Converting El Buen Samaritano to Digital Client Tracking

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Science

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ABSTRACT

As food pantries combat food insecurity, adequate data collection is important to sustain city funding. Our team strove to optimize client reporting for El Buen Samaritano (EBS) of Worcester, MA, where physical paper forms created a bottleneck for food distribution efficiency and compiling data needed for funders. We volunteered, interviewed and conducted a case study to find ways to improve the client tracking process. Using the data collected, we condensed the client check-in process to a simple scan of a barcode, creating a quick, streamlined process. In addition, we automated the compilation of funding reports, enabling the utilization of the new digital client data. For the future, we recommend that EBS expand the use of barcodes to inventory, allowing them to track donations.

EXECUTIVE SUMMARY

Part 1: Project Background

Food insecurity is an issue that affects millions of families in the United States. As the issue grew, a new list of terms from "High food security" to "very low food security" was created in order to better classify and study the differences and habits of food insecure families (USDA ERS, 2023). This new terminology is helpful in diagnosing communities and figuring out where help needs to be sent.

One of the communities often affected by food insecurity are economically disadvantaged families. In Worcester, Massachusetts, economic hardship is a root cause of food insecurity. Over 20% of Worcester residents spend more than 50% of their income on housing, a greater percentage than both the average for the entire state of Massachusetts and the United States national average (Marfo et al, 2023). These expenses create a smaller budget for families to dedicate to buying healthy food.

Health concerns related to food insecurity usually stem from food access problems. Many counties in Worcester are food swamps. There are 0-3 major grocery stores but many convenience stores within a 1-mile radius, creating access to cheap but unhealthy food (WRRB, 2023). In Massachusetts, convenience stores can sell tobacco products, which are known to curb hunger and cause addiction (Marfo et al, 2023). In Worcester, tobacco addictions and obesity alongside food anxiety are some of the most common health problems correlated with food insecurity (Marfo et al, 2023).

Food pantries are directly in food insecure communities to provide food access points to families. (Walte, 2019). It's shown that food pantry usage has increased since the COVID-19 pandemic, with almost half of all users being from very low food secure families (USDA ERS, 2021). Food pantries often offer

additional resources to alleviate upstream factors of food insecurity such as diabetes intervention food parcels (Oldroyd, 2022), accessible healthcare, and accessible tobacco cessation (Marfo, 2023). Public awareness, community support, and food variety would help food pantries be even more effective.

El Buen Samaritano (EBS) is a food pantry in Worcester, Massachusetts that has been assisting families for over three decades. Maricelis "Mari" Gonzalez, is currently the executive director of the organization. EBS's main goal is to combat food insecurity and create a community where "collaboration is the cornerstone in the fight against poverty and hunger" (El Buen Samaritano, 2024). Beyond weekly food distribution, EBS has after school snacks for youths, Thanksgiving dinners, and other emergency food services. EBS also has a clothing and winter coat drive and a visiting vaccine clinic, as well as many resources for SNAP/WIC applications, foster care services, and Spanish translation services. Many organizations are partnered with EBS including the National Honor Society, Toys for Tots, and SNAP, as well as educational institutions like Holy Cross, Clark, and WPI (United Way of Central Massachusetts, 2024).

With the help of a WPI project team in 2023, EBS implemented PantrySoft, a software designed to help food pantries track items and generate reports. According to the team's conclusion and recommendations, EBS had not begun client tracking but recommended looking into barcodes for client and inventory tracking (Reno et al, 2023). Our project goal was to analyze the usage of PantrySoft at EBS and look into how to increase its utilization in the staff's workflow, particularly in client tracking. Our approach to this goal is discussed in the following section.

Part 2: Research Methodology

Our overarching goal that we honed in on was to improve EBS's client tracking and data collection system, in addition to devising a more efficient method of physically distributing food. Our plan to achieve the goal meant moving EBS from the use of paper forms for data collection to a digital format. To uncover the best way to do this, we asked ourselves the following research questions:

1. How is PantrySoft currently utilized by EBS?
2. How can we better integrate PantrySoft into EBS's workflow to improve their efficiency?
3. How can we increase client check-in speed and food distribution speed?
4. How can we best present data and records to funders?

In order to answer these questions, we held interviews with people who gave us helpful insight into how to better use PantrySoft. We also conducted a case study on Ginny's Helping Hand (GHH) for the same purpose. We also reached out to the city to confirm the required parameters for digital versions of the paper forms. To get direct knowledge into how El Buen Samaritano operates, we volunteered on food distribution days. Our interviews led us to research and then implement barcodes to be used for client tracking. And once we began implementing changes, we trained EBS staff and volunteers on the new procedures and made a user manual for the staff and volunteers with information on how to navigate PantrySoft and utilize the new changes. We also held weekly meetings with our advisor and Mari to keep everyone updated on our progress and plans.

Part 3: Improving Efficiency During On-site Distribution

During our volunteering at EBS, we observed the food distribution process. Clients took a numbered card and lined up in order. Check-in involved two forms for new and returning clients. The new client form, utilized by ARPA, took 1-3 minutes to fill out; and the returning client form, needed to collect data for WCFB, took 30 seconds to 2 minutes to fill out.

Once clients are checked in, they can select items from a pre-made basket. The basketed food items, bread and produce, were placed on tables along the entrance walkway located in Figure 6, section 4. The baskets would be prepared by volunteers near section 5, and brought to section 4. The number of volunteers overseeing the tables was a crucial aspect to keep in mind. To encourage efficiency, three baskets were assigned per volunteer to watch over in order to ensure clients took from only one basket.

The Figure 6 setup was flawed: direct sunlight was brutal for the clients, long wait times due to client forms, and the line blocked the stairway, hindering

volunteers' movement and access to food baskets. A produce table in section 5 caused a large crowd that blocked the door for volunteers. To combat this problem, we along with Mari relocated the check-in line to Figure 7, section 1, to give clients shade and to unblock the stairs. The produce and bread were moved to Figure 7, section 3, decongesting the door used by volunteers. These changes went into effect our second day volunteering, the following week.

Part 4: Implementing Additional PantrySoft Features

After we observed the PantrySoft website, we became most interested in client barcodes because of how we thought it could improve the check-in process at EBS. The barcodes allow clients to be registered once and then checked in with a single scan, reducing the amount of paper used. We met with PantrySoft's customer success manager, Betty Bloomer, over Zoom in order to understand barcode support in PantrySoft. She demonstrated a barcode registration process and we reiterated this information to Mari in our next meeting. Mari was thrilled with the idea and we ordered 1000 custom barcode tags from K12 Print. We also ordered barcode scanners and keyrings from Amazon to further integrate the process for both volunteers and clients during the new check-in process.

While performing a trial run with Mari and volunteers, we learned that the new registration process was lengthier to complete during check-in compared to the paper form. Despite the longer amount of time, we proceeded to register 94 clients during the next food distribution. We continued implementation the following week, registering 71 more clients. That same day, 27 clients returned with barcode tags, who expressed their gratitude for the quicker check-in process.

In order to help the volunteers, we designed documentation on how to do specific tasks with PantrySoft. This manual is tailored for the volunteers that check-in clients and manage client data. This manual covers procedures like client registration and visit logging, as shown in Appendix D.

In addition to the barcode system, we learned a better way to compile data for the WCFB from GHH. We copied GHH's custom report to EBS's account, allowing volunteers that manage data to generate the required data instead of relying on individual paper forms for the same information.

Part 5: PantrySoft Recommendations

We have several suggestions on how to further expand the usage of PantrySoft. Continued future progress will bring the food pantry closer to being a completely paperless and digitally organized system.

Before barcode registration began, all client accounts were set to 'Pending Update' in PantrySoft. To keep the active client list organized and up-to-date, Betty recommended marking old accounts with a different account status. We recommend purging the remaining 'Pending Update' accounts in a year, allowing ample time for active clients' information to be updated before registration forms need to be renewed. A purge will also result in easily pulling demographical data from active clients for grants.

Another recommendation we have is to communicate with the PantrySoft support team to create reports for more funders. Several funders require similar demographics information, and if those involved with data management design custom reports, the funding and grant application processes would be streamlined.

Client data can also be used by Mari and her volunteers to organize events tailored to the needs of the community. If families of a certain demographic are coming in more frequently, volunteers can be invited to EBS to help those clients.

PantrySoft is actively working on adding graph and chart generations for their customers. We requested that EBS be put on the email list when these data visualization features are available so they can show their impact to a multitude of audiences. Once these tools become fully available, we recommend a future research team figure out how to fully utilize these features to help EBS further show its impact on the community.

Finally, we believe our work with PantrySoft paves the way for expanding data collection from solely client demographics to include donation item

values. In order to receive funding from the USDA, EBS needs to provide information about the financial value of received donations. Currently, there is no system in place to record the value of these donations that come in, so we suggest that a future research team implement a way to digitally record the value of in-kind donations.

Part 6: Recommendations for Physical Changes

As EBS continues serving the Worcester community, Mari has dreams for the organization as each of their significant goals are met. Currently, the building El Buen Samaritano occupies belongs to the neighboring church, and as time has passed, the church expressed interest in reclaiming occupancy of that building. Additionally, weekly outdoor food distribution in the parking lot can be an inconvenience to the clients, volunteers, and neighbors for various reasons. Mari would like to own and utilize a larger

building. With enough indoor space, EBS can protect its clients from unpredictable weather conditions and reduce any physical strain placed on volunteers.

Additionally, Mari would like to hire full time staff and assistants to be able to run EBS as smoothly as possible. Currently, she has a handful of loyal volunteers, however the majority of the remaining workings of EBS are handled by Mari herself. With a larger space and more staff, we recommend Mari increase the frequency of food distribution. With the new check in process, it is possible to open for distribution three times a week or more.

Part 7: Conclusion

With the help of food pantries, food insecure families across the country can have access to the food they need. Throughout our time working with El Buen Samaritano, we were able to observe their positive effect on the Worcester community. By implementing a barcode system with PantrySoft, we drastically cut the amount of paper EBS uses, streamlined their client check in process, and kickstarted their data collection. We hope we have successfully laid the

![WPI - Worcester Polytechnic Institute logo]

![EBS - El Buen Samaritano Food Program logo]

groundwork for future research to further expand El Buen Samaritano's reach and improve service to their community.

ACKNOWLEDGEMENTS

AUTHORSHIP

After many edits and rewrites, it's difficult to track who contributed the most to the writing of any one section. We all had a hand in editing each other's work. When writing a new section, we followed a process to ensure our information was correct and flowed well with the surrounding text. First, we followed an outline and assigned ourselves a subsection to write on our own with no editing from others. Once we all finished writing our initial drafts, we each read the document in full and made edits and left comments on how to improve the writing, present information in an unbiased way, and consolidate repeating information across sections. When we finished editing the document as a whole, we sent our draft to our advisor, Professor Laura Roberts, for further feedback on how to improve the structure and writing of our report. Usually within 24 hours, we will begin editing the section again as a team keeping in mind the comments and suggestions made by our advisor. We would send the same section of our report to be reviewed at least twice in order to make sure our report's structure and writing was its best possible version.

Outside of writing our report, we all had special skills that contributed to the project in other ways. Adrian was the lead designer of the alternate food distribution layout. He collaborated with Mari to figure out the best locations of the tables and positions of the volunteers. He also timed tasks and outlined our PantrySoft manual. Meena was the main photographer and took many photos of the food distribution, us volunteering at EBS, and the barcode implementation process. Olivia was the lead designer of the PantrySoft manual for the volunteers. She provided screenshots and worked together with Spanish speakers to properly translate the document. She also maintained the list of names our team was given permission to use in our report. Christian was the primary PantrySoft editor of our group. He experimented with the software and communicated with Betty and Mari to make sure all necessary information would be properly gathered when registering clients. He also designed the barcode tags. Meena and Olivia were the primary English-Spanish translators for volunteers who were monolingual. Their work helped items to be moved to the correct locations and ensure Spanish-speaking clients were checked in properly. Adrian and Christian primarily helped with moving food from the storage room to the clients outside. Their work allowed clients to be served food at a constant rate.

MEET THE TEAM

Adrian is a BS Aerospace Engineering major with a focus on astronautics. At school, he spends most of his time collaborating on homework with his friends, and he is considering going for a masters in aerospace. Outside of school, Adrian enjoys listening and making music, working on projects around the house, playing video games, and having fun with his friends.

Meena is a BS Society, Technology, and Policy major with a focus in data science and law. At WPI, she is an active member of Chi Omega and rides with the WPI Equestrian team. Outside of classes, Meena enjoys exploring Google Maps, rating Disney Channel Original Movies, watching airplanes land, and raising Monarch butterfly caterpillars.

Olivia is a BS/MS computer science major with a personal focus in software engineering. At WPI, she is most involved with Event Crew at the Student Activities Office and being an officer of the Society of Martial Artists. Outside of classes, Olivia enjoys martial arts, cooking, studying linguistics, and going to events with friends.

Christian is a BS/MS robotics engineering major with a focus on autonomous and embedded systems. At WPI, he is the president of the SCUBA diving club and treasurer of the Ski and Snowboard and Cue Sports clubs. He also partakes in Outing Club events and is a member of the Massachusetts Alpha chapter of Tau Beta Pi. Outside of classes, Christian enjoys SCUBA diving, skiing, and working on personal projects.

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INTRODUCTION

The Fight Against Food Insecurity

Food insecurity, the inability to consistently acquire a sufficient amount of quality food, is prevalent among many different communities. The affected communities include ethnic minority groups and economically disadvantaged families all over the United States. Food banks and food pantries are methods that are used in an effort to combat this problem, and in order to stay up and running, non-profit organizations rely on grants from local and federal governments and sponsors. Critical to this funding is being able to show proof to the funders of the number of people served as well as demographics information. With a lack of an efficient client tracking system to receive the required data, non-profit organizations may only receive a partial amount of the funds they qualify for. Overall, a lack of funds does not adequately allow organizations to sustain themselves or expand their resources, reducing their effectiveness.

At El Buen Samaritano (EBS), a food pantry in Worcester, Massachusetts, volunteers identified a challenge with filling out repetitive paper forms while providing valuable support to the food insecure members in our local community. A previous project team assisted EBS with the implementation of PantrySoft, a data collection software system that the food pantry could utilize to collect client data and generate reports. EBS purchased a license for PantrySoft, but the team did not have enough time to assist with the transition. As a result, EBS still relies on paper forms that must be manually entered into PantrySoft to create reports. However, the EBS executive director is determined to investigate the capabilities of PantrySoft and use the software to assist with logging client data. With the ability to track clients and generate reports quickly and efficiently, EBS can apply for more funding and increase the number of community members they serve.

In this report, we outline information about the consequences of insufficient access to high quality food and how it connects to helping EBS expand its capabilities. We lay out the mental, physical, and economic impacts of food insecurity with a focus on economically disadvantaged communities in Worcester, Massachusetts, as well as explain the history of EBS's journey so far in tracking data digitally. Furthermore, we talk about what PantrySoft is and the capabilities it offers. We also discuss our approach to collect critical metrics and to see how EBS currently operates on a day to day basis.

With this data, we organized a more effective way for EBS volunteers to digitally track their clients with PantrySoft. Next, we discuss the results of the food distribution layout changes and software changes. Finally, we offer short and long term recommendations to make the workflow at EBS more efficient.

Achieving our goals allows the EBS staff to dedicate more time to serve the local Worcester community. In addition, the volunteers are able to compile and present data to funders, which will lead EBS to getting approved for more funding to be used to keep its doors open.

BACKGROUND

2.1 Food Insecurity in the United States

Millions of people in the United States struggle to obtain enough healthy food. According to data from the United States Department of Agriculture (USDA), 12.7% of American households experienced food insecurity in 2019 (USDA, 2020). In 2006, the USDA Economic Research Service (USDA ERS), along with the Committee on National Statistics (CNSTAT), introduced "new language" (USDA ERS, 2023) to better describe the levels of severity of food insecurity that was present in households throughout the nation. This new language created an understanding of how food insecurity affects the United States on a large, nationwide scale (Worcester Regional Research Bureau, 2022), as well as provided higher level distinctions under the umbrella term of 'food insecurity'. The new language, as shown in Figure 1, includes high food security, marginal food security, low food security, and very low food security (USDA ERS, 2023).

Figure 1:
What is 'Food Insecurity'?

High Food Security — Households had no problems, or anxiety about, consistently accessing adequate food

Marginal Food Security — Households had problems or anxiety at times about accessing adequate food, but the quality, variety, and quantity of their food were not substantially reduced

Low Food Security — Households reduced the quality, variety, and desirability of their diets, but the quantity of food intake and normal eating patterns were not substantially disrupted

Very Low Food Security — At times during the year, eating patterns of one or more household members were disrupted and food intake reduced because the household lacked money or other resources for food.

Note: Adapted from the USDA ERS, 2023

These terms created by the USDA ERS expanded the previous terms used before 2006; for example, high food security and marginal food security were combined as merely "food security", not taking into account any financial anxiety a household may have. The old term for low food security was "food security without hunger", and very low food security was named "food security with hunger". These changes were necessary since the label "hunger" can vary from person to person, therefore is not a consistent method to measure food insecurity throughout a nation. The updated distinctions within the umbrella term 'food insecurity' give the ability to clearly convey relevant information to both policy officials and the general public (USDA ERS, n.d.). This provides crucial information to important sources like the federal government in order to diagnose food insecurity in the country and provide assistance as needed. This understanding helped us examine the best way to provide aid to any mental, physical, or economic hardships caused by food insecurity.

2.2 Causes of Food Insecurity and its Effects in Worcester

Food insecurity in the United States imposes significant mental and economic setbacks on affected communities, and Worcester, Massachusetts is no exception to this. The root cause of food insecurity in Worcester stems from the economic and industrial decline the city has experienced over the last few decades (Sullivan, 2021). Since the 1990s, companies and the job opportunities they had offered have withdrawn from Worcester. This left families who immigrated to Worcester for work unemployed or forced into a lower paying occupation, leading to major financial struggles.

According to the Worcester Regional Research Bureau (WRRB), many food insecure residents who are struggling financially have to "make trade-offs between housing, heat, electricity, healthcare, and food" (WRRB, 2023). Most of these options have strict deadlines for payment, while food usually does not. Housing and utility bills often require a large majority of a family's income in

in Worcester, leaving less money saved for healthy food. For housing in Worcester alone, over 60% of households spend over 30% of their income on housing costs, and for every 1 in 5 Worcester residents, households spend over 50% of their income on housing (Marfo et al, 2023).

Families facing food insecurity are confronted with a myriad of complications in relation to health and general wellbeing. One prominent example showing how food insecurity creates a visible health impact is through obesity. Food insecurity has close ties to obesity, mainly through the limited access to healthy food at the disposal of community members.

Areas with stores selling unhealthy and high calorie foods outnumber food vendors selling healthy foods -called food swamps- have a strong correlation of residents developing diet-based diseases, including obesity (Marfo et al, 2023). Access to healthy food in large markets is sparse outside of central Worcester (Figure 3), which leads to many residents shopping from stores closer to home (WRRB, 2023). The lower weights signify not only the lack of accessible healthy markets, but these healthy markets being outweighed by small drug stores (WRRB, 2023) that do not offer the same nutritional food as a grocery store.

Figure 2:
"Percentage of Households with Housing Costs Exceeding 30% or 50% of Income"
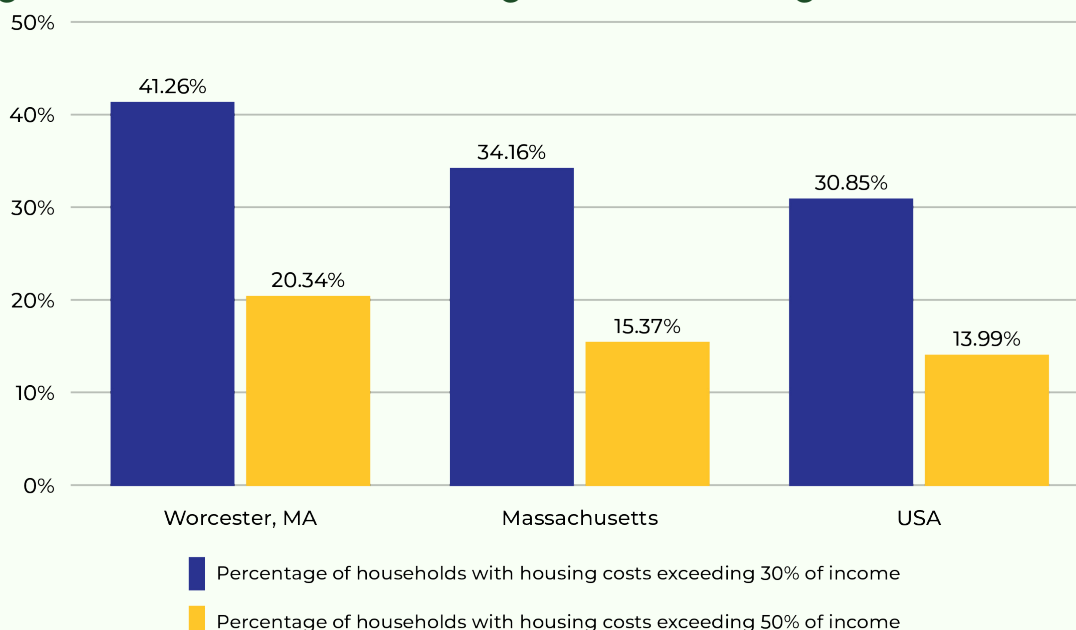
Note: Copied from Marfo et al, 2023

Another health concern of food insecurity is increased tobacco use. There is a large overlap of smokers and food insecure families, with smokers three times more likely to be food insecure than non-smokers (Mousa, 2019). Tobacco products tend to curb feelings of hunger, so smoking becomes a coping mechanism for some people to avoid thinking about the stress food security causes (Marfo et al, 2023). In Massachusetts, tobacco products are allowed to be sold in "Non-Age restricted retail establishments" including convenience stores (Massachusetts of Department Health, 2019), and with many Worcester counties being food swamps, there is an increased access to tobacco products alongside unhealthy food.

By performing an in depth analysis of these variables, a community can create better solutions to solving food insecurity by creating access points tailored to specific communities. Food pantries or other government funded emergency food programs improve the food security of their users and create environments with reduced stress to combat various mental and physical health issues by giving users more accessible ways to obtain healthy food (Mousa, 2019).

Figure 3:
"Food Access Index at a 1-mile...distance"

WRRB Worcester Food Insecurity

County - Food Access 1 mile

Mean 1 mile

- 12-15
- 9-12
- 6-9
- 3-6
- 0-3
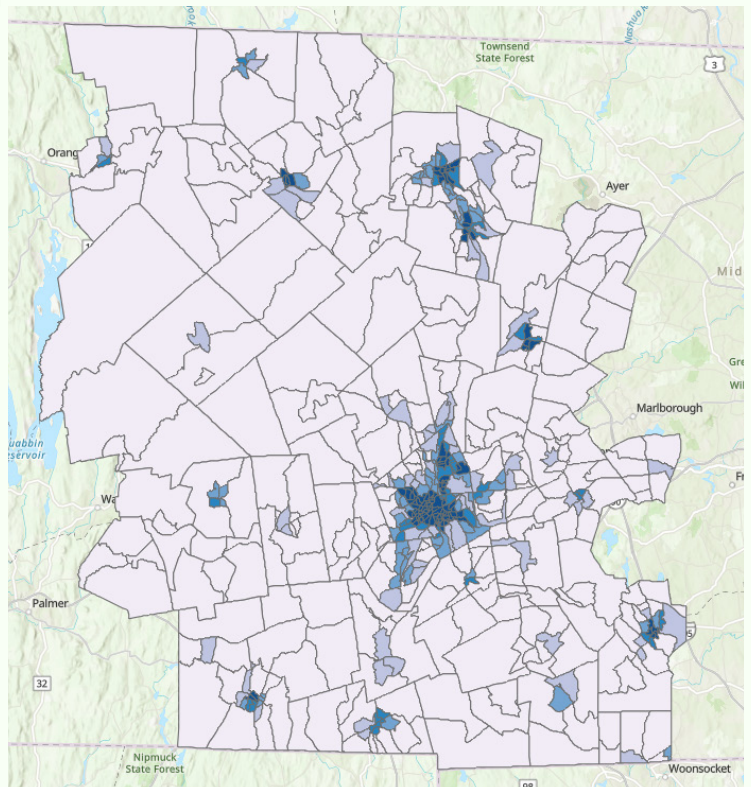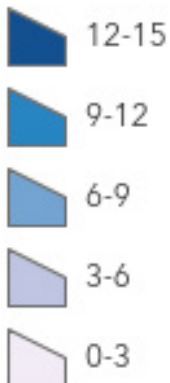
Note: Copied from WRRB, originally sourced from MAPC Data, 2023.

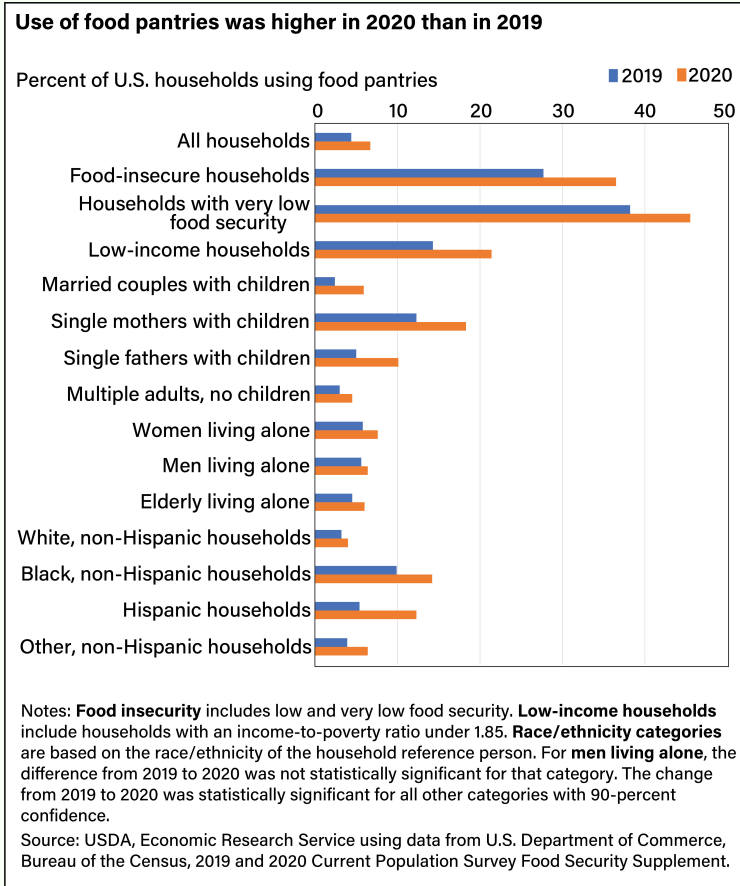# 2.3 The Effects of Food Pantries on Food Insecurity

In order to slow or avert the cycle of food insecurity, it is necessary to implement solutions to the social and health problems within the communities affected. A common solution across the United States is food banks. Food banks are non-profit centers of food distribution that receive food donations from grocery stores, restaurants, and local communities. They provide food to pantries which operate in communities that vulnerable populations can easily access. For example, some food pantries are located inside of schools so that families with children have access to food. Other food pantries have mobile options so that the elderly can have pre-packed bags delivered to their door (Waite, 2019). This shows that food pantries are able to adapt to their clientele by offering unique access points to their services, emphasizing the importance of assisting the community in any way they can.

A systematic review of 21 studies conducted by Oldroyd et al. emphasizes the critical role of food banks, particularly for individuals with low or very low food security. As seen in Figure 4, the onset of the COVID-19 pandemic exacerbated the situation, leading to a substantial increase in food bank users in high income countries (Oldroyd, 2022). In the US, food pantry use increased from 4.4% in 2019 to 6.7% in 2020. While 6.7% may appear modest, it represents the highest usage rate since 2001, surpassing the previous high of 5.5% observed in 2014 (USDA ERS, 2021). A majority of food bank users come from very low food insecurity households, with usage rates as high as 45.5%, while marginal and low food-insecure households's usage rate reaches 36.5% (USDA ERS, 2021; Oldroyd, 2022). Statistical analysis revealed significant annual usage rate increases across all types of households, including racial and ethnic groups as well as "unemployed, lone-parent and single-person households, and those suffering ill-health" (Oldroyd, 2022). These statistics represent the importance of food banks and reveal how critical they are in times of crisis.

Figure 4: "Use of food pantries was higher in 2020 than in 2019"

Use of food pantries was higher in 2020 than in 2019

Percent of U.S. households using food pantries

Notes: **Food insecurity** includes low and very low food security. **Low-income households** include households with an income-to-poverty ratio under 1.85. **Race/ethnicity categories** are based on the race/ethnicity of the household reference person. For **men living alone**, the difference from 2019 to 2020 was not statistically significant for that category. The change from 2019 to 2020 was statistically significant for all other categories with 90-percent confidence.

Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of the Census, 2019 and 2020 Current Population Survey Food Security Supplement.

Note: Copied from USDA ERS, 2021

However, food banks are not permanent solutions to food insecurity. Despite improving food access and food quality for those who use them, there is a general lack of food variety which benefits families less if they have relatives with dietary or health restrictions (Oldroyd, 2022). Other programs need to exist alongside food banks in order to address upstream health factors of food insecurity, such as diabetes intervention food parcels (Oldroyd, 2022), accessible healthcare, and accessible tobacco cessation (Marfo, 2023).

Aside from food banks and food pantries, the presence of local support groups exist all over the United States, and it is an important factor to remember even if it is not in the forefront. For example, Leah Penniman, the author of Soul Fire Farm, uses her experience as a black farmer to inform the public about how racial discrimination and the mistreatment of farmers lead to food insecurity (Coleman-Jensen, 2021). Another example is Omaha Together, One Community (OTOC), an organization in Nebraska dedicated to social work to spark political change (Sbicca, 2018). Food pantries alone can offer help to many people who need it, but combined with a sense of community, upstream factors can be addressed to assist with the alleviation of the community's common struggle.

2.4 El Buen Samaritano and Its Role in Worcester

El Buen Samaritano, a food pantry in Worcester, Massachusetts, fosters a community to relieve social struggles.

Founded in 1991 by Osiris and Maria Reyes, EBS serves as a vital food pantry for anyone in need in and around Worcester's Main South and Main Middle neighborhoods, many of whom are Latino and immigrant residents. Their daughter, Maricelis "Mari" Gonzalez, is currently the executive director and primary leader of the organization. EBS's main goal is to combat food insecurity among local families, youths, and elderly in need of assistance, made possible with the efforts of around 120 volunteers. The services available at EBS are accessible to individuals from all backgrounds, regardless of their personal circumstances (El Buen Samaritano, 2024).

The mission of EBS is straightforward: to offer aid to families seeking assistance. Their vision sets themselves apart from similar organizations in several ways, creating a community where "collaboration is the cornerstone in the fight against poverty and hunger" (El Buen Samaritano, 2024). To achieve this vision, they firstly prioritize creating a welcoming environment that fosters dignity and belonging for individuals and families. They also provide a range of complementary services beyond food assistance, including organized food drives, emergency food services, after school snacks, Thanksgiving dinners, winter coat drives, vaccine clinics, translation services for Spanish speakers, resources for SNAP/WIC applications, and resources for foster care (El Buen Samaritano, 2024). They are partnered with the Worcester County Food Bank, and have other partnerships with organizations such as the National Honor Society, Toys for Tots, and SNAP, as well as educational institutions like Holy Cross, Clark, and WPI (United Way of Central Massachusetts, 2024).

These additional services and partnerships aim to comprehensively address the multifaceted challenges faced by individuals and families experiencing food insecurity. As previously mentioned, these challenges include obesity, anxiety over food intake, economic stress, and poor access to healthcare. Another detail critical to understanding is that the accomplishments of Director Mari Gonzalez have significantly contributed to the distinction of EBS. Notable achievements by Director Gonzalez include (EBS Official Facebook, 2024):

- Recognition through inclusion in the Worcester Community Action Council in March 2022 (WCAC, 2022)

- Delivery of keynote addresses, most recently for the Woman and Young Woman of Consequence Awards Ceremony in March 2024.
- Successful acquisition of multiple grants for EBS from various organizations within the city and state.

Her involvement in the local community has led to EBS getting recognized by government officials. She has invited and met with members from the government, including the governor of Massachusetts, and members from the White House. This is significant because this has opened the door for major grants and funding, which helps EBS keep its doors open and expand their capabilities. EBS has been working with WPI students to improve its efficiency and effectiveness in their data collection procedures.

2.5 From Paper to PantrySoft

In the past two years, EBS has collaborated with groups of WPI students to devise a digital mechanism for tracking their data in order to replace the paper and pencil system used. The original research of digital data collection and inventory organization was done by the 2022 project team. This team primarily focuses on organizing the physical items and designing an online client application form (Rockrohr et al, 2022). Their solution was JotForm for client demographic data collection. EBS attempted to implement the new software, but lacked the equipment to make full use of it. They reverted back to paper forms, leaving the question of digital data tracking unanswered.   In 2023, a second group of WPI undergraduate students worked with EBS to research and compare several digital data collection applications in order to track clients and inventory. This group suggested the implementation of PantrySoft, the "all-in-one software solution for food pantries and more" (PantrySoft, 2021). It offers a range of services from client database management to inventory tracking. The 2023 project team assisted EBS with setting up PantrySoft to record their client data. According to the group's conclusions, EBS had not begun to use the software to check in clients, however they offered suggestions on how to use PantrySoft in the future, including utilizing barcodes for client check-ins and the inventory tracking page (Reno et al, 2023).

The goal of our project was to

conduct and analyze the current PantrySoft usage within EBS and follow up our findings with suggestions on possible further implementations into the regular workflow. In the next chapter, we will describe the methods we used to achieve our goal.

METHODOLOGY

3.1 INTRODUCTION

We aimed to improve the efficiency of El Buen Samaritano's (EBS) client tracking system through PantrySoft so that volunteers can use the software more often and more efficiently. Our secondary goal was to enable Mari and her grant writer, Debbi Mallinson, to quickly generate accurate reports to funders. With the ability to track clients as well as generate reports quickly and efficiently, EBS can qualify for more grants and significantly speed up the check-in process, increasing the number of community members they are able to serve.

Figure 5: Methodology Plan of Action
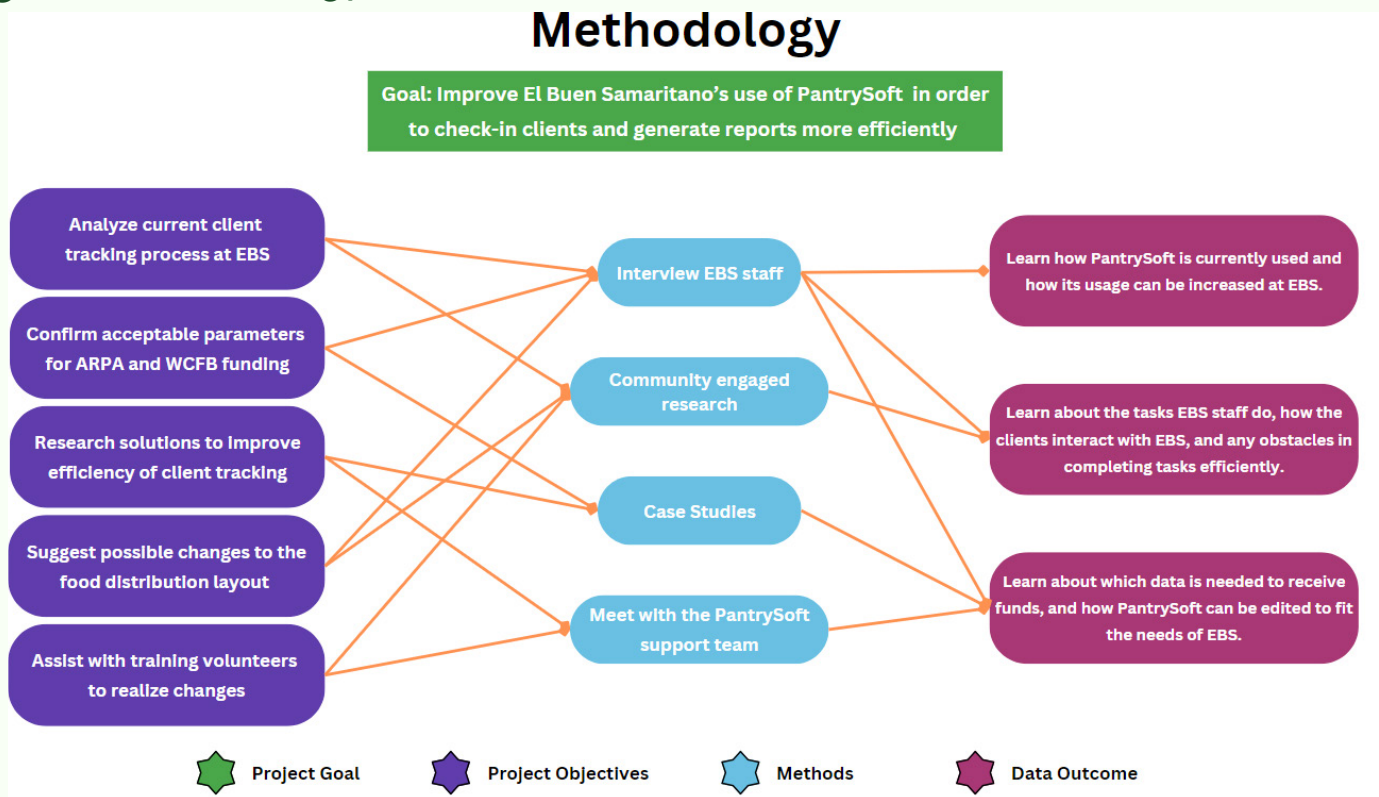
Note: Created using Canva

3.2 Project Objectives

We had a number of specific objectives to tackle our goal. One major objective was to understand EBS's client tracking system. Before we became involved, EBS used PantrySoft as a secondary storage of client information, with paper forms being the primary method of tracking data. There are also a tremendous amount of paper forms and records stored in the director's office since the 1990s. Our objectives, shown in Figure 5, helped us find the data needed to implement more efficient client tracking with PantrySoft. In addition to improving the data collection process and client tracking, we also came up with a plan to design and implement a more orderly method to physically distribute food to clients. These objectives also allowed us to help EBS easily compile the client demographics into the proper format, sign in clients, and get them food efficiently. The data collected allows the organization to qualify for crucial funding to continue to provide food assistance within Worcester.

3.3 - Research Questions

Following our initial discussion with Mari regarding the project objectives, our team formulated the following research questions to explore:

1. How is PantrySoft currently utilized by EBS?
2. How can we better integrate PantrySoft into EBS's workflow to improve their efficiency?
3. How can we increase client check-in speed and food distribution speed?
4. How can we best present data and records to funders?

3.4 - Approach to Research Design & Rationale

In regards to our methodological approach, we concluded that a mixed methods approach was the most suitable. The predominant portion of our data is qualitative and focuses on the operations and functionality of EBS. In addition to the qualitative data, the quantitative data

we collected includes the number of individuals processed and the time taken to complete specific tasks. This information falls under the second data outcome in Figure 5, which shows that we obtained this data with direct engagement with EBS staff and the community. The data about task completion time is critically important to our final solution, as it enables us to answer Research Question 4 as well as complete objective 4 (Figure 5) by identifying tasks that would benefit from efficiency improvements. Using a mixed methods approach that combines our quantitative data and qualitative data led to an in-depth understanding of how EBS operates, which narrowed down what we needed to do in order to change their procedures and their implementation of PantrySoft (Creswell, 2022).

Interviews and community based research were the primary methods of research we used to gather the data and information we needed. As shown in Figure 5, volunteering at EBS gave us the opportunity to gather a multitude of information including how the paper process works for client check-in as well as observe the process of getting the food to clients. Volunteering allowed us

to devise a strategy to improve the check-in process as well as catch potential shortcomings that we were then able to find a solution for. All this gave us answers to research question 3. Interviews with some EBS staff helped us about the current role of PantrySoft in the data collection process. This information helped us define an answer for research questions 1 and 2. Participating in this work uncovered any inefficiencies with EBS's current PantrySoft setup, allowing us to answer Research Questions 4. In order to engage in community research, we conducted semi-structured interviews in the form of casual conversations with the volunteers, clients, and external resources. The answers we received from the volunteers to questions listed in Appendix A gave us more descriptive information about experiences with the paper system and using PantrySoft, as well as supported our understanding of the positive or negative feelings towards PantrySoft, helping us solve Research Questions 2. We also interviewed Mari and 3 EBS staff members, including Mari's sister, Jackie, about EBS's procedures of logging new client data into PantrySoft. Additionally, we interviewed others who are relevant to PantrySoft, such as PantrySoft's customer success agent as

well as the executive director of Ginny's Helping Hand, another food pantry who uses their software as well.

In order to obtain some of the qualitative data to complete our goal, we gathered information by following the community based research guidelines (Johnson, 2016). These guidelines helped us to perform research more ethically and personably all while highlighting the community's strengths. For example, community perspectives can give researchers insight about health disparities (Gibbons, 2024), and in the case of EBS, the clients understand how the health impacts of food insecurity on the Worcester community. Mari and the EBS volunteers are experts in running a non-profit organization, understanding the inner workings of a food pantry, and how to distribute items to the food insecure community of Worcester. After engaging with both the clients and the volunteers, we were provided a more accurate view of what individuals enjoy about servicing the community. While performing community based research, it was also important to use an asset based approach (Johnson, 2016); instead of formatting our research around a preconceived idea that both EBS's operations and the food insecure

community has challenges at its forefront, we formatted our research by listening and asking questions about first hand stories of the community members. By being directly involved through community based methods, we were able to think about the community's experiences and resources to research for a solution (Lucero, 2024). The information we learned from the clients and EBS staff allowed us to better visualize the impact of EBS and understand the importance of the food pantry's organization on members of the community.

3.5 - Making Better Use of PantrySoft

According to our initial meeting with Mari, the EBS staff had difficulty fully incorporating PantrySoft into their workflow. Volunteers were still collecting all client information through paper forms, then inputting the answers of each individual paper form into PantrySoft. For this current project, EBS wanted to improve the efficiency of client data tracking by eliminating the process of manually inputting client information and other data. This elimination allowed the

volunteers to have more time to work with clients and manage donations.

After looking at the PantrySoft website, we noted several interesting features including customer portals and barcode implementation. During early meetings with Mari and our advisor, we agreed to research barcode implementation to fulfill Mari's vision of giving clients key tags to reduce check-in time. This option also appealed to us because according to their website, PantrySoft also has an unlimited client library size, meaning we had the ability to catalog EBS's entire client base without worrying about device storage or software limitations.

We spoke with Betty Bloomer, one of PantrySoft's customer success managers, to inquire about the barcodes and how registration would work on the client's side. She also encouraged us to contact PantrySoft if we wanted any changes to registration forms or client accounts. PantrySoft has software developers that implement and maintain the features for the user for an annual fee of $1000 per year. This knowledge gives a glimpse into how we may expand the usage of PantrySoft, including not only the implementation of barcodes for checking in clients, but the elimination of paper forms and generating the

registration and demographics information with PantrySoft. EBS currently has client data forms set up, and we are aware that we needed to focus on client data management for our project. These features were important to keep in mind; if we could implement a well-organized client management system, our work will pave the way for EBS to fully utilize the capabilities of PantrySoft.

Additionally, we proposed two case studies on other food pantries in Massachusetts to gain insights into their processes. Our first proposed case study was the Quinsigamond Community College food pantry (QCC) in Worcester, as they successfully use software to track the inventory of their items and how much is donated. Although we could not meet with them, our thoughts were that QCC's system could have helped us better understand what aspects make it successful and will help us think about how to implement those aspects into EBS's system to answer Research Question 2. Our other proposed case study was Ginny's Helping Hand, a food pantry and thrift store in Leominster that utilizes PantrySoft to track food and clothing donations. We spoke to the executive director, Brandon Robbins, and learned that in addition to also using PantrySoft,

they have the same client registration form as EBS and send the same forms to Worcester County Food Bank and other funders; learning about their client check-in as well as the process for generating forms helped us understand how EBS could better utilize PantrySoft.

Below is a timeline that we put together in order to show what we did in order to complete our research objectives:

3.6 - Addressing Ethical Concerns

The most important part of doing our research was ensuring that the procedures were ethical. We considered several possible ethical concerns and how to mitigate them. First, we asked for permission to interview everyone we wanted to meet with. Next we explicitly asked for permission to use their name in our report. We originally planned to use a consent script, but our meetings and interviews were very informal. Our email to ask for an interview explained the

Table 1:
Implementation Timeline

Implementation Timeline

Task	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7
Exploring PantrySoft functionality	▮	▮					
Researching case studies			▮		▮		
Volunteering at EBS			▮	▮	▮	▮	▮
Interviews with Mari and volunteers					▮		▮
Implementing barcode tags					▮	▮	
Training volunteers					▮		▮
Writing documentation						▮	▮

Note: Created using Google Sheets

purpose of our project, and unless explicit permission was given, our interviewees were defaultly anonymous. At the beginning of our interviews, our group also informed those we met with about who was collecting information.

It is important to acknowledge all potential risks, no matter how small. For example, there is a chance that publishing cultural information may invite dangerous people outside of the community to cause harm to the community that the researchers are working with (Lucero, 2024). Therefore, confidentiality was a major concern for us, since it is a concern for the clients at EBS. During our initial meeting with Mari, she informed us that many of the families are concerned with sharing personal data, especially those who are undocumented or face other legal obstacles. To maintain confidentiality, our team collected minimal personally identifiable information for the interviewees where applicable.

3.7 - Challenges and Limitations

Throughout the research process, we had run into challenges that we tried our best to prepare for. For example, we were aware of the language barrier between us and the clients. There are many non-English speakers who use EBS's resources, and it is important that we were able to communicate with them to collect accurate demographics and provide assistance if needed. Several of our group members have intermediate fluency in Spanish, which helped us communicate with many Spanish-speaking families and EBS volunteers, and we were able to depend on bilingual families and volunteers to communicate information to the remaining majority of clients. However, we were underprepared for families that spoke little to no English or Spanish, so collecting their information was more challenging.

Another limitation our group encountered was our lack of relation to the personal struggles with food insecurity. Without personal experience, we were not able to predict all the motivations of the clients to show up or

adequately prepare for the crowd during food distribution days. We also were not at EBS every day, therefore we have a disconnect to the day to day situations the volunteers of EBS experience. As we built a stronger connection to Mari, the volunteers, and the clients, we understood how to navigate the execution of our project.

RESULTS & FINDINGS

4.1 Introduction

Over the last several weeks, we have found results to our research questions and general goals through a variety of processes in our project. We will first explain the previous food distribution configuration, and the physical changes we have made to it for greater efficiency. We then talk about the progress we made with PantrySoft to further integrate the software into their workflow, finally concluding with recommendations for the future usage of PantrySoft and the evolution of EBS as an organization.

4.2 Changes to On-Site Distribution Procedures can Improve Efficiency

While we were volunteering at EBS, we were able to see how food distribution is carried out firsthand. On our first day volunteering, we found that clients would take a numbered index card and line up along the front of the main building in order, as represented below in Figure 6, section 3 The check-in process was done by one of the volunteers at a table below the stairs and entrance walkway as represented in Figure 6, section 2. The check-in process included two forms for client information to be filled out. One form was a registration form for new clients, which asked for the clients' demographics, number of household members, income, employment status, if they receive government assistance, and number of disabled household members. These forms are used by ARPA to reimburse money to EBS. The second form, for returning clients, asks for similar information in addition to the specific age ranges of each household member.

This form is used to fill out the monthly WCFB report. Both forms are included in Appendix B and C, respectively. According to one volunteer, and confirmed by our own timing, the new client form takes at least a full minute to fill, but can take up to three minutes or longer. Additionally, the returning client form can take between 30 seconds to two minutes to fill.

Once clients are checked in, they can pick from a set amount of food items at their choosing. The main essential food items, in addition to foods like bread and produce, were placed on tables located in Figure 6, section 4. Each client and/or household was able to take from a basket, along with a bag of meat, a bag of produce, and a carton of a dozen eggs. Figure 6, section 4 shows that the tables with these items were along the entrance walkway. The setup of tables included six pre-made baskets and a bread table. After clients bagged their chosen items, volunteers would grab new sets of the pre-made food baskets from the side door, represented by Figure 6, section 5, and place them on the table. The food tables were overseen by four volunteers initially. One volunteer replaced the baskets while the others supervised two baskets. If volunteers leave early, the number of baskets on the table

gets reduced, simultaneously reducing the number of clients that are served at a time.

After food distribution concluded on Friday, we discussed the challenges of the original Figure 6 setup. Having the line in direct sunlight was not good for the people waiting in line, and this was amplified by the relatively long times it took for the client forms to be completed. The location of the line also blocks the stairway to the food baskets, making it crowded and difficult for volunteers to move in and out carrying in donations or assisting clients.

To combat this problem, we, along with Mari, decided to move the line next to the warehouse just across the parking lot, as shown in Figure 7, section 1. This gave the clients some shade and kept the stairs from getting blocked. The check-in tent was also moved across the parking lot as shown in Figure 7, section 2. These changes went into effect on our second day volunteering, the following week.

On our second day volunteering, we encountered a few problems that we were able to solve quickly. For example, Mari had a new table for produce and initially placed it right next to the door where volunteers would grab new food to restock the tables. With many clients crowding around the tables, the door was

Figure 6:
Original food distrubution layout
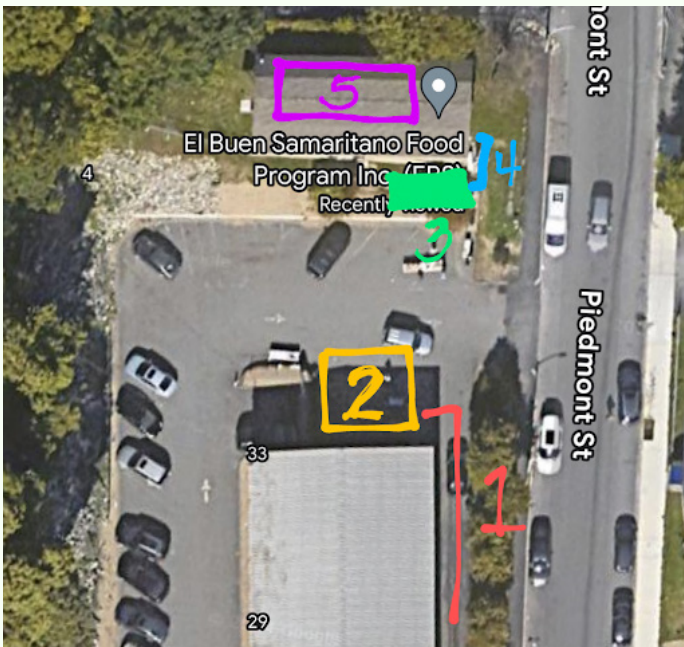
Figure 7:
Alternate food distribution layout
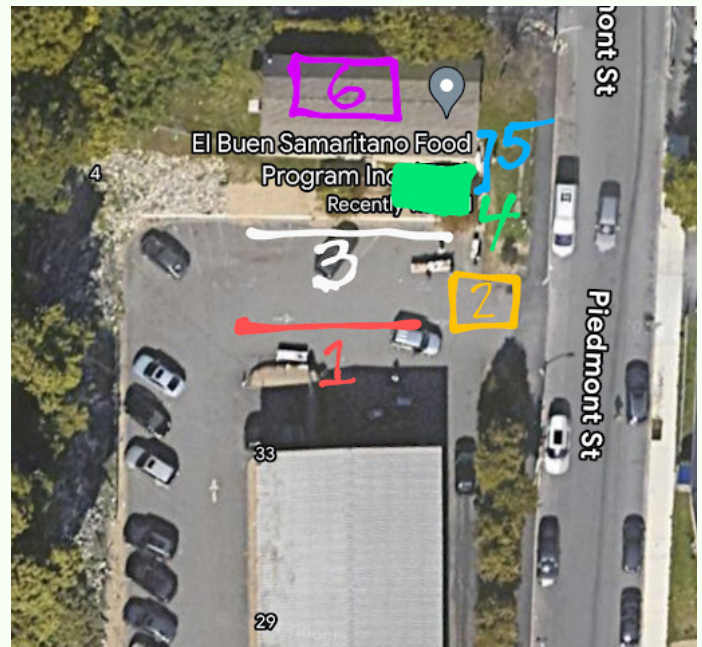
Note: Images from Google Maps, edited with Google Pixel 6

blocked for volunteers; however, the produce and bread were moved to Figure 7, section 3, decongesting the area to make it easier to move in and out of the building. Also some clients didn't bring their own bags to put their food into, so we made sure to have crates and plastic bags on hand for people who needed them, as the baskets the food is organized in belong to EBS.

The number of volunteers in charge of the tables outside was a crucial aspect to keep in mind. To encourage efficiency, three baskets were assigned per volunteer to watch over in order to ensure clients were not taking from other people's baskets. Making sure volunteers know the procedure and where to put donations was also an important step.

4.3 - Implementing Additional PantrySoft Features

After looking over the list of features on the PantrySoft website, we became particularly interested in the possibility of using client barcodes. The client check-in process seemed to be a prominent issue during food distribution due to long wait times, language barriers, and the time required to fill out paper forms. The transition to a barcode system allows the clients to be registered once at the check-in table, albeit taking a minimum of two minutes longer than typical. Afterwards, check-in would be reduced to a single scan of their barcode, streamlining the process by cutting the number of paper forms needed to be input manually into PantrySoft.

In order to see if our idea would be feasible, we first met over Zoom with Betty Bloomer, one of PantrySoft's customer success managers. She confirmed that PantrySoft supports client barcodes and demonstrated the process of registering a barcode to a client. Betty also had several suggestions for us, including the possibility of a new registration form. Finally, she informed us that PantrySoft was working on data visualization tools, which could help generate visually appealing reports. However, these data visualization tools are not yet available for public access.

At our next meeting with Mari, we discussed what we learned from Betty about the possibility of ordering barcodes for the clients. Mari was on board, so we researched our options for printing providers and additional accessories for the new check-in process. We decided to

use K12Print, a service recommended by PantrySoft, to order 1000 custom barcode tags featuring the EBS logo. Barcode scanners and key rings were ordered from Amazon. The former is used to quickly scan each barcode tag, and the latter used to encourage clients to bring the barcode tags back weekly by attaching them to their keys.

Once Mari approved the purchases, we were able to perform tests with the barcode tags before the next food distribution day. While we were training Mari and some volunteers how to register clients with PantrySoft, we learned that the new client registration process is quite lengthy, especially compared to a singular physical paper form. We knew that registering clients with the barcode tags will make data entry more consistent and save time, so we confirmed that we wanted to trial the barcodes with all of the clients the next day. Registering the clients went well, although a rainstorm put an expedited end to the day. We ended the day with 94 clients registered. The following week, we were able to further register 71 new clients directly into PantrySoft. We also logged the visits of 27 returning clients that brought back their barcode in. As a reward to the returning clients and an encouragement to those who aren't registered yet, those who

brought their barcode tag were allowed to go to the front of the line.

IDuring the second week of barcode registration, many clients expressed their excitement and gratitude for the barcodes. The returning clients enjoyed the faster check-in system and having the privilege of going to the front of the line. This system also benefits the clients that speak a different language than the volunteers, as there was minimal communication necessary to be able to scan their barcodes. Additionally, many new clients saw the check-in system and had their ID's ready before we needed to ask for it. After the distribution day was complete, Mari and the volunteers who worked the check-in system with us were thankful for our help in registering 165 clients into PantrySoft.

After concluding two weeks of barcode tag implementation, we wanted a benchmark regarding the timing to manually input client data from the written paper forms, allowing us to compare the new timing data collected from the barcodes. We reached out to Mari's sister, Jackie Wright, who is the data entry manager. As per Table 2, the total time to fill out paper forms at the check-in table and later input them into PantrySoft was typically between 4:45 to 7:10 minutes per legible paper form, and even

longer if the handwriting was illegible. The time it took to log a visit was, at most, 55 seconds. With the barcodes implemented, clients are registered directly into PantrySoft during check-in. The registration process at the check-in table now typically takes between 3:45 to 7:00 minutes, which is nearly identical to -and in some cases, faster than- the paper registration time. The benefit is further noticed when logging a visit for returning clients; it was completed in under 10 seconds through a simple scan of the client's barcode, saving over 40 seconds. Now, the only situation Jackie and data entry volunteers need to manually input data from paper is when a new client does not have a form of ID and must fill out a paper form. To clarify, IDs are requested only when issuing barcodes and not required to receive food. They are helpful to ensure the data input into PantrySoft is accurate.

Another improvement we made was having PantrySoft compile data for the Worcester County Food Bank (WCFB). EBS selects food there weekly and must provide specific data about ages, demographics, and numbers of clients served. We met with Brandon, the executive director of Ginny's Helping Hand (GHH), to discuss how they utilize PantrySoft for their daily operations. GHH not only uses PantrySoft, but due to their

Table 2
Time taken to comeplete tasks before and after the barcode system

	Paper (Check-in Volunteers)	Copy Paper into PS (Data Entry Volunteers)	In PS (Check-in Volunteers)
Time to Register New Clients			
Minimum	1:00	3:45	3:45
Maximum	3:00	4:10	7:00

	Before Barcode System	After Barcode System
Time to Record Client Visits		
Minimum	0:50	0:06
Maximum	0:55	0:10

Note: Created using Google Sheets

proximity to EBS in Massachusetts, they also use a lot of similar funding. One of the points Brandon mentioned was that GHH also uses the WCFB. He requested PantrySoft make a special report, which compiles all of the data required for the WCFB. We were able to reach out to PantrySoft and have them copy over the report to EBS's account. In the future, EBS will be able to click a single button to produce all of the data they require, expediting a process that usually takes many hours, described as "like a full time job" by one volunteer. We also looked into the possibility of adding custom reports for additional funding sources, but were told that we would need to request a quote.

Finally, we created documentation on the process of using PantrySoft, catered towards EBS's specific needs. The guide covers procedures such as client registration and logging visits. This will help volunteers become familiar with the typical procedures, such as registering a new client or logging a visit. The documentation is included in Appendix D.

RECOMMENDATIONS

5.1 PantrySoft Recommendations

Despite successfully increasing the usage of PantrySoft and speeding up returning clients' check-in time, we were only able to incorporate a few of our ideas to fully utilize the software. After conducting our own research and learning more about EBS's workflow, we have several suggestions on how to further expand the usage of PantrySoft. Continued future progress will bring the food pantry closer to being a completely paperless and digitally organized system.

Before barcode registration began, all client accounts were set to 'Pending Update' in PantrySoft. During our meeting, Betty recommended that we mark the old accounts with a different account status, allowing us to differentiate the clients that have not been updated and possibly purge them at a later date. This measure keeps the active client list organized and up-to-date. As for the purging timeframe, we believe that a one year window would be a good amount of time. Clients that were already in the database before barcode registration will have a shorter registration time, and one year will allow ample time for their information to be updated if need be. After the one year time frame, any prior registration forms will be invalid, and purging clients will keep the list relevant and organized. A purge will also result in Debbi, EBS's grants writer, being able to more easily pull demographical data from active clients for funding request forms and grant applications.

Another recommendation we have is to communicate with the PantrySoft support team and have them create reports for more funders. Having those involved with data management work together to design report generations will improve the funding and grant application process. Several funders require similar demographics information, which PantrySoft can compile, helping streamline the process of applying for grants.

Client data can also be used by Mari and her volunteers to organize events. If they notice families of a certain demographic are coming in more frequently, guests can be invited to EBS to help clients of that demographic. One example from the past that Mari mentioned was during the Covid-19 pandemic. There was an influx of new clients who didn't receive food stamps, while clients who did have food stamps had less reliance on EBS. Mari was able to invite a group to the food distribution that specializes in assisting people with food stamp applications.

PantrySoft is actively working on adding graph and chart generations for their customers. We requested that EBS be put on the email list when these data visualization features begin rolling out. Once available, EBS can use the visuals to show their impact to a multitude of audiences, including funders, government officials, and public community hearings. Additionally, future student research teams further implementing these features will be beneficial to Mari; it will allow EBS to further expand PantrySoft's usage without having to add more to Mari's schedule.

Finally, we believe our work with PantrySoft paves the way for expanding data collection from solely client demographics to include donation item values. In order to receive funding from the USDA, EBS needs to provide information about the financial value of received donations. From our time volunteering, large bags stuffed with clothing and toy donations were delivered often. Currently, there is no system in place to record the value of these donations that come in, so we suggest that a future research team implement a way to digitally record the value of in-kind donations. According to meetings with Mari and Debbi, calculating the value of in-kind donations would allow EBS to receive adequate funds and recognition, as well as further demonstrate its impact on the community.

5.2 Recommendations for Physical Changes

As EBS continues serving the Worcester community, Mari has dreams for the organization as each of their significant goals are met. Currently, the building

El Buen Samaritano occupies belongs to the neighboring church, and as time has passed, the church expressed its interest in reclaiming occupancy of the building. Additionally, weekly outdoor food distribution in the parking lot is an inconvenience to the clients, volunteers, and church for various reasons.

These developments ultimately leave EBS with an aim of occupying a new building in the future. To better serve the community, Mari would like to own and utilize a bigger building where EBS can better serve its clients. After our experience with a sudden rainstorm and a heatwave during outdoor food distribution, we believe that a building that can host an indoor distribution center would be ideal, especially throughout the various weather conditions Massachusetts endures. With enough indoor space, EBS can protect its clients from unpredictable weather conditions, better maintain their clients' privacy, and reduce any physical strain placed on volunteers. A new building could also offer a stairless entry, making the building more accessible. Finally, it could allow a one-way food distribution process where you enter one door and exit another.

After the barcodes are gradually implemented over the next several weeks, Mari is hoping to improve on the current frequency of food distribution. As the clients are more efficiently checked in, the goal of food distribution more than once a week can become a reality. With streamlined check in and the barcodes allowing EBS to track the number of times per week a client visits, it is possible to increase food distribution to Mari's goal of three times a week, or potentially even more.

Finally, Mari would like to hire staff and assistants to be able to run EBS as smoothly as possible. Currently, Mari has a handful of loyal volunteers who help her out on food distribution days and also throughout the rest of the week. Although they are invaluable help, Mari is typically the one to oversee operations, creating a large workload for her. Another one of her goals is to hire a full time assistant and staff to run EBS, making both her job and the clients' experience as seamless as possible.

CONCLUSION

Food insecurity is a nation-wide issue that affects families in a number of ways. With the help of food pantries, food insecure families can have access to the food they need. Throughout our time working with El Buen Samaritano, we were able to observe first-hand the positive effect their food pantry has on the Worcester community. By implementing a barcode system with PantrySoft, we drastically cut the amount of paper EBS uses, streamlined their client check-in process, and kickstarted their data collection. We hope we have successfully laid the groundwork for future research to further expand El Buen Samaritano's reach and improve service to their community.

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APPENDIX A
Interview Questions & Data Collection Tools

Interviews:
Data to gather from:
- EBS volunteers -
  ◦ # clients served
  ◦ Tasks performed daily
  ◦ Time to complete tasks
  ◦ Use of PantrySoft

- EBS director (Mari) -
  ◦ **same as EBS Volunteers**
  ◦ Info on client demographics
  ◦ Grant writing process
  ◦ Organization of inventory

- Data Entry worker (Jackie) -
  ◦ **Same as Mari**
  ◦ Information input online
  ◦ Data collection done through PantrySoft

- ARPA workers/other funders -
  ◦ Purpose of paper and spreadsheet
  ◦ Acceptable sources of client data (excel, pdfs, paper graphs, etc)
  ◦ Possibility of paper forms generated from digital data?
  ◦ Time it takes to do data entry

- PantrySoft workers (Betty) -
  ◦ Most common features among users
  ◦ How to implement new features
  ◦ Which features are compatible with EBS workflow (scanned paper forms, spreadsheet design)
  ◦ Customer pages/barcode compatibility with potential membership cards

- Grant writer (Debbi) -
  ◦ Types of grants EBS is eligible for
  ◦ Time it takes to complete applications

Community Engagement:
Data gathered from:
- Volunteering during Friday food distribution -
  ◦ See where EBS has gaps in smooth data collection through firsthand experience
  ◦ EBS does food distribution slightly differently week to week (as Mari tries new things to see what works)
  ◦ Our experience as volunteers one week may not be a typical representation of how food distribution is usually handled

- Chatting with clients -
  ◦ See what they prefer in how food distribution is handled
  ◦ Ask about their experience filling out forms (a hassle? Preferred using technology?)
  ◦ How long do they spend waiting in line typically?
  ◦ Family return rate

APPENDIX A

Case Studies:
Data gathered from
- GHH -
  - method of digital data collection (app/spreadsheet/inventory organization)
  - where data is sent and how (spreadsheet, paper, pdf)
  - how pantrysoft is used in workflow (input items? customer portal?)

- Pantry that submits forms to ARPA? -
  - **same as GHH**
  - organization of paper vs spreadsheets
  - success rate of receiving money from them

Sample Interview Questions (EBS Volunteers, EBS director, Case Studies):
- Are you involved with collecting client information from new families?
  - How many new families fill out the demographics forms each week?
  - How long does it take for families to fill out the forms?
  - What do you do with the forms after collecting them?
  - How do you think a digital form would impact the demographics collection process?
  - How do you track families between weeks?
  - Do you believe that EBS clientele would be receptive to keeping and scanning a barcode, such as a tag, every week?
- Tell us your proficiency with computers, especially with Excel/spreadsheets software?

- Do you use PantrySoft?
  - What tasks do you do using PantrySoft?
  - Do you find PantrySoft easy to use?
  - How could generating pdfs and spreadsheets be more efficient?
  - How would you feel about a barcode/membership system for returning families?
    - How feasible is it to create and maintain a list of returning families?
- Anything else we should know that we haven't covered?

Sample Interview Questions (Grant Writer, EBS director, ARPA workers)
- Digital spreadsheets
  - How long does it take to input paper forms to spreadsheets? (EBS workers only)
  - How long does it take to compare information on spreadsheets to paper forms? (ARPA and Worcester City Reps only)
  - How do you organize digital spreadsheet folders?
  - Besides data entry errors, are there other issues that slow or halt the approval of data during the comparison process?
- Paper form process
  - How often do you receive new paper forms?
    - Do you ever run out of forms?
    - Is it a hassle to go and print more?
  - What is the difficulty level to manage paper compared to digital forms? In which ways is each one easy/difficult?

APPENDIX A

- What do you think about giving clients an online form to fill?
- How much of your time is spent inputting customer data versus serving food and items? (EBS workers only)
- What are the advantages and disadvantages of having to manage both paper and digital forms?
- What does the ideal data tracking system look like for you?

Questions for EBS Clients
- How long is your commute to EBS?
- After visiting EBS, how long does the food you received last?
- How often do you go to EBS to get food?
- What keeps you from returning to EBS? (for non-returning/infrequent families)
- How would you feel about returning members keeping a barcode that is scanned to speed up the process of collecting food? (like a library or rewards card)

-
Questions for PantrySoft Employees
- Have data visualization tools for PantrySoft been completed?
  - What tools do you have / what tools did you create?
  - Different spreadsheet types/formats?
- New family entries
  - Generating spreadsheet/paper forms at the end of the week
  - PantrySoft API?
- Barcode compatibility
  - Which barcode type does PantrySoft suggest?

- How would you suggest handing out barcodes to clients? Is there a website to get the correct barcode type?
- What happens if a family forgets/loses their barcode? Easy to replace with the same barcode?
- How long would it take for IT to implement features?
  - How easily can you implement spreadsheets (aka could we fit it into the remaining 5 weeks of our project)

COMMUNITY PROJECTS & PROGRAMS COMPLIANCE FORM

The Participant/Guardian should complete this form regarding program eligibility. Federal regulations require that we determine eligibility for participants receiving services paid for, in part, by State and Local Fiscal Recovery Funds (SLFRF), which are provided by the United States Department of the Treasury. The service, or contract, provider should retain this form for monthly reporting requirements as well as for on-site monitoring visits.

INFORMATION PROVIDED ON THIS FORM IS KEPT CONFIDENTIAL AND IS NOT SHARED WITHOUT YOUR PERMISSION EXCEPT AS REQUIRED BY THE U.S. DEPARTMENT OF THE TREASURY TO CONFIRM INCOME ELIGIBILITY OF PARTICIPANTS IN SLFRF FUNDED PROGRAMS. THE CITY OF WORCESTER HAS THE RIGHT TO VERIFY ELIGIBILITY.

Participant Name: _____

Address: _____
(Street, City, and **Zip Code Required**)

Ethnicity *(please select only one)*
- ☐ Hispanic or Latino
- ☐ Not Hispanic or Latino

Race *(please select only one)*
- ☐ White
- ☐ Black/African American
- ☐ Asian
- ☐ American Indian/Alaska Native
- ☐ Native Hawaiian/Other Pacific Islander
- ☐ American Indian/Alaskan Native *and* White
- ☐ Asian *and* White
- ☐ Black/African American *and* White
- ☐ American Indian/Alaskan Native *and* Black/African American
- ☐ Other multi-racial: _____

HOUSEHOLD INCOME INFORMATION Circle the household size below and proceed to question 2.
ARPA Income Limits as of May 2024
Higher of FY2024 HUD 65% Income Limits or 300% of 2024 Federal Poverty Guidelines

Household Size	1	2	3	4	5	6	7	8
Income Limits	$58,500	$66,885	$77,460	$93,600	$109,740	$125,880	$142,020	$158,160

1) For the household size circled above, **is your income <u>below</u>** the income amount listed?
Please circle   YES   or   NO

Do you partake in any of the following government programs? <u>Please check all that apply.</u>

- ☐ Children's Health Insurance Program (CHIP)
- ☐ Childcare Subsidies through the Child Care and Development Fund (CCDF) Program
- ☐ Medicaid
- ☐ Temporary Assistance for Needy Families (TANF)
- ☐ Supplemental Nutrition Assistance Program (SNAP)
- ☐ Free and Reduced-Price Lunch (NSLP) and/or School Breakfast (SBP) programs
- ☐ Medicare Part D Low-income Subsidies
- ☐ Supplemental Security Income (SSI)
- ☐ Head Start and/or Early Head Start
- ☐ Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)
- ☐ Section 8 Vouchers
- ☐ Low-Income Home Energy Assistance Program (LIHEAP)
- ☐ Pell Grants

Client received the following program or service(s) from our agency:

_____

I certify that the above information is true and correct to the best of my knowledge,

Participant/Guardian: _____   Date: _____
(signature)

APPENDIX C
Worcester County Food Bank Form

El Buen Samaritano Food Program Inc.

Zip Code	New Client	Fam Size					Principle Household Income Source (check only 1)					Federal Programs you can check all if the client receives all				
		0-4	5-17	18-64	65-up	Employment	Unemployed	SS Tran Cash	Other	None	SNAP EBT	WIC	School Brkfst	School Lunch	Summer Free Schl Lunch program

Ask the Client if this is the first at time at EBS or a food pantry

Ask how many children, adults, elderly, put the number on the box.

Cómo completar tareas con PantrySoft

How to Use PantrySoft to Complete Tasks

Registrar clientes	*Register clients*
Editar formularios	*Edit forms*
Sacar reportes	*Run reports*

EBS FOOD PROGRAM — **EL BUEN SAMARITANO**

WPI   **PANTRY SOFT**

Creado por el equipo de WPI en el verano de 2024
Created by the summer 2024 WPI team

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Clientes registrados (5 etapas)
Check-In A Returning Client (5 steps)

1. Haga clic en la caja que dice "Search For Client..."
   Click the "Search For Client..." box
2. Escanee el código de barra del cliente
   Scan the client's barcode
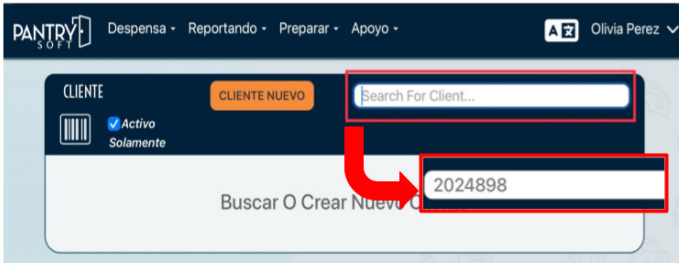
3. Deslice verticalmente hasta "Actividad" y haga clic en "Nueva Visita"
   Scroll down to "Activity" and click "New Visit"
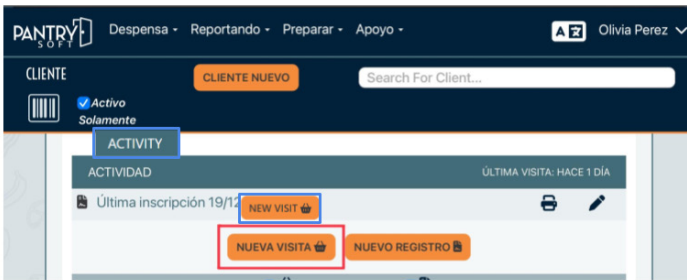
Clientes registrados (5 etapas)
Check-In A Returning Client (5 steps)

4. Seleccione "Comida" de la lista "Etiquetas De Programa"
   Select "Food" from the "Program Tags" list
5. Haga clic en "Guardar y Salir"
   Click "Save and Exit"
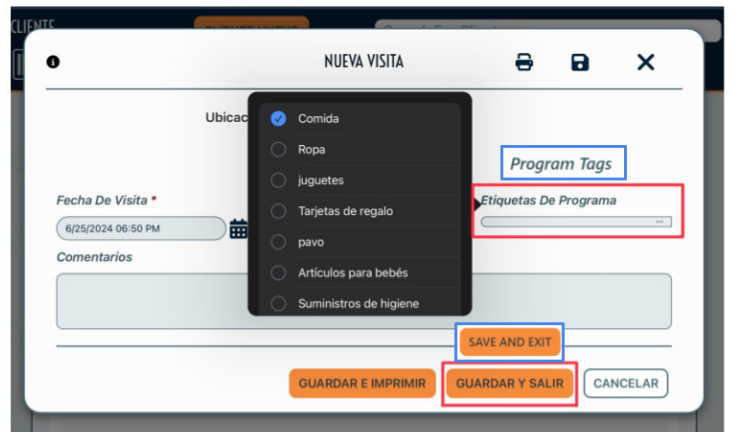
APPENDIX D

Registrar un cliente nuevo (14 etapas)
Register A New Client (14 steps)

1. Pida una tarjeta de ID
   Request an ID card
2. Haga clic en "Cliente Nuevo"
   Click "New Client"
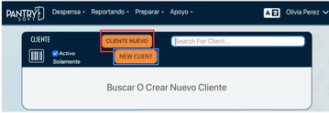
3. Seleccione "Número De Cuenta" y escanee un nuevo código de barra
   Select "Account Number" and scan a new barcode

4. Complete todos estos campos: Fill in the following fields:
   - Nombre de pila   • First Name
   - Apellido   • Last Name
   - Años   • Age
   - Raza/Etnia   • Race/Ethnicity
   - Dirección   • Street Address
   - Apt / Suite / Unidad • Apt / Suite / Unit
   - Código Postal   • Postal Code

5. Haga clic en "Guardar y Salir"
   Click "Save and Exit"

Registrar un cliente nuevo (14 etapas)
Register A New Client (14 steps)

6. Deslice verticalmente hasta "Actividad" y haga clic en "Nuevo Registro"
   Scroll to "Activity" and click "New Registration"

7. Complete la información: Fill in the following information:
   - Etnicidad   • Ethnicity
   - Raza   • Race
   - "Ingresos del hogar", seleccione el   • "Household Income", select the
     número de personas en el hogar   number of people in the house
   - "Para el tamaño del hogar elegido   • "For the household size chosen
     anteriormente…", seleccione "sí"   above…", select "Yes"
   - "Participa en alguno de los   • "Do you participate in any of the
     siguientes…", seleccione de la lista   following", select from the list
   - Principal fuente de ingresos   • Primary source of income
   - Firma del cliente   • Client's signature

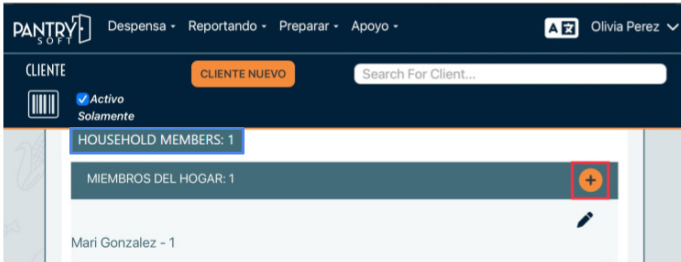8. Haga clic en "Guardar y Salir"
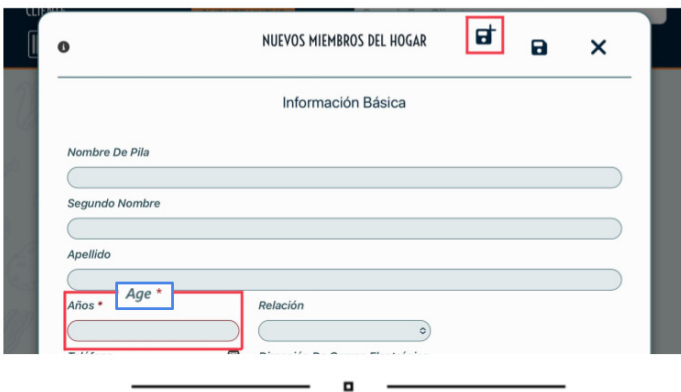   *Click "Save and Exit"*

APPENDIX D

Registrar un cliente nuevo (14 etapas)
Register A New Client (14 steps)

9. Deslice verticalmente hasta "Miembros del hogar" y haga clic en el botón circular naranja
    Scroll to "Household Members" and click the orange circular button

10. Ponga solamente la edad del otro miembro del hogar
    Put in only the age of another household member
11. Haga clic en el icono para añadir la edad de los otros miembros del hogar
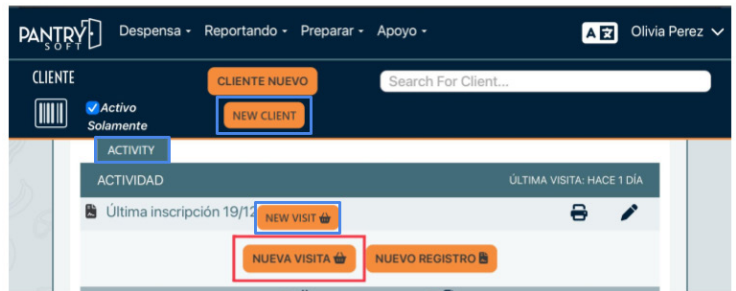   *Click the symbol in order to add another household member's age*

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Registrar un cliente nuevo (14 etapas)
Register A New Client (14 steps)

12. Deslice verticalmente hasta "Actividad" y haga clic en "Nueva Visita"
    Scroll down to "Activity" and click "New Visit"

13. Seleccione "Comida" de la lista "Etiquetas De Programa"
    Select "Food" from the "Program Tags" list
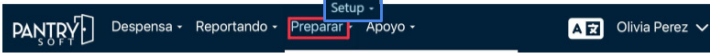14. Haga clic en "Guardar y Salir"
    Click "Save and Exit"

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APPENDIX D

Editar información requerida de los clientes
Edit Required Client Information

1. Haga clic en "Preparar" y entonces una de las opciones subrayadas
   Click "Setup" and one of the underlined options

Configuración de miembros del hogar: Editar los campos de información requeridos para cada persona en el hogar
Household Member Settings: Edit the required information fields for each person in the house

Listas de selección: Agregar nuevas opciones de selección a listas existentes o crear nuevas listas
Picklists: Add new selection options to existing lists or create new picklists

Preguntas demograficas: Editar o crear preguntas demográficas para cada miembro del hogar
Demographic Questions: Edit or create demographic questions for each household member

Preguntas de registro: Editar las preguntas que aparecen en la forma de registración
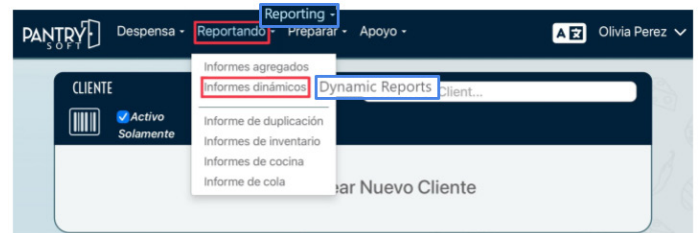*Registration Questions: Edit the questions shown on the registration form*

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Ver las cuentas clienteles activas (3 etapas)
View Active Client Accounts (3 steps)

1. Haga clic en "Reportando" y entonces a "Informes dinámicos"
   Click "Reporting" and "Dynamic Reports"

2. Seleccione "Todos los miembros del hogar (activos)"
   Select "All (Active) Household Members"
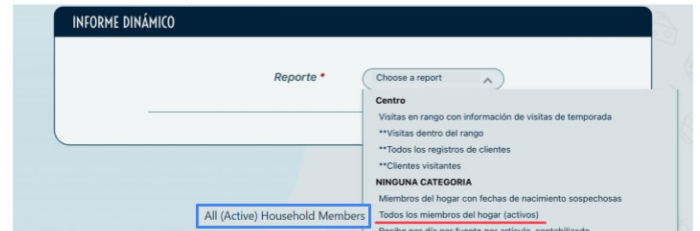
3. Haga clic en "Estado Del Cliente" y seleccione "Activo" para filtrar la lista
   Click "Client Status" and "Active" to filter the list

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APPENDIX D

Sacar el reporte del WCFB (4 etapas)
Generate the WCFB report (4 steps)

1. Haga clic en "Reportando" y entonces a "Informes dinámicos"
   Click "Reporting" and "Dynamic Reports"

2. Seleccione "Vistas en rango con información de visitas de temporada"
   Select "Visits in Range with Seasonal Visit info"

3. Seleccione las fechas y haga clic en "Sacar Un Reporte"
   Select the dates and click "Run Report"

Ojo: Si "Fecha Final" es igual a "Fecha De Inicio", el reporte muestra los clientes que visitaron esa dia
Note: *If "End Date" and "Start Date" match, the report shows the clients that visited that day*

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Sacar el reporte del WCFB (4 etapas)
Generate the WCFB report (4 steps)

4. Haga clic en cualquier botón naranja para ver el informe
   Click any orange button to view the report

CSV

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