$).



Blood Pressure



Diastolic Blood Pressure was significantly decreased during the program period ($p < .001$) but Systolic Blood Pressure was not significantly changed.



Other clinical findings

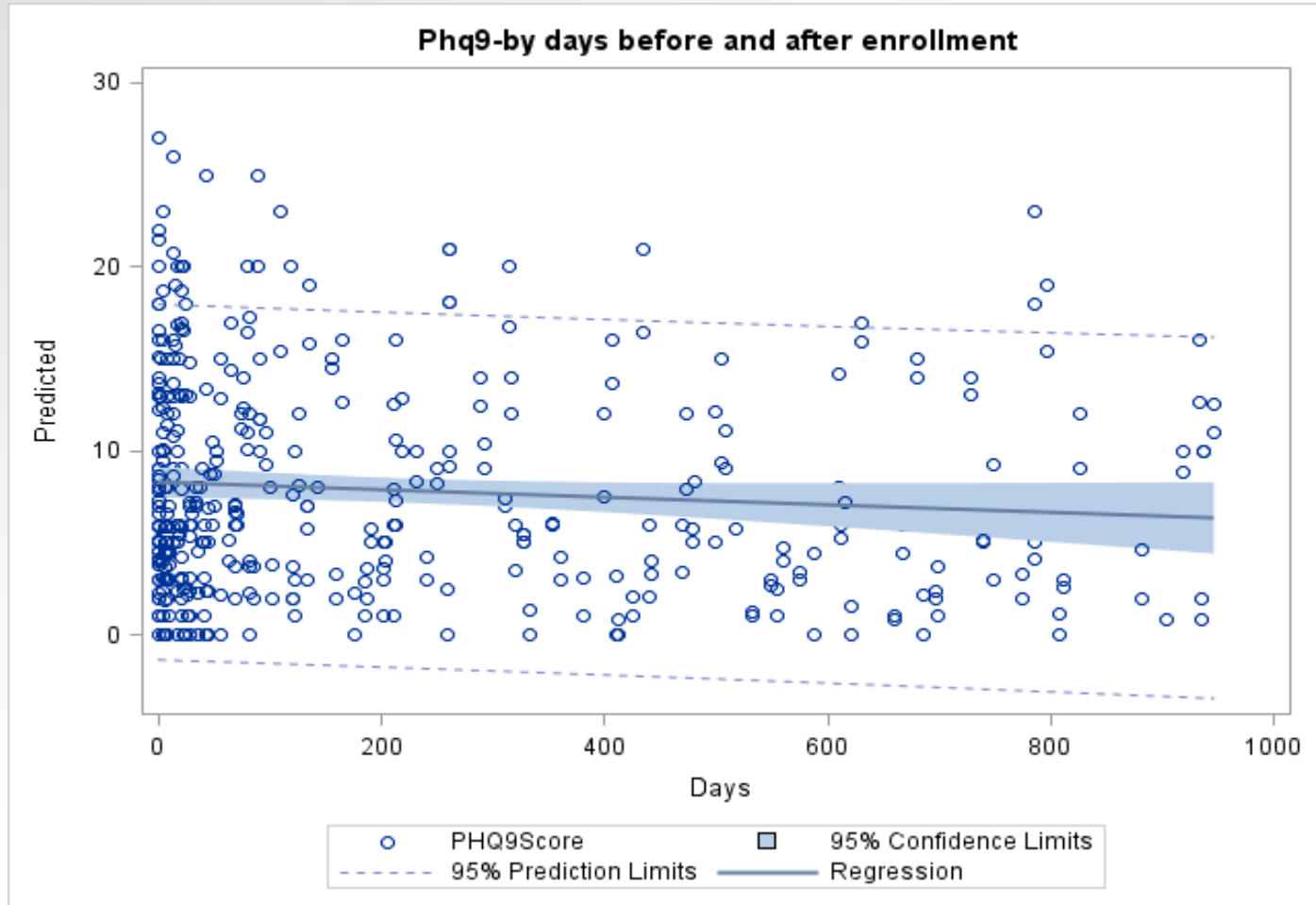
hsCRP was not significantly changed during the program period;

The body weight was not significantly changed during the program period.

The checked-out rate on clinic visits was significantly increased with the increase of IPCP services hours.



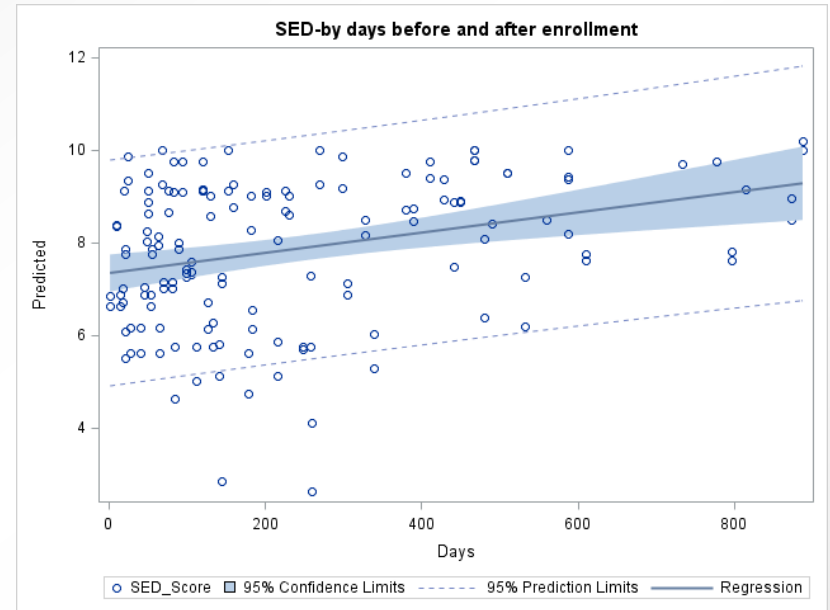
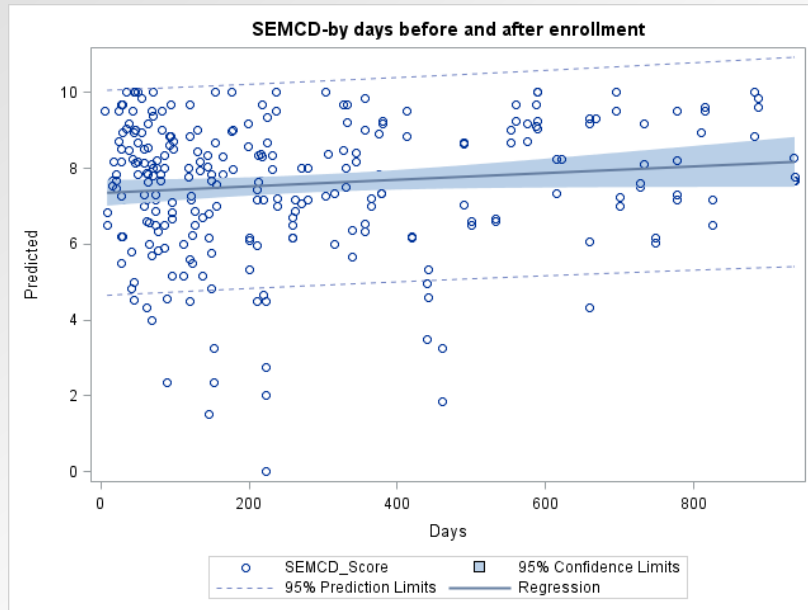
Behavioral outcomes



PhQ-9 Score was improved during the program but was not statistically significant.



Behavioral outcomes



The Self-Efficacy for Managing Chronic Disease and Self-Efficacy for Diabetes were slightly improved through the program but were not statistically significant.



Other Behavioral Outcomes

Due to the limited forms collected for the other behavioral outcomes, there were no significant improvements on SF-12, SPS, SDSAM and MMAS scores.



Discussion

Team-based services provided by IPCP team improve patients' clinical outcomes;

The most common barriers include high no-show rate, behavioral data collection and lack of resources for behavioral changes such as Rec center and grocery stores with affordable fresh vegetables in the community.





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