The Greater Longview Optimal Wellness (GLOW) Evaluation Report

Year 2

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Table of Content

GLOW Evaluation Progress Report

Background

Individuals that are frequent users of emergency medical services (EMS) often have issues that can be more appropriately addressed with non-urgent care. Inappropriate utilization of 911 creates added financial burden in communities with limited health care resources.[1] Community Health Paramedicine is an emerging field that extends the role of paramedics beyond the traditional emergency response.[2] The goal of the current study is to evaluate the impact of a Community Health Paramedicine intervention through the Greater Longview Optimal Wellness (GLOW) protocol. The protocol has been established to reduce 911 calls, hospital emergency department (ED) visits, and admissions to hospitals among frequent users.

The Episcopal Health Foundation established the Texas Accountable Communities for Health Initiative (TACHI) in October 2020 (Episcopal Health Foundation, 2022). The GLOW organization was one of six TACHI organizations within the State of Texas. GLOW is a nonprofit (501C3) organization representing a multi-agency collaborative in the city of Longview and Gregg county in East Texas. GLOW's mission is to:

1. Identify the top utilizers of 911 system (8 calls or more);
2. Enroll these top utilizers as potential clients in GLOW and navigate them to community service organizations that alleviate unmet needs of Non-Medical Drivers of Health (NMDOH); and
3. Perform a community health paramedicine visit to reduce 911 system utilization and readmission rates.

The evaluation of the program includes both process evaluation and client outcomes evaluation. The challenges of evaluating this type of community-based health program include but are not limited to 1) getting unstructured data from multiple partners, 2) protecting identification information, 3) handling involved Personal Health Information (PHI), and 4) difficulties and feasibility of capturing service activities, especially from community partners. When evaluating programs, two key lines of inquiry are recommended:

1. What elements, and in what dose (count of interventions), are central to the success of an Accountable Community of Health (ACH)?
2. Which of the various approaches to ACHs will best match the needs of a given community?[1]

The aims of the evaluation project are:

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[1] Mittmann, H., Heinrich, J., & Levi, J. (2022). Accountable communities for health: what we are learning from recent evaluations. *NAM perspectives*, *2022*.

1. Is there a relationship between client characteristics (demographics) and their Accountable Health Communities Health-Related Social Needs (AHC-HRSN) Screening Tool risk?
2. Is there a relationship between GLOW partner interventions addressing NMDOH risk factors on reducing 911 calls?
3. What is the longitudinal impact of GLOW intervention/services on number of 911 calls, admissions to the hospital and number of Emergency Department (ED) visits adjusted for time in the program?

Methods

A mixed methods approach was used for evaluation of the GLOW project. Quantitative data was identified for inclusion in the evaluation process and was collected through intake documentation, Zoll EMS records, Electronic Health Records (EHR) as well as manual tracking of referrals and touchpoint data. Qualitative data was collected through semi-structured interviews in a focus group setting with GLOW representatives.

Quantitative Data Needed for Evaluation

The evaluation matrix, shown in Figure 1 below, shows the data originally available (Left Column) and the additional data that was needed for GLOW program evaluation (Right Column). The data components originally available included:

- Client's demographics, consent date – Intake
- Client's 911 visits 12-month prior enrollment and post enrollment – Zoll EMS
- Electronic Health Record for the clients at CHRISTUS Good Shepherd Medical Center (CGSMC)– Manually extracted
- NMDOH Screening – Intake
- Partial referral and touchpoint data – Manually tracked

The AHC-HRSN was used in the program to evaluate NMDOH within clients starting in January 2024. The tool is designed by Centers for Medicare and Medicaid Services (CMS) to identify "the structural and contextual factors that shape everyone's lives for better or worse—and can be identified by the health care system and addressed in partnership with community resources." [2] The tool identifies five "core needs" which include living situation, food, transportation, utilities, and safety. The tool also identifies eight supplemental domains, which include financial strain, employment, family and community support, education, physical activity, substance use, mental health, and disabilities.

[2] https://www.cms.gov/priorities/innovation/media/document/ahcm-screeningtool-companion

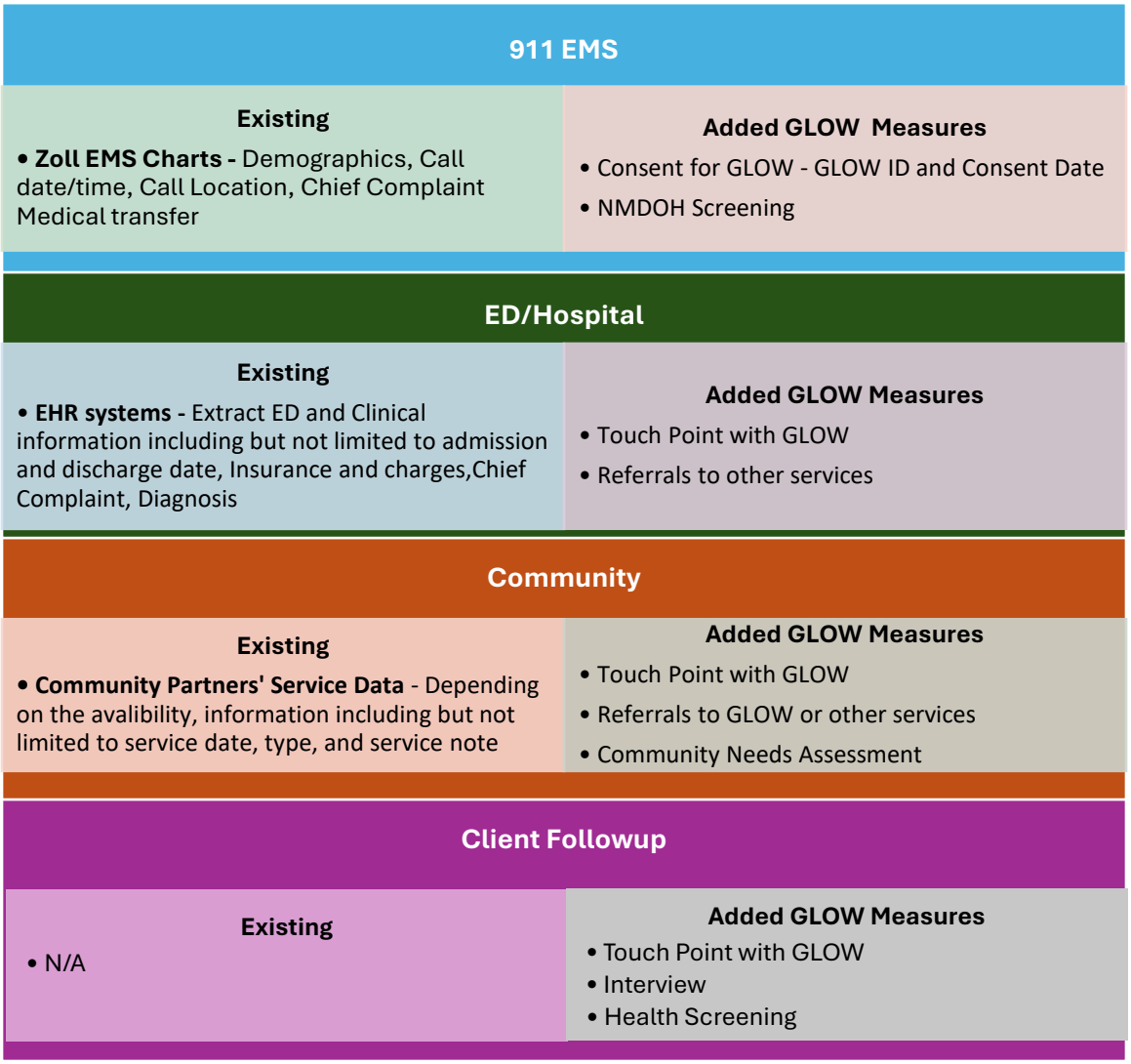


Figure 1: Evaluation Matrix for GLOW

Qualitative Data Needed for Evaluation

Interviews are an efficient method to gather information, especially when a diverse population of clients are managed by independent healthcare organizations such as those that comprise the GLOW program. The qualitative interview used in this program evaluation consisted of open-ended questions. The results were organized by cases that represented each client enrolled in the GLOW program. The interview process was referred to as the GLOW focus group consisting of GLOW representatives (paramedicine professionals and case management staff). This group held regular meetings to provide qualitative case study data on clients. To protect the anonymity of each GLOW client, the GLOW identification number was used by the participating GLOW representative to reference a client contact rather than names of the clients.

Qualitative research utilizes data saturation for analysis and theme identification. Data saturation is the point in the research process when enough data has been collected to recognize patterns and develop themes[3]. Any additional data collection and analysis will typically not produce new insights. During the Focus Group meetings, a series of five open-ended questions were asked by the group moderator. (Table 2) Each participating GLOW representative responded in turn with any new information they possessed regarding each of the GLOW clients.

Table 1 Open-Ended Questions for Focus Group

Item#	Question
1.	Please describe the GLOW client's overall characteristics for: a) managing their health, b) cognitive state, c) social/family support, and d) physical independence.
2.	Please describe how this individual was referred to the GLOW initiative.
3.	Please describe the GLOW client's most important community or support services to which they have been referred by the GLOW initiative.
4.	Please describe the GLOW program's overall impact on the client's health and well-being.
5.	Please describe anything else related to this GLOW client.

Data Analysis

Quantitative data was analyzed using IBM SPSS V.28. Statistical analysis looked at total enrollment, EMS trips, NMDOH, GLOW services, and client health outcomes. Qualitative data was analyzed using theme identification.

Updated Process of Care

The GLOW program was introduced to potential qualified clients by 911 EMS staff. The client's ED visits at one of the two regional hospitals in Longview were followed up with the city paramedic staff completing the GLOW intake. Depending on their assessment findings for the NMDOH screening, the clients were connected to community partners for addressing their needs. The clients were followed up with the GLOW paramedicine team periodically to keep the clients motivated to maintain their health and wellbeing.

[3] Saunders B, Sim J, Kingstone T, Baker S, Waterfield J, Bartlam B, Burroughs H, Jinks C. Saturation in qualitative research: exploring its conceptualization and operationalization. Qual Quant. 2018;52(4):1893-1907. doi: 10.1007/s11135-017-0574-8. Epub 2017 Sep 14. PMID: 29937585; PMCID: PMC5993836.

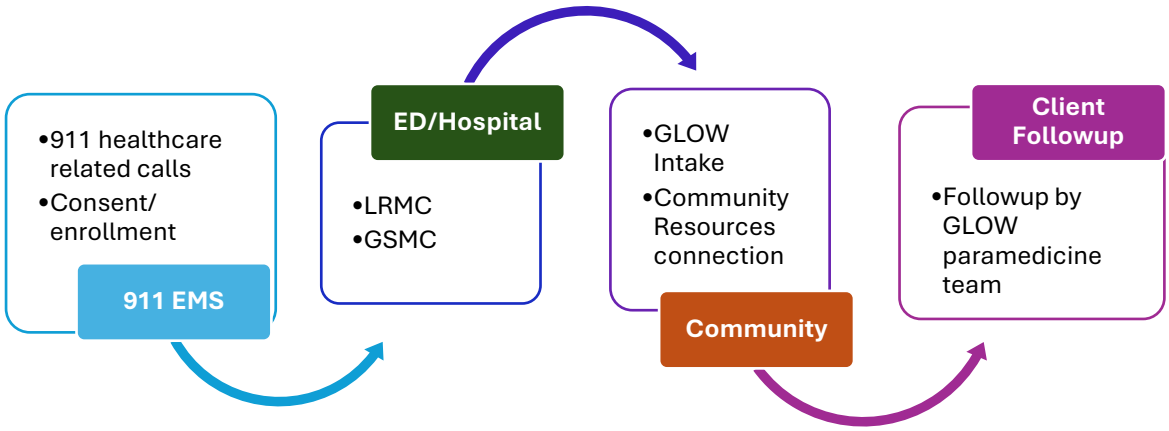


Figure 2 Process of Care for GLOW Clients

Results

Quantitative Results

GLOW Total Enrollment

As of June 2025, a total of **324 clients** with documented EMS trips have been enrolled in the GLOW program. Currently, **56 clients** are considered active.

EMS Trips

To evaluate the impact of one-year GLOW participation on EMS usage, EMS trip data through December 31, 2024, was analyzed for clients enrolled before January 1, 2024. The purpose was to isolate the impact of GLOW on individuals that benefited from GLOW services for 12 full months. Basic demographic information for GLOW clients is presented in Table 1.

Table 2 Basic Demographics

Characteristics	No GLOW-EMS visits N=38	Had GLOW-EMS visits N=80	Total N=118
Gender			
Female	22 (58%)	43 (54%)	65 (55%)
Male	16 (42%)	37 (46%)	53 (45%)
Race			
Black	9 (24%)	34 (43%)	43 (36%)
Other	10 (26%)	10 (12%)	20 (17%)
White	19 (50%)	36 (45%)	55 (47%)
Ethnicity			
Non-Hispanic	28 (74%)	69 (78%)	97 (82%)
Insurance (Est. Initial status) [a]			
Commercial	2 (5%)	8 (10%)	10 (8%)
Medicaid	5 (13%)	13 (16%)	18 (15%)
Medicare	15 (39%)	32 (40%)	47 (40%)
Sel-Pay	7 (18%)	17 (21%)	24 (20%)

Undetermined	9 (24%)	10 (13%)	19 (16%)
Age, M (SD)	57.72 (17.38)	55.91 (19.20)	56.82 (18.61)
Pre EMS visits, M (SD)	6.05 (6.79)*	11.23 (12.66)	9.56 (11.34)

Note: [a], as insurance status may vary over time, the estimated insurance type was classified according to the insurance information recorded at the patient's first EMS trip during the evaluation period. * , *p* value <.05.

For a full-year comparison of EMS visits before and after GLOW enrollment, 118 clients with at least one EMS trip prior to enrollment were included. As shown in Figure 3, five clients (17%) enrolled in 2022 and 33 clients (40%) enrolled in 2023 had no EMS trips during their first year in GLOW. Notably, 26% of clients without post-enrollment EMS visits may have died, although death dates were not documented.

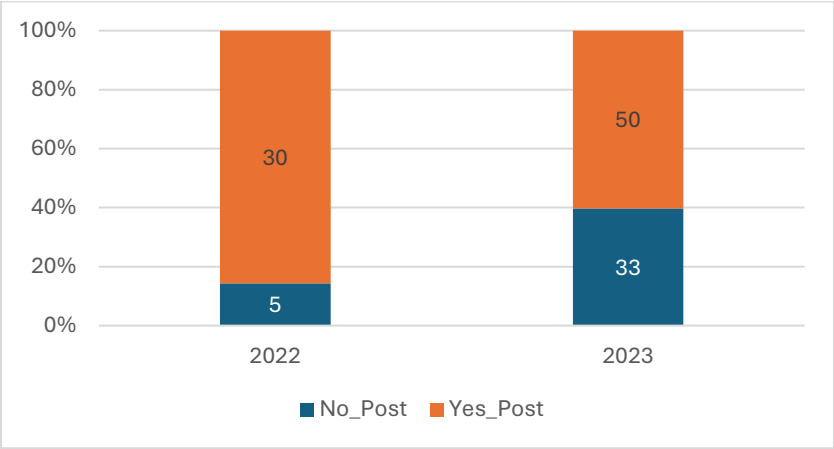


Figure 3 Number of Clients without post-GLOW EMS trip

Figure 4 displays the total EMS trips by year of enrollment for these 118 clients. For those enrolled in 2022, EMS trips decreased from 408 (pre-GLOW) to 332 (81%, first year post-GLOW) and 152 (37%, second year post-GLOW). For 2023 enrollers, trips dropped from 577 to 287, which decrease over 50% in the first-year post-enrollment.

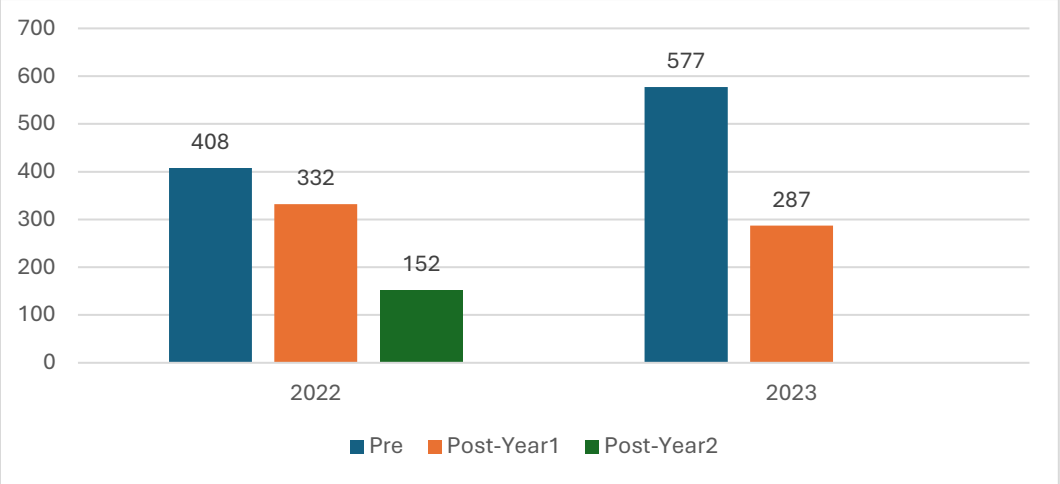


Figure 4 Total number of EMS trip 12 months pre- and post-GLOW

As shown in Figure 5, a Related-Sample Wilcoxon Signed Rank Test revealed a significant reduction in EMS trips during the 12 months post-GLOW enrollment compared to the 12 months prior ($Z = -4.57$, $p < .001$). Seventy-six clients (64%) had fewer EMS trips post-enrollment.

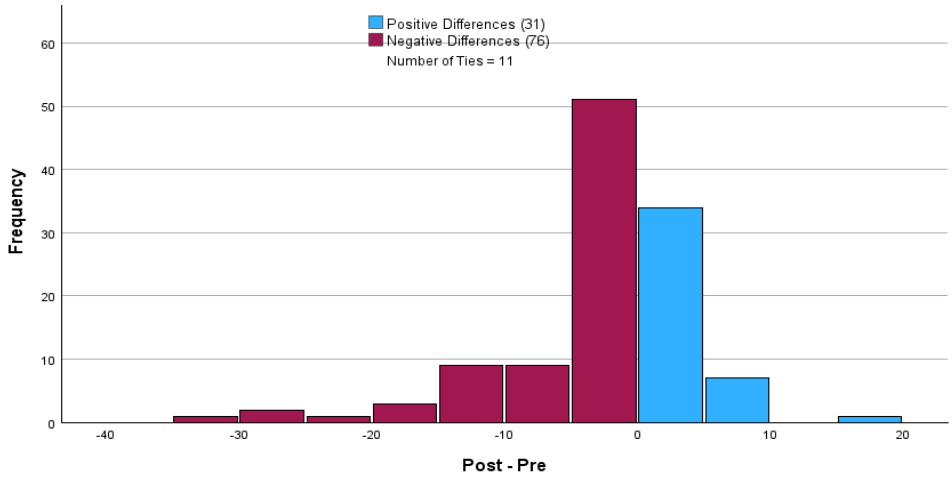


Figure 5 Related-Sample Wilcoxon Signed Rank Test

Based on an independent-sample Mann-Whitney U test, clients without post-GLOW EMS trips had significantly fewer pre-enrollment EMS trips than those who did (Median: 4.0 vs. 6.5, $p = .015$).

As shown in Figure 6, approximately 1/3 of EMS cases were classified as priority 1 (higher priority) and approximately 45% cases were classified as priority 3 (lower priority). There are no significant changes on the priority categories post enrollment (p=.097).

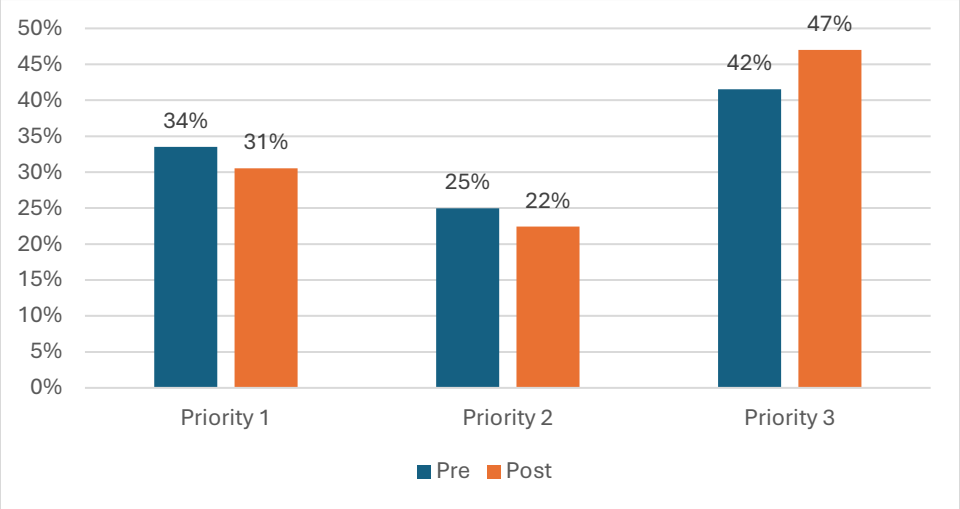


Figure 6 % of Cases by Priority Level

NMDOH Analysis

Among 81 clients who completed the AHC-HRSN Screening Tool, over 75% of clients reported six or more needs (Figure 7). The top five reported needs are Physical Activity (99%), Financial (85%), Food (77%), Family and Community Support (70%), and Mental Health (66%) (Figure 8).

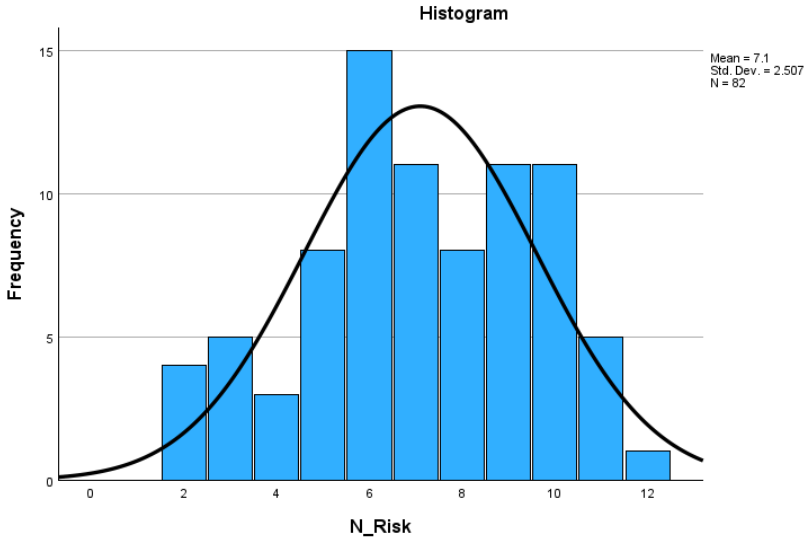


Figure 7 Number of AHC-HRSNs

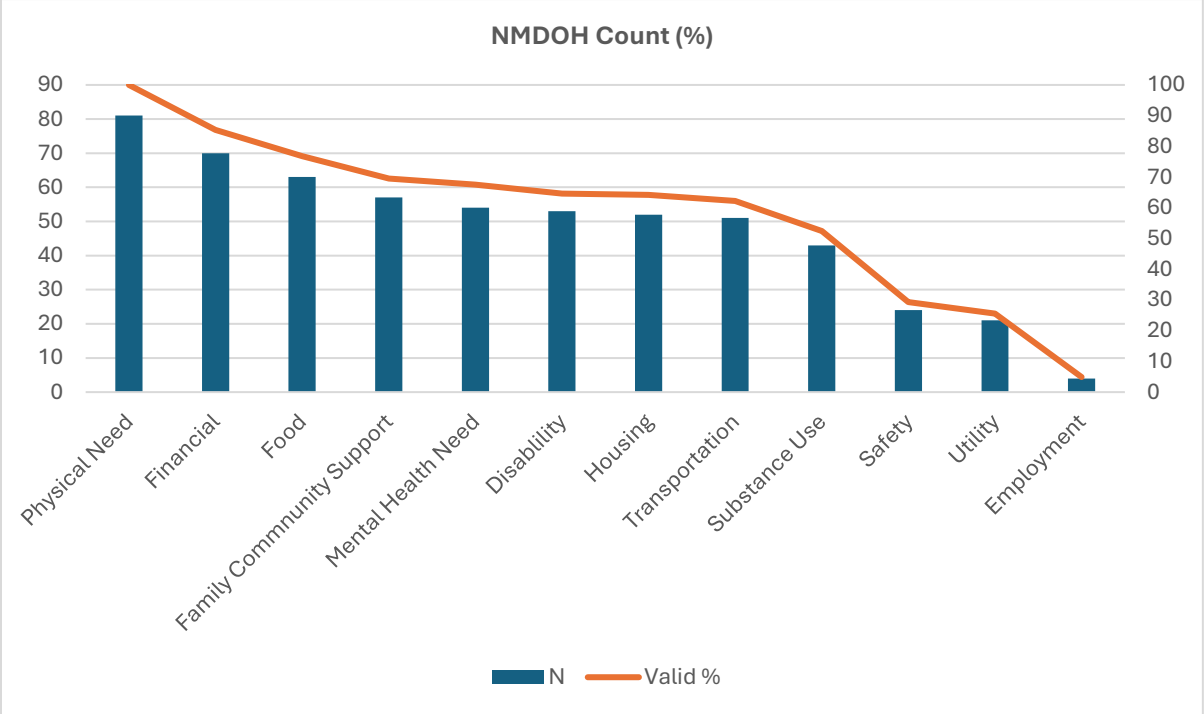


Figure 8 AHC-HRSN in GLOW Clients

Of the clients with Centers for Medicare and Medicaid Services (CMS) NMDOH data, 66 clients included in this reporting period (Male=27, Female=39) completed the screening. Among these clients, 33 (50%) were White, 28 (42.4%) were Black, and five (7.5%) were of unknown race. Chi-square tests indicated that there were no significant associations between gender and NMDOH but compared with Black clients, White clients had significantly higher prevalence of housing need (78.8% vs. 39.3%, p=.024), food need (87.9% vs. 57.1%, p=.023), and transportation need (78.8% vs. 42.9%, p=.016).

To evaluate the effects of demographic characteristics, insurance coverage, and NMDOH social-risk factors on the number of EMS visits during the two years before and after GLOW enrollment, a series of GEE Poisson regression models were conducted. Each NMDOH factor was tested separately because of intercorrelations among the risk domains. A quadratic specification for time was selected based on the observed curvilinear relationship between the number of EMS visits and study year (Figure 9).

Across most models, specifically those including Housing, Food, Transportation, Utility, Financial, and Substance-Use risk—the quadratic time term was significant, indicating that EMS visits tended to increase in the years prior to GLOW enrollment but declined thereafter. Race and insurance type remained strong and consistent predictors of EMS utilization, whereas sex and age were not significantly associated with visit frequency after adjustment. Other/Unknown race showed higher EMS visit rates (RR $\approx$ 2.1–2.6, $p < 0.05$); however, this finding likely reflects

limited data completeness rather than a meaningful population difference, as the group comprised less than 10% of the sample and included both unreported and mixed racial categories. Black clients had modestly higher but nonsignificant visit rates (RR ≈ 1.3–1.4, $p > 0.10$). The NMDOH social-risk domains themselves did not show significant overall associations with EMS visits in the fully adjusted models, likely due to limited variability in social-risk burden, as more than 75% of clients reported six or more needs. However, disability exhibited a significant interaction with time ($p = 0.02$), suggesting that clients with disabilities experienced a greater reduction in EMS visits following GLOW enrollment compared with those without disabilities.

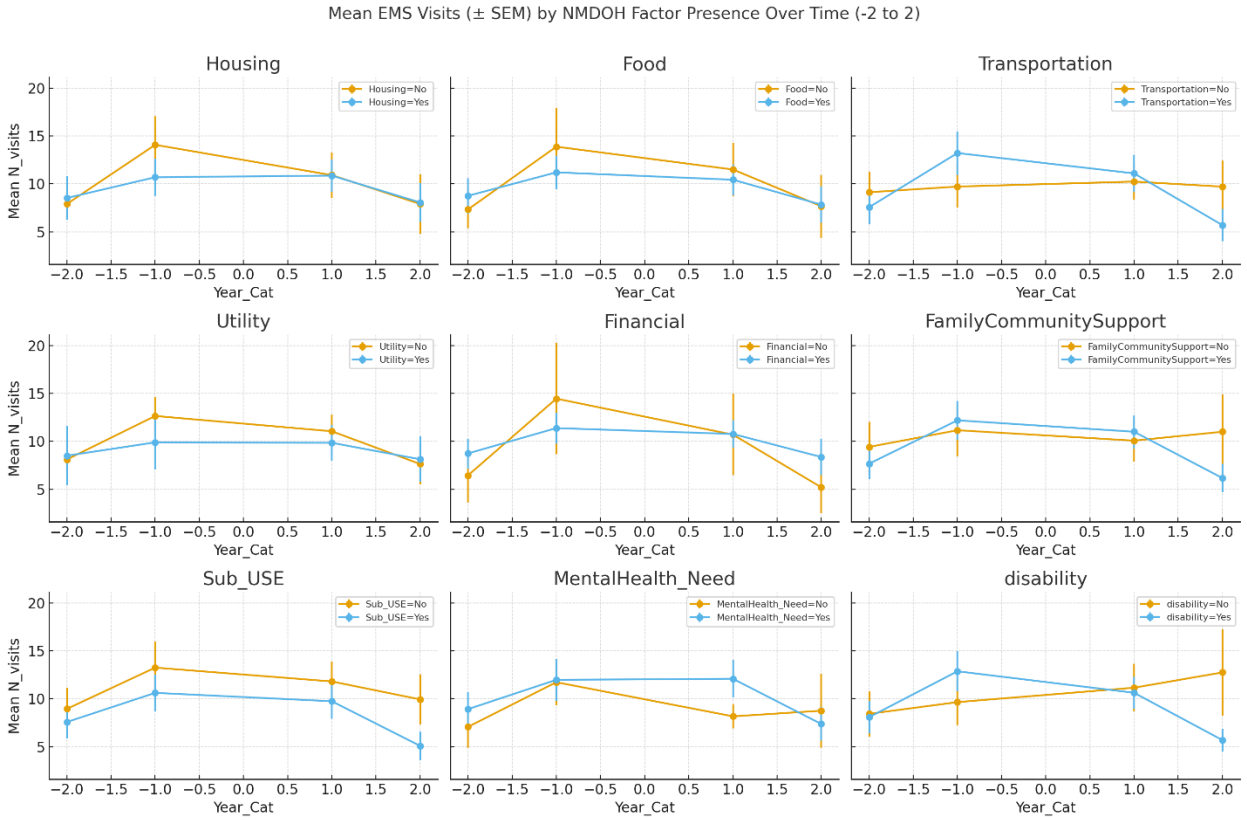


Figure 9 Factors Associated with Raw EMS calls prior and post GLOW enrollment

As shown in Table 3, across all nine NMDOH-factor models, Medicaid coverage was associated with approximately 45–55 % lower EMS utilization relative to Self-pay, Rate Ratio (RR) ≈ 0.5, (95 % CI 0.25–0.90, $p < 0.03$). Medicare and commercial insurance showed no significant difference, while individuals with undetermined coverage trended toward fewer visits.

Table 3 Rate Ratios (RR) for Insurance type from each NMDOH-factor GEE model (reference = Self-pay)

NMDOH Factor	Medicaid	Medicare	Commercial	Undetermined
Housing	0.51 [0.28, 0.91]*	*0.84 (0.46 – 1.52)*	*0.77 (0.39 – 1.42)*	*0.63 (0.35 – 1.12)*
Food	0.48 [0.25, 0.89] *	*0.88 (0.48 – 1.61)*	*0.79 (0.41 – 1.50)*	*0.60 (0.33 – 1.11)*
Transportation	0.50 [0.27, 0.92] *	*0.86 (0.45 – 1.64)*	*0.83 (0.44 – 1.52)*	*0.64 (0.34 – 1.18)*
Utility	0.45 [0.24, 0.84] *	*0.81 (0.43 – 1.54)*	*0.74 (0.38 – 1.43)*	*0.65 (0.34 – 1.19)*
Financial	0.47 [0.26, 0.85] *	*0.87 (0.47 – 1.63)*	*0.83 (0.44 – 1.54)*	*0.66 (0.35 – 1.23)*
Family / Community Support	0.49 [0.27 – 0.89] *	*0.89 (0.47 – 1.68)*	*0.79 (0.40 – 1.53)*	*0.69 (0.37 – 1.28)*
Substance Use	0.52 [0.28 – 0.97] *	*0.91 (0.49 – 1.69)*	*0.82 (0.43 – 1.57)*	*0.63 (0.33 – 1.21)*
Mental Health Need	*0.54 (0.29 – 1.01)*	*0.93 (0.49 – 1.74)*	*0.87 (0.46 – 1.63)*	*0.67 (0.36 – 1.26)*
Disability	0.53 [0.29 – 0.95] *	*0.92 (0.50 – 1.70)*	*0.84 (0.43 – 1.56)*	*0.66 (0.36 – 1.21)*

Note: *, $p < .05$.

GLOW Services

Due to documentation limitations before 2025, only 137 services were recorded. A brief qualitative review of service notes for clients with reduced EMS usage revealed:

- 7 connected to mental health, hospice, or long-term care
- 5 relocated or moved out of service area
- 1 incarcerated
- 2 connected with local resources (housing, food bank)
- 1 scheduled for a medical procedure

Qualitative Results

Data saturation for the focus group interviews was reached with 32 client narratives. One dominant theme that emerged when the GLOW representatives discussed the overall client characteristics was the challenge in managing client health. Many GLOW clients struggle with non-compliance with medication, lack of healthcare access, unmanaged chronic conditions, and frequent use of emergency services instead of routine medical care. GLOW staff noted a client *"was having multiple hypertensive crises and didn't have access to a provider for medications, hadn't been seen by a provider ever, and had never been prescribed medications for this hypertension."* Another representative stated, *"This client is a 46-year-old female. She was one of those that fell through the cracks during the COVID-19 pandemic. She suffered a major stroke*

that left her paralyzed on one of her sides and was not referred home health or hospice. She was not receiving rehabilitation and so we intervened and referred her for both home health and hospice." The consensus of the GLOW staff was that many of the GLOW clients were people who needed assistance with managing their healthcare because of cognitive and mental health issues, a lack of social and family support, a lack of physical independence or mobility issues. In some cases, the GLOW clients needed additional interventions and support due to addiction issues. The staff within GLOW facilitate better communication across partners to improve health management.

Several additional themes and sub-themes were identified as the interviews approached the saturation level. The top five dominant themes included the overarching theme, "Social and Family Support." (Table 3) Each theme identifies where the GLOW initiative intervened to change the narrative and improved client outcomes.

Table 4 Top Five Dominant Themes

Theme	Description	Example Case
Improved Health Management and Communication	Many individuals received significantly improved, regular, medical care, medications, and physical therapy, leading to better health outcomes and reduced ED visits.	50y diabetic homeless female unconscious on side of road, no identification, no family. Placed in nursing home.
Enhanced Quality of Life	The GLOW initiative improved each client's quality of life with a holistic approach to stabilize the client's health conditions and live more comfortably.	67y male multiple medical issues, wheelchair bound, lived alone, high 911 user. Referred to nursing home and quality of life improved.
Support and Independence	The GLOW initiative connected clients with primary care providers and home health services to ensure continuity of care enabling each client to manage their care.	40y male, IDD issues, lives alone, high 911 user. Referred to Meals on Wheels for food insecurity issues, otherwise independent.
Reduction in Emergency Services Utilization	A key impact of the GLOW initiative is the reduction in the use of emergency services by clients better served through other health care providers. We connected appropriate services with the clients who provided regular and preventive care.	74y female bedbound, with severe mobility issues. Would call 911 for help getting out of bed. Referred to home health, physical therapy, and AMBUCS for assisted needs. Reduction in 911 calls.
Social and Family Support	GLOW changed the narrative in communications between the client, the client's family, and available health care resources. We facilitated better communication and involvement of family members in the care process of their loved ones. We kept families engaged, informed, and involved. GLOW strengthened these necessary and requisite support systems for the clients ensuring they received the necessary care and attention they needed to live healthier lives.	32y homeless female with addiction issues and possible sex trafficking victim. No family support. Placed in a substance abuse home. Graduated from the program, earned her GD, gained community support, looked for work, and got a job currently.

The GLOW staff were questioned about how each client was referred to the GLOW initiative and what services each client needed most from GLOW. More sub-themes were identified during this part of the focus group interviews and helped the staff organize their services in a manner that reduced redundancies and maximized benefits to the clients (Figure 10). These themes reflect the complex interplay of health, cognitive function, social support, and the need for comprehensive intervention strategies to improve the lives of GLOW clients while reducing the burden on our emergency services.

Figure 10 Additional Sub-Themes

The overarching theme, Social and Family Support, illustrates GLOW's comprehensive involvement with each client and their existing support network. This process includes identifying the client's current providers and determining the availability of family members or friends to assist with their needs. In cases where a support system is lacking, GLOW staff take proactive steps to establish one. The staff's cohesion and compassion enable clients to receive exceptional care, often exceeding their previous experiences. GLOW's success is founded on transforming conventional practices by bridging the gap between clients and essential services that they may not have been aware. Staff stated “we do things differently”. The "Trust the Uniform” holistic approach ensures nearly immediate care for clients while alleviating the burden on already overburdened emergency services. Staff further indicated, “These people trust us when they see the uniform.”

Social and Family Support within the context of the GLOW initiative is important because of the effect this support may have on reducing the over-utilization of emergency 911 services. For example, one of the GLOW clients is a 68-year-old female who frequently called 911 for chest pain which was often triggered by conflicts she had with her daughter who was her live-in primary caretaker. The daughter provided housing and basic care, but their frequent conflicts and strained relationship impacted the client’s well-being. This case underscores the importance of positive family support. The quality of relationships can significantly impact health outcomes. In this case, the compassionate staff got involved and helped resolve the conflicts by referring this family to appropriate resources that could assist the daughter in caring for her mother.

In contrast, another case demonstrated how the GLOW initiative facilitated stronger family connections for a client with cancer. The client received crucial education and support through the initiative, leading the family to become more involved in their care. GLOW representatives improve social and family support by emphasizing that effective support encompasses not just the presence of family, but their active participation and understanding of the client's needs. Unfortunately, the reality for some GLOW clients is that inadequate family support exists and cannot be improved upon. This is where GLOW interventions become even more important.

A 20-year-old female client with multiple psychiatric diagnoses, whose family was unsupportive and refused to allow her to live with them, was assisted by the GLOW initiative and placed in an environment that ensured she received proper care. This instance emphasizes the importance of social support beyond the immediate family to ensure essential care of an individual is provided. GLOW provides a vital role in filling the gaps when family support is lacking as evidenced by the numerous cases we manage where family support is non-existent. GLOW has become a vital link between individuals in need and available support systems, emphasizing the significance of accessible and well-coordinated community resources.

A GLOW staff member shared the following experience with a client:

"Oh definitely, she probably in my opinion, would have passed away eventually. It was in the hot summertime, and she was infected with nose blisters and ant bites. She would pass out in the sun and suffer different things from her diabetes. And so, when she was placed in the nursing home, obviously she's getting her medications now, her care and her food are in balance, her diabetic situation has improved… The main thing about her situation is we changed the process through the GLOW initiative. We changed the narrative. We did something different and collaborated on her care, which opened doors, … Her family was notified and kept up to date on where she was."

The consensus of the staff indicates that the GLOW initiative significantly helped clients manage their health better. Many clients received regular medical care, medications, and physical therapies, leading to improved health outcomes and a reduction in emergency service utilization. The clients also experienced an improvement in their quality of life because of services provided by the staff and their partner services such as home-based physical therapy, nursing home placements and access to home health services and mental health care. This holistic approach has helped the GLOW clients stabilize their health conditions and live more comfortably.

A key impact identified by the interviews was the reduction in emergency services utilization by the clients. GLOW staff and their partner services provided regular and preventative care coordination which reduced the frequency of 911 calls and emergency room visits by the clients, leading to a more efficient use of limited healthcare resources. The facilitation of better communication and involvement of family members in the care process by

GLOW representatives strengthened support systems for clients by communicating with and involving family members to ensure the clients received the necessary care and attention they deserved.

Evaluation Discussion

Year One

Achievements to Address Data Challenges

- Created the *Data Dictionary* and identified the data components/sources needed
- Data sharing strategies developed with Longview Regional Medical Center (LRMC) (HIE) and CHRISTUS Good Shepherd Medical Center (CGSMC) (IRB approval)
- EHR Data from CGSMC
- Data collection (manually) from Zoll and 911
- Interviews with GLOW staff

Evaluation Challenges Identified Year One

- Manual data collection from Zoll and LRMC is not feasible and sustainable with the growth of the program.
- There is no real-time data tracking and management.
- Data files are maintained by different personnel and not centralized.
- Integration of the data files for research/evaluation is currently labor intensive.

Plans to Address Challenges in Year Two

- Add Dr. Huaxin Song as the data coordinator for the program (reallocated budget for Year One and Two). Responsibility for assisting the City of Longview IT to create a centralized user-friendly database for the program. The data from community partners will be imported into the database instead of entered manually.
- Work with HIETexas under the Texas Health Services Authority (THSA) to automate access to data from LRMC.
- Next steps are to create dashboard reporting using a cloud-based visualization tool. The City of Longview is creating a database to integrate the city data. The University of Texas at Tyler will house and support any other databases to bring all partners together.

Year Two

Achievements

- Updated the process of care model for all three currently running programs
- Created Access database to track services provided
- Established the collaboration with HIETexas to extract LRMC data

Client's Health Outcomes Summary

Hospital ED Records

- **LRMC:** 458 records from 2021 to 2025 for 30 clients resulting in 164 records (21 clients with records from 12 months pre- to 12 months post-GLOW)
- **CGSMC**: 1170 records from 58 clients resulting in 950 records (58 clients from 12 months pre- to 12 months post-GLOW)
- **Both Hospitals:** nine clients who visited both hospitals.

After merging and combining the data from both hospitals, 1114 ED/Hospitalization records (N=70) are included for analysis. Among those records, 693 (N=61) were matched with EMS service data. Overall, the total number of ED/EMS visits decreased from 632 times (12-month pre-GLOW) to 482 times (First year post-GLOW enrollment). Of the 66 clients with ED visits pre-GLOW enrollment, 39 had decreased ED visits post-GLOW enrollment. Based on the Related-Sample Wilcoxon Signed Rank Test, there was a significant decrease on ED visits in the first year of GLOW compared with 1-year pre-GLOW as seen in Figure 11 (Z=-2.26, p=.024).

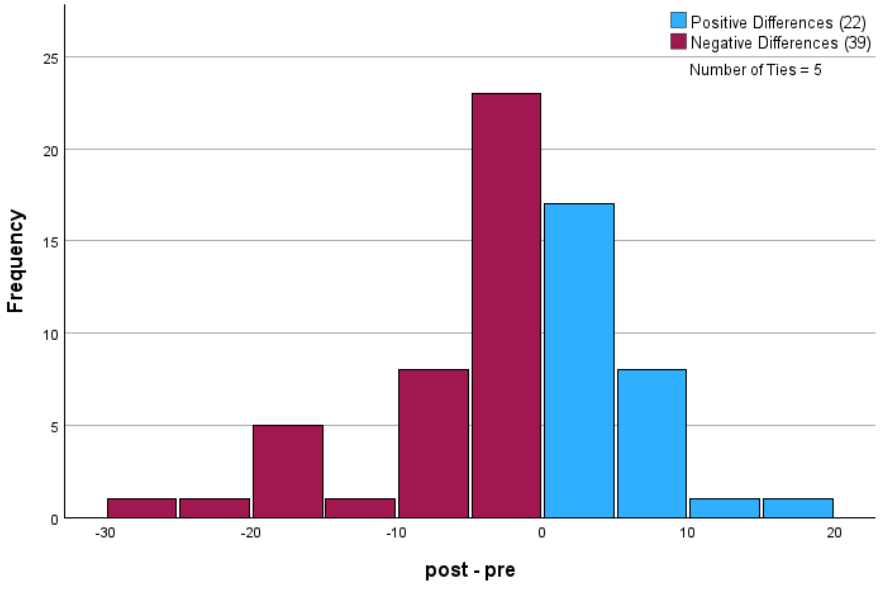


Figure 11 Hospital ED visits pre- and post-GLOW

Matched EMS-ED Visits

Among matched EMS-ED visits, the number of EMS-ED visits dropped from 417 (pre-GLOW) to 276 (post-GLOW). As shown in Figure 12, 34 clients (56%) had fewer EMS-ED visits, a statistically significant decrease (Z = -1.97, p = .046).

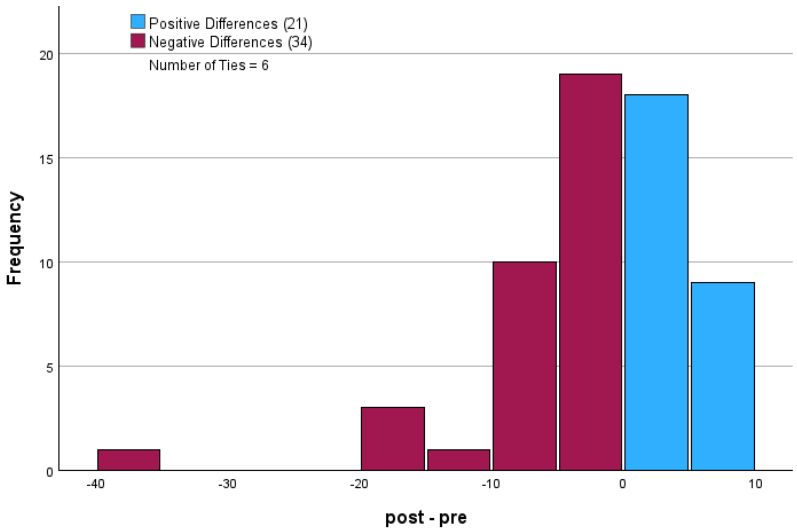


Figure 12 number of EMS-ED visits pre- and post-GLOW

30-Day Re-ED visits

Of the 1114 records, 806 visits (72%) occurred within 30 days of a previous visit. This number decreased from 456 (pre-GLOW) to 350 (post-GLOW), maintaining the same proportion (72%).

Diagnosis Changes

Pre-GLOW diagnoses were dominated by mental health crises (e.g., suicidal ideation, anxiety, bipolar disorder). Post-GLOW diagnoses shifted toward chest pain, infections (e.g., cellulitis), and neurological conditions (e.g., epilepsy). Chronic conditions such as COPD, hypertension with heart failure, and diabetes remained prevalent across both timepoints. ***Suicidal ideation, previously identified as the leading diagnosis during Pre-GLOW, demonstrated a substantial reduction, ranking fourth in prevalence following GLOW implementation.*** (Figure 13)

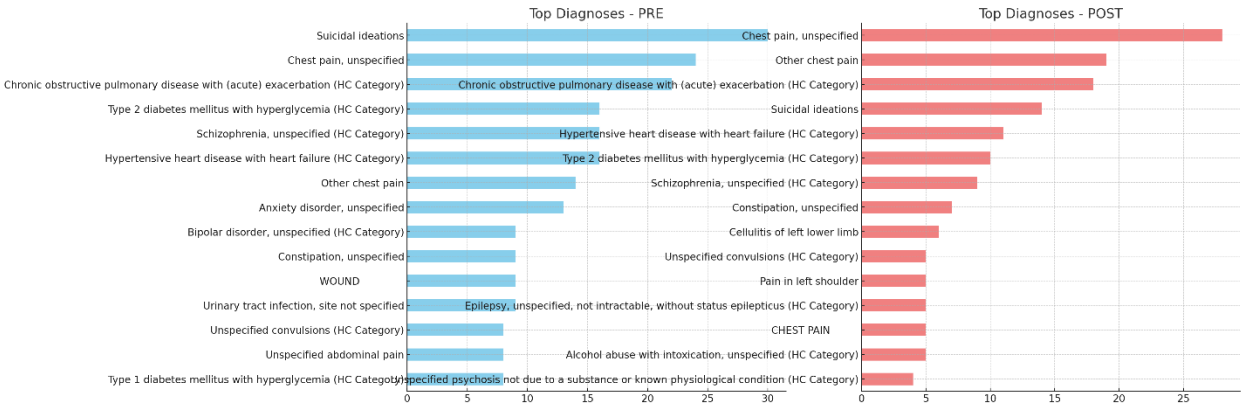


Figure 13 Top Diagnosis Changes pre- and post-GLOW

Length of Stay (LOS) & Total Charges

For 70 clients, total LOS decreased from 1384.2 days (pre-GLOW) to 509.1 days (post-GLOW). Although not statistically significant, this reduction suggests potential cost savings. Post-GLOW, 44 clients (63%) had shorter LOS.

While LRMC charge data is unavailable, CGSMC data shows a potential self-pay savings of $426,670, with total charges decreasing from $7,459,251 to $5,972,743. (Figure 14)

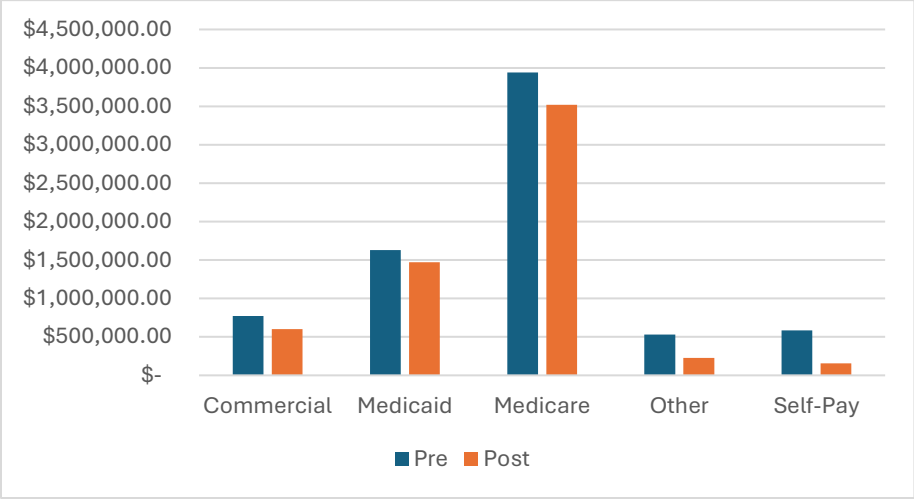


Figure 14 Charges by Insurance Type

Qualitative Summary

The qualitative evaluation of the Greater Longview Optimal Wellness (GLOW) program indicates a strong continuation of year one themes identified, demonstrating the program's sustained influence on clients' health and overall well-being. Central to this impact is the improvement of health management and communication. This initiative continues to build trust-based relationships between community paramedics and clients, promoting the adoption of home health services, and providing families with the requisite knowledge to manage complex medical conditions effectively. These efforts reduce the reliance on emergency services and bridge significant knowledge gaps within the healthcare system for patients, families, and staff. Through this approach, clients report meaningful improvements in quality of life. The program extends beyond acute medical needs to address underlying challenges, as seen in examples such as supporting individuals in completing mission programs for substance use recovery or ensuring access to rehabilitation services for stroke survivors who initially lacked referrals. These outcomes illustrate how the program fosters both independence and long-term stability by linking clients to rehabilitation, detoxification, and long-term care facilities while reinforcing adherence to essential medical and psychiatric treatment. Family and social support remain central themes, as the program works to navigate complex family dynamics, establish stable

living environments, and provide families with education that enables their active participation in care—even in situations involving dependency or alleged abuse.

In its second year, GLOW has expanded its engagement with addressing non-medical drivers of health (NMDOH). The program now more systematically addresses non-medical factors such as food insecurity, housing instability, and the needs of individuals with chronic conditions who frequently use emergency services. A major development supporting this work has been the establishment of a multidisciplinary mobile integrated response team. This team, which includes community paramedics, law enforcement officers, and mental health providers, allowed for coordinated on-scene assessment and direct connection to appropriate mental health or substance use services. This approach reduced unnecessary use of emergency departments for non-urgent crises and ensured faster access to specialized care. Importantly, it reflected a deliberate shift from reactive responses to proactive, collaborative strategies across agencies. By bridging systemic gaps in this way, GLOW continues to secure positive and sustained outcomes for individuals at high risk of falling outside conventional healthcare pathways. Daily monitoring of emergency service utilization further enables the program to evaluate the effectiveness of interventions and to support clients in maintaining progress. Collectively, these efforts underscore GLOW's evolving role as a critical link within the broader community health systems.

Conclusion

The Year 2 evaluation of the GLOW program demonstrated substantial progress in achieving its mission to reduce unnecessary EMS utilization and improve the health and well-being of high-need community members in Longview and Gregg County. Quantitative analyses revealed a statistically significant reduction in EMS trips and ED visits among GLOW clients, with notable decreases in both the frequency of 911 calls and hospital admissions after program enrollment. These outcomes were particularly pronounced among clients facing mental health needs and disabilities, highlighting the program's effectiveness in addressing NMDOH and serious mental health challenges such as suicide.

While communities across Texas struggle with interventions to address rising suicide rates, the GLOW program demonstrates significant impact on suicidal ideation. Suicide rates in Texas have risen by nearly 37% since 2000, with over 4,300 Texans dying by suicide in 2022, making it the 11th leading cause of death in the state. Youth and rural populations are disproportionately affected, and one in four Texas students report seriously considering suicide.[4]

The evaluation also indicated a potential reduction in healthcare costs associated with GLOW participation. For example, among 70 clients, the total length of hospital stay decreased

[4] Hogg Foundation for Mental Health. (2025). Suicide prevention. In Mental health guide. Retrieved January 7, 2026, from https://mhguide.hogg.utexas.edu/policy-environment/suicide-prevention/

from 1,384 days pre-GLOW to 509 days post-GLOW, and total charges at CHRISTUS hospital dropped from $7,459,251 to $5,972,743, with self-pay charges alone decreasing by over $426,000. While not all reductions have reached statistical significance, these trends suggest meaningful cost savings for both clients and the healthcare system.

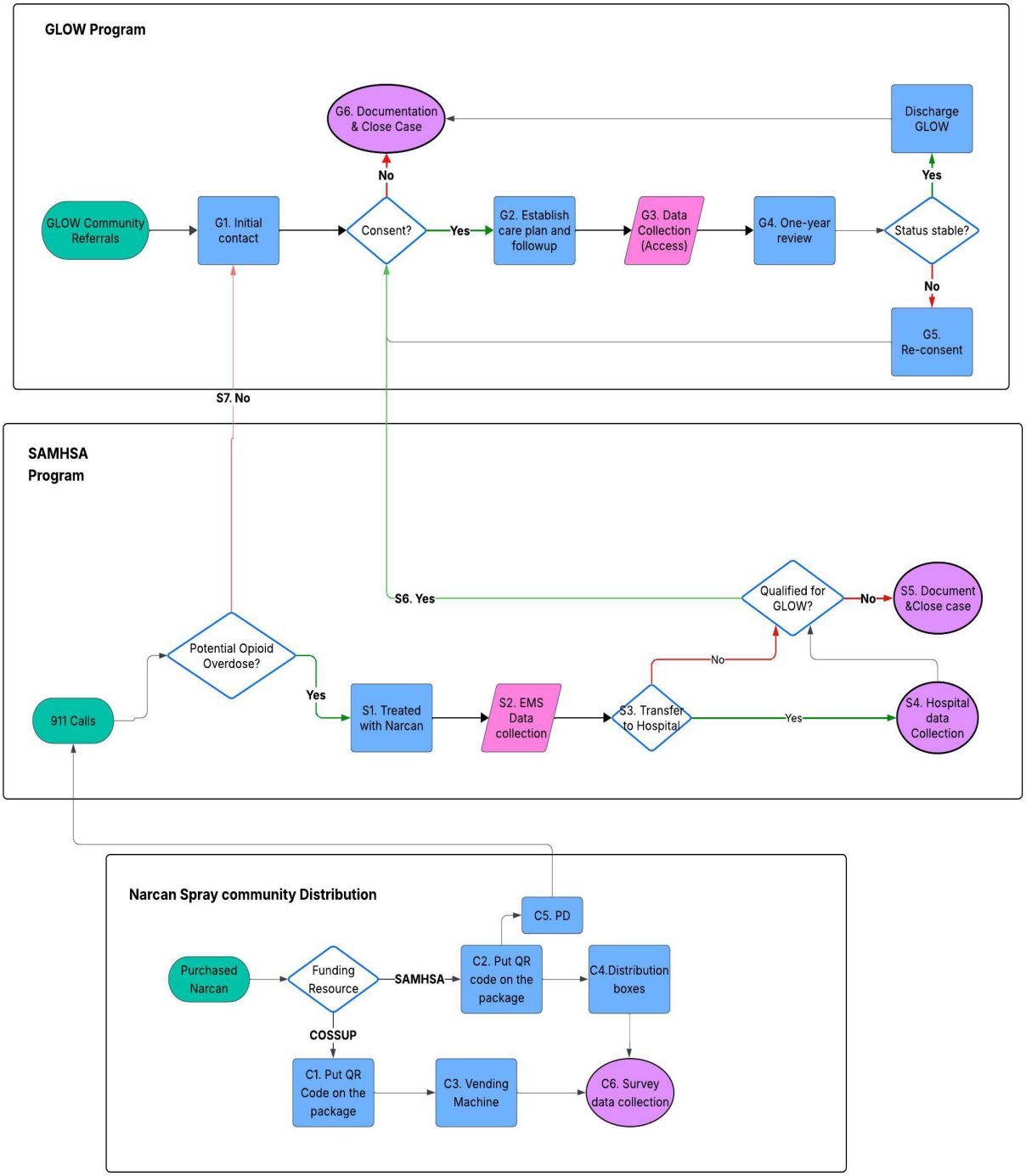
Qualitative findings reinforced these results, illustrating how GLOW's holistic, trust-based, client-centered approach has improved health management, enhanced quality of life, and fostered greater independence for clients. The program's emphasis on building social and family support networks, as well as its ability to coordinate care across multiple agencies, has been pivotal in changing the narrative for frequent EMS users—shifting from crisis-driven care to proactive, preventive interventions. The establishment of a multidisciplinary mobile response team further underscores GLOW's commitment to addressing NMDOH and bridging gaps in the local healthcare system.

The GLOW initiative stands as a model for community-based health interventions, demonstrating that collaborative, data-driven strategies can yield measurable improvements in both individual outcomes and system-level resource utilization. Continued investment in data infrastructure, interagency collaboration, and targeted support for social needs will be essential to sustaining and expanding these gains in the years ahead.

Operational infrastructure and processes for GLOW were also improved over time with one important component being the ability to better manage and access data for evaluation, reporting and point of care services. A substantial development was the work with HIETexas to promote access to these data from one regional hospital. The goal for the longer term is to expand upon use of HIETexas within the region for additional interoperability of data for GLOW.

Finally, the appendix reflects plans for sustainability under two federal grants that build upon GLOW's infrastructure to address substance abuse, mental health and the opioid epidemic. These programs demonstrate how GLOW can be sustainable long-term by meeting additional needs of the community and building services that address some of the most critical health needs.

Appendix A – Sustainability Plan



As shown above, two federally funded opioid overdose treatment programs have been connected to GLOW, which enhances the overall effectiveness of GLOW.

Appendix B - Longview Community Programs

Currently, there are three grant-funded community programs operating through City of Longview.

The flow chart above shows the overall process of care within and between the three programs. The detailed steps are listed below:

Client Enrollment for GLOW Program

G1. Referral Sources

- Clients may be referred to GLOW through:
    - Community partners
    - 911–EMS calls

G2. Consent Process

- Community Partner Referrals (Non-Opioid Cases):
  GLOW staff will contact referred clients to obtain consent for program enrollment.
- 911–EMS Referrals (Potential Opioid Overdose Cases):
    - S1. Emergency Response: Clients suspected of opioid overdose are treated with Narcan (funded by SAMHSA).
    - S2. EMS Data Collection: EMS data is recorded for all cases.
    - S3. Hospital Transfer Decision:
        - If the client declines hospital transfer:
            - Assess eligibility for GLOW.
            - If eligible → S6. Refer to GLOW.
            - If not eligible → S5. Document in Access Database and close case.
        - If the client is transferred to a hospital:
            - S4. Hospital Data Collection: Hospital data is collected quarterly.

GLOW Services After Consent

- G2. Service Initiation:
  Upon signing consent, clients begin receiving GLOW services. All services are documented in the Access Community Database.
- G4. One-Year Review:
  - If client status is stable → Discharge and update status in Access Database.
  - If continued support is needed → G5. Re-consent the client for ongoing services.

Opioid Overdose Community Programs

C1. Narcan Distribution via COSSUP-Funded Vending Machines

- C3. Vending Machine Deployment:
  Narcan spray kits are distributed via vending machines.
- C6. Data Collection:
  De-identified user information is collected via:
  - QR code on the package
  - iPad interface attached to the vending machine

C2. Narcan Distribution via SAMHSA-Funded Kits

- C5. Police Department (PD) Use:
  Kits with distinct QR codes are distributed to PD for use before EMS arrival.
- Public Access Points:
  SAMHSA kits are also placed in public areas (e.g., libraries, community centers).
- C8. Voluntary Data Collection:
  Users may voluntarily submit information via QR code-linked surveys.