GlobalHack VI Challenge Brief

Summary

On a cold night in the winter of 2015, more than half a million Americans were homeless.[1] About one third were sleeping on the streets, and the rest were in emergency shelters or non-permanent housing programs.[2] At that time, 2,871 of those citizens who were homeless were located in the St. Louis metro area.[3] Essentially, each county in the metro area has a single Continuum of Care (CoC) setup to help people who are homeless. Each CoC is made up of a broad alliance of public and private organizations who work together to end and prevent homelessness, including, but not limited to: shelters, food banks, energy assistance programs, permanent housing providers, and government departments. For example, more than 60 organizations and individuals make up the St. Louis City CoC.[4]

These agencies work tirelessly, but are limited by often antiquated software that prevents them from sharing resources, advice, and data. For example, men and women who are homeless may walk miles to find a shelter is full, and that shelter must manually call each other shelter to determine if there is an available bed. Similarly, people who are homeless must often obtain written documentation from one service provider and hand deliver it to another to receive services. Under the current system, detecting fraud is difficult, while those in the greatest need can easily slip through the cracks.

Your challenge is to build a software application that links together the organizations in St. Louis so they can more effectively and efficiently help people who are homeless in our region obtain permanent, safe, supportive, and affordable housing. However, your task does not end there, your solution should be scaleable so that it can help to end homelessness in cities across the United States and around the world. In short, your mission is to hack homelessness.

Background

Figure 1 below is an average experience for person who is homeless in the St. Louis metro area and in many areas around the U.S. Individual adults, youth, and sometimes entire households lose their homes because of the sudden loss of a job, sexual and physical abuse, addiction, medical debt, mental illness, or even something as small as an unpaid utility bill. Some stay with friends or family for a time, while others immediately end up on the street.

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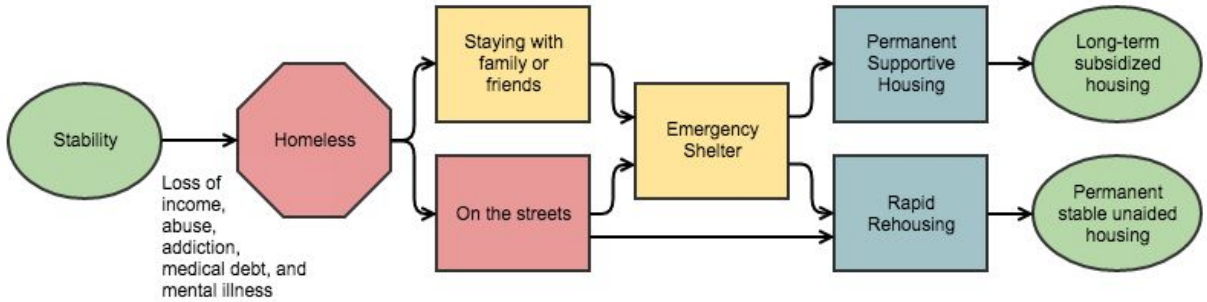
[1] HUD Point-in-Time Estimates by CoC.
[2] The State of Homelessness in America Executive Summary, pg 15.
[3] HUD Point-in-Time Estimates by CoC, includes East St. louis, Belleville, St. Clair County CoC, St. Louis County CoC, St. Louis City CoC, and St. Charles, Lincoln, Warren Counties CoC.
[4] St. Louis City CoC Plan.

The first goal is prevention or diversion. Approximately, 25% of our region's homelessness could have been prevented with a one-time payment of up to $600 in the form of: utility assistance, covering a month of groceries, or providing pro-bono legal services. Once these individuals become homeless, it becomes substantially more difficult and costly to get them back into permanent housing. According to the U.S. Department of Housing and Urban Development ("HUD"), the difference between prevention and diversion is when the CoC member service provider is intervening, not necessarily in the services provided. If the services are rendered to a household or individual who "precariously housed and not yet homeless," then it is prevention. Conversely, services provided to one who is "at the front door of a shelter or another program/system entry point seeking a place to stay" then it is considered diversion.

Nevertheless, once someone is already experiencing homelessness, one of the next steps is often to get him or her into an emergency shelter as soon as possible. An example of such a shelter is Biddle Housing Opportunities Center, which is managed by St. Patrick Center and Peter & Paul Community Services, two CoC partners. Getting those sleeping on the streets into a safe shelter is often the higher priority before other needs (e.g. food, healthcare, or job retraining) can be met. A list of shelters in the St. Louis region can be found in the Resources section below.

Once someone is experiencing homelessness, whether in an emergency shelter or not, the next goal is to determine how to get that individual or household permanently housed as quickly and efficiently as possible. HUD recognizes two permanent housing programs 1) Permanent Supportive Housing like Rosati Group Home which generally works to help members of the homeless community with persistent mental health issues, and 2) Rapid Rehousing: like Humanitri in St. Louis. Rapid Rehousing programs focuses on getting individuals and family who are homeless back into permanent unsupported housing as soon as possible, often in a matter of weeks, by utilizing CoC members who work with landlords to immediately rehouse those in need. Rapid Rehousing programs focus on short bursts of capital to help households get back on their feet rapidly, and early studies have shown promising results. Perhaps most important, Rapid Rehousing greatly reduces the damage of long-term housing insecurity that can heavily affect children and adults.

FIGURE 1: Typical Homeless Client User Flow



Nevertheless, even promising programs like Rapid Rehousing require multiple hand-offs between service providers, and this is just to provide housing. Providing healthcare services, personal care items, food, clothing, job training, and transportation requires the work of the entire CoC. Further, when individuals and family who are homeless relocate, neighboring CoC's need to work together to provide programs and services.

To aid in these efforts and properly collect data, HUD requires each CoC to select a Homeless Management Information System (HMIS), which serves as a sort of CRM (Customer/Client Relationship Management) of the homeless community. By selecting an HMIS, every services provider within that CoC is agreeing to use the chosen HMIS software to collect client-level data and record the provisions of housing and other services to people who are homeless or s at risk. Unfortunately, many HMISs are built on antiquated infrastructures with poor user interfaces, slow databases, non-existent networking ability, and weak data visualization techniques to spot trends and track progress.

Specification

Over the course of the weekend, you will build your own HMIS. At this time, do not worry about building a HUD compliant or HIPAA compliant system. More specifically, you and your team will develop an application that solves one or more of the below use cases. Feel free to build a web, mobile, or desktop application based on what you think is best for clients (people who are homeless locally) and service providers (CoC members). Be prepared to defend your decision before the judges. Your app must solve at least one of these problems that face most HMISs:

Problem 1: Prevention
Detect — or even predict — who in the community is at risk of becoming homeless before they end up on the streets, and rapidly connect them with services providers who can help. Remember that many families and individuals become homeless from sudden loss of a job, sexual and physical abuse, addiction, medical debt, mental illness, or unpaid utility bills.

Problem 2: Emergency Shelter
One of the most important jobs of the CoC is to get individuals and families off the streets as soon as possible. Your application should a) help CoC members find those in need who are sleeping on the streets, b) quickly and easily fill out intake paperwork, and c) find open beds in emergency shelters that fit the client's demographic. Meanwhile, your solution could also attack the problem from the client side, making it easy for those on the streets to easily find an open bed at a qualified shelter or signal to the CoC that they need help. Remember that while members of the homeless community often have cell phones, few have smart phones and many have a very limited budget for calling and texting. Furthermore, realize that determining bed availability in shelters in real-time, while simultaneously determining if a client qualifies for a shelter (some specifically only serve adult men or youth or abused women), is a constant struggle. Finding creative ways to cheaply and easily determine shelter capacity will greatly aid

your team in solving this problem (if you have the time and capability, don't be afraid to try a hardware solution add-on here). Finally, a consistent problem is determining what happened to clients who don't return to the emergency shelter. Come up with a creative way to help track behavior after clients transition away from the shelter for whatever reason.

Problem 3: Electronic Referrals/Data Sharing

Allow the CoC members who use your HMIS to electronically refer clients to other organizations within their CoC or a neighboring CoC. For example, an emergency shelter might wish to electronically refer a client to a housing program for which he or she qualifies. Ensure that every step of the hand-off process is as smooth and efficient as possible, keeping all parties informed of the progress being made. In the same vein, CoC members need to be able to see what services clients are receiving from other CoC members to provide effective support and to prevent rare cases of fraud. For example, a housing provider may wish to quickly determine what job skills a new client might have and further the job training that a client has received to date in the CoC. Therefore, a CoC member might want to access data collected at the client's prior shelter(s) and attendance records from local job training programs.

Problem 4: Data Visualization

Help the leaders of the various CoC member organizations determine how effective their efforts have been providing daily, weekly, and monthly snapshots, and trends over time. Furthermore, allow various service providers within a CoC to compare their key metrics to other organizations within their CoC so they can start replicating the most successful programs, and refer their clients to the most successful services providers in other verticals. For example, an emergency shelter might want to refer a client for much needed dental work, but they want to refer them to the dental provider with the best success metrics in the region. Finally, help an entire CoC measure themselves against their past metrics and those of other CoC's while holding constant for differences in population, economic activity, unemployment, and other key metrics.

Judging Criteria

There will be three rounds of judging starting on Sunday, October 23, 2016 at 9:45 a.m. In each round, your team's submission will be judged on the same criteria listed below. Each problem is worth an equal number of total points (30), and each problem will be scored based on three sub-categories: user-interface, creativity, and execution. A team can receive a score from 0 to 10 for each sub-category. An example judging rubric is listed below for reference:

Problem X: 15 Points Total

User interface:	0	-	10

How easy is your solution to use? Is your solution visually appealing? Does it require fewer user interactions than the competition, or automate processes that others require to be done manually?

Creativity: 0 - 10

How unique is your solution? Does your solution contain a feature that is useful, cost-effective, non-obvious, or not considered by others. Does your solution go above and beyond in some way that effective solves the problem and remove pain points for service providers and clients?

Execution 0 - 10

How well does your solution work? Is it technically sound? How fully does your solution answer the challenge posed at the beginning of the hackathon? How close to production-ready is your solution?

Teams that put together half-hearted attempts at all four problems will likely receive lower scores from the judges. We strongly advise focusing on only one of the problems first and optimizing scores to suit your team's strengths, before moving on to the next problem.

Don't feel pressure to move onto the a second or third problem until you feel you've optimally completed the problem at hand. At the same time, don't feel like you need to score a 10/10 on every sub-category before you move on to the next problem. Play to your team's strengths. For example, if you lack a designer, front-end developer, or UX specialist, realize that you'll probably lag a bit in the User-Interface sub-category, but make up those points in the Creativity and Execution sections. The judging criteria is built to allow teams of all shapes, sizes, and skill sets to succeed.

Resources

Below is a list of additional resources that will educate you about homelessness in St. Louis. Key resources (e.g. sample anonymized data sets of St. Louis homeless population and lists of regional shelters) may need to be used to complete some of the problems listed above, while additional resources simply serve to provide more information about the community. Do not feel required to read all of the additional resource links, as you will not have time to both learn everything *and* build a viable prototype.

Key Resources

1. Anonymized sample data of 300+ homeless persons in the St. Louis region *(including: standard data fields collected by service providers)*
    a. *Note: many variables in the sample data are stored in integer form where the integer stands as a placeholder for a "string." (e.g. Veteran members of the homeless community will have a variable for discharge status. If that variable is 1, then their discharge was "honorable," 2 = "General Under Honorable Conditions" and so on). An integer to string rubric can be found here and here.*
2. List of all St. Louis City CoC members
3. List of all St. Louis County CoC members
4. List of all St. Charles County CoC members
5. List of housing service providers for homeless in St. Louis City

Additional Resources

1. HUD primary HMIS page
2. HUD 2016 Notice of Funding Availability Detailing Program Priorities and Policy
3. Federal Interim Rule that created the CoCs across the US
4. Law creating the Rapid-Rehousing Program
5. Description/budget of the HUD Rapid Rehousing Program
6. List of success stories from Rapid Rehousing trials
7. St. Louis City CoC main page
8. St. Louis County CoC main page
9. St. Charles County CoC main page

Appendix

St. Louis County CoC Members

CAASTLC
St. Francis Community Services/Catholic Charities
Department of Mental Health - Housing
Doorways
Employment Connection
Epworth
Every Child's Hope
Family Resource Center
Good Shepherd Children and Family Services
Hazelwood School District
Humanitri
Legal Services of Eastern MO
Lemay Housing Partnership
Loaves and Fishes
Lutheran Family Children's Services
Mercy Neighborhood Ministries
MISI
Our Lady's Inn
Paraquad
Peter and Paul Community Services
Phoenix Family
Places for People
Riverview Gardens School District
Room at the Inn
Salvation Army
St. Francis Xavier College Church
St. Louis County Dept. of Health
St. Louis County DHS
St. Martha's Hall
Urban League
US Vets
Youth in Need
YWCA