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INTRODUCTION

The effective targeting of resources has become even more critical in a time of budget cuts coupled with a desire to limit the tax burden on Americans. "Housing First" initiatives around the country have shown proven cost-savings from providing housing to the chronically homeless. According to HUD guidelines, to be considered as chronically homeless a person must be:

> *"either (1) an <u>unaccompanied homeless individual</u> with a <u>disabling condition</u> who has been <u>continuously homeless for a year or more</u>, OR (2) an <u>unaccompanied individual</u> with a <u>disabling condition</u> who has had <u>at least four episodes of homelessness in the past three years.</u>"*[i]

In 2007, a white paper entitled the "*[Comprehensive Usage of Data Analysis in Developing and Supporting a 10-Year Plan](#)*[ii]" was written to share the initial results of a Housing First initiative in Quincy, MA. This paper touts the role of data driven performance measures in establishing community plans and providing an ongoing barometer of their efficacy.   Also shared within the paper are early findings from this ongoing work which demonstrated an average cost savings per client of $8,405 per year in medical and housing related costs alone simply by placing chronically homeless into supportive housing.

More recently, a study conducted by the *Massachusetts Housing and Shelter Alliance (MHSA)* discovered a total savings of $9,692 per client in Medicaid, shelter and incarcerations costs through the provision of Housing First units to the chronically homeless. In addition to these cost savings, 98% of the 638 people housed through this program indicated an improvement in their overall quality of life.[iii] The intent of this ongoing study is to assist regions that have a mature Housing First implementation plan in improving their classification of chronic homelessness while identifying other potential target populations that may offer a higher than average return on investment from targeted intervention efforts.

MATERIALS & METHODS

The Data Sources
To properly study the effectiveness of program policies and interventions targeted towards ending homelessness it is essential to survey the data assets that are available for each of the cohorts to be studied.   For homelessness, the primary data assets that are commonly utilized include data from the annual *Point In Time* count (PIT) which is conducted for the *US Department of Housing and Urban Development (HUD)* as well as data collected year round in *Homeless Management Information Systems (HMIS)*.   Each data set has its virtues and its deficiencies.

HMIS contains specific details on both the barriers to housing and the services being provided. HMIS do not account for all of the homeless however as only the homeless programs that are funded by HUD are mandated to participate. The annual HUD Point in Time (PIT) count is a nationwide effort to count all homeless individuals and households and accounts for the faith based shelter programs and others that do not receive HUD funding as well as for the homeless living on the street. The count is conducted on an annual basis during the last week of January so it inherently lacks the longitudinal data that HMIS has.
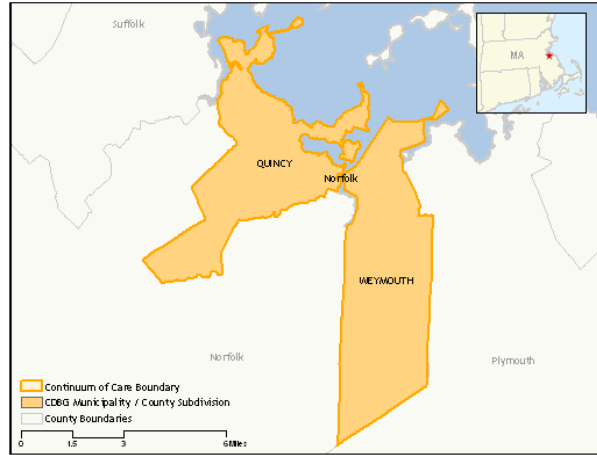
A secure data warehouse environment, [AgencyDash.com](#), was built by Simtech Solutions Inc. to collect this point in time and HMIS data and generate reports so that this analysis could be conducted.

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The Pilot Communities

Two of the largest individual emergency shelters in Massachusetts were selected for the purposes of this study. Both shelters are of comparable size and located south of Boston, MA yet within a 40 minute drive of the city. Both shelters are physically isolated from other individual emergency shelters which help to ensure that any analysis that is conducted is not being skewed by clients hopping between shelters.

Continuum - Brockton-Plymouth
Median Income - $71,113*
General Population Count – 494,000*

Continuum - Quincy-Weymouth
Quincy Median Income - $55,113*
General Population Count - 142,013**

Source: * US Census ACS Survey, 2007   ** US Census 2000
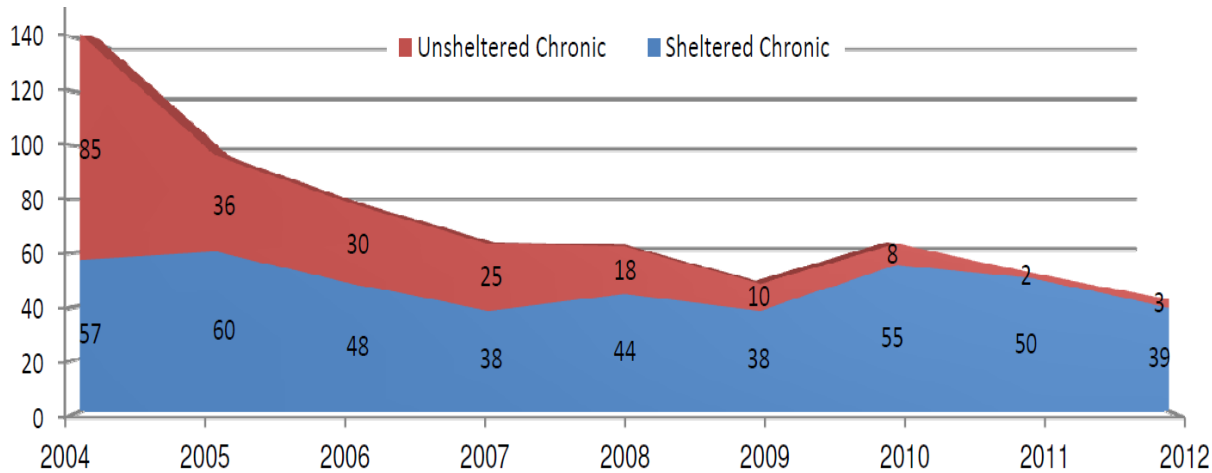
The Intent of the Study

This study was conducted with the goal of answering the following research questions:

- Does the practice of strictly adhering to the HUD chronic homeless definition cause unintended consequences when allocating housing resources?

- Are there frequent users of shelter services that are in serious need of focused attention that do not meet the HUD chronic homeless definition?

- Does weather play a part in influencing shelter demand?

- Is the demand for shelter beds consistent between communities?

- Does the data inform us about areas (both physical locations and practice areas) that are under or over-served?

- Do resource allocation strategies targeted towards serving clients coming in the front door tend to increase or reduce the average nightly demand for shelter beds?

- Does the data support the potential implementation of any cost-effective remediation strategies beyond Housing First for the HUD-defined chronically homeless?

RESULTS

The two major individual emergency shelters in the South Shore of Massachusetts, operated by *Father Bill's & MainSpring* (FBMS), found early success with Housing First initiatives. In 2004, the nightly bed occupancy at Father Bill's Place in Quincy averaged 125 clients yet in 2007, after the creation of 40 Housing First units, this figure dropped to an average of 110 clients. The point in time data demonstrates that the number of chronically homeless individuals in the region dropped as these Housing First units came online.
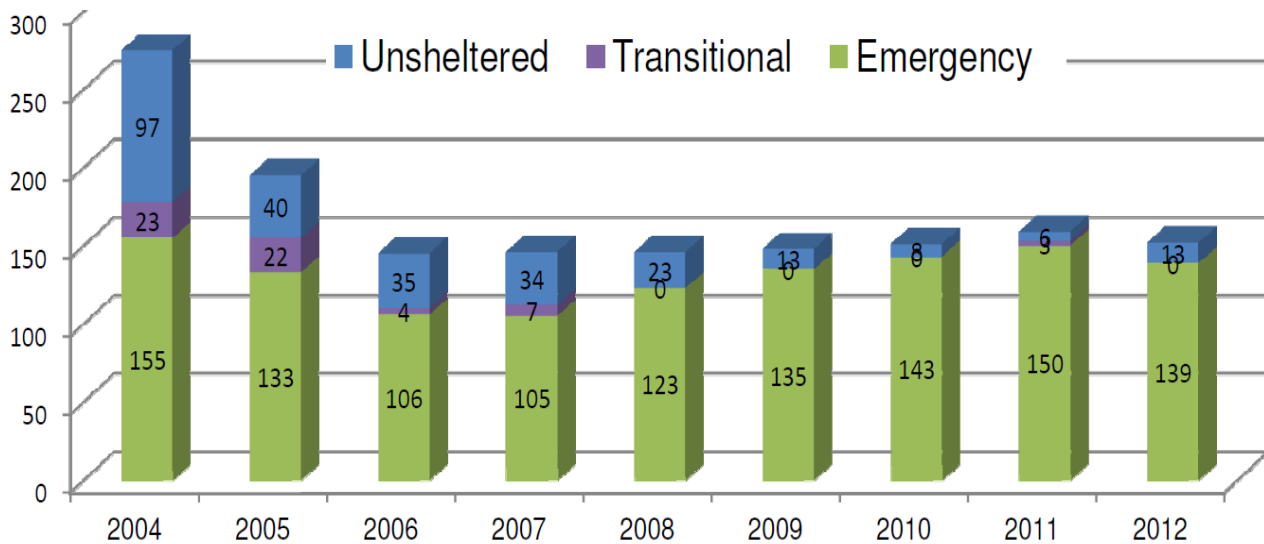
Exhibit A - Chronic Homeless Trends in Quincy, MA 2004 to 2012

Source: 2004 to 2012 HUD Point In Time Data

The total number of homeless individuals in shelter or on the streets showed a similar reduction from 2004 to 2007, from 252 to 139. Unfortunately, despite the continued success in reducing the counts of chronic homeless individuals in the region the count of homeless individuals has held relatively steady since 2006.

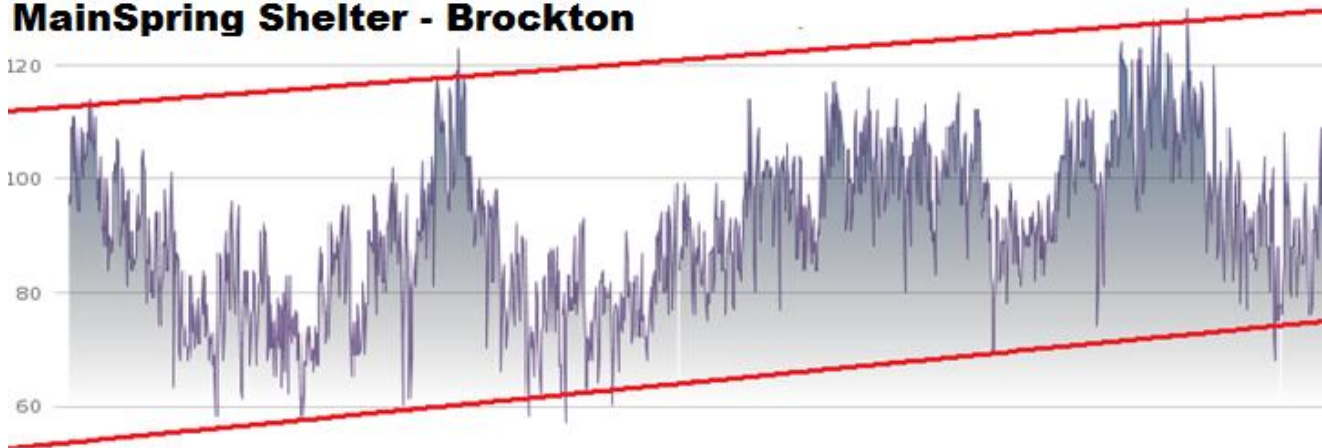*Exhibit B - Individual Adult Homeless Trends in Quincy, MA 2004 to 2012*

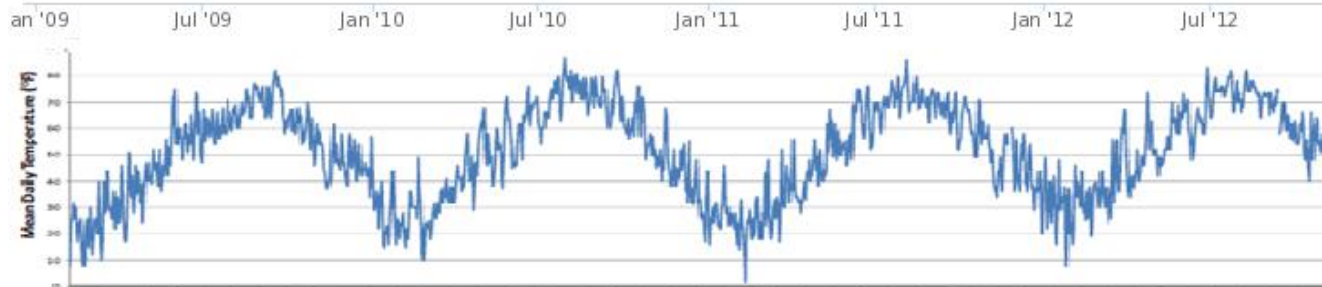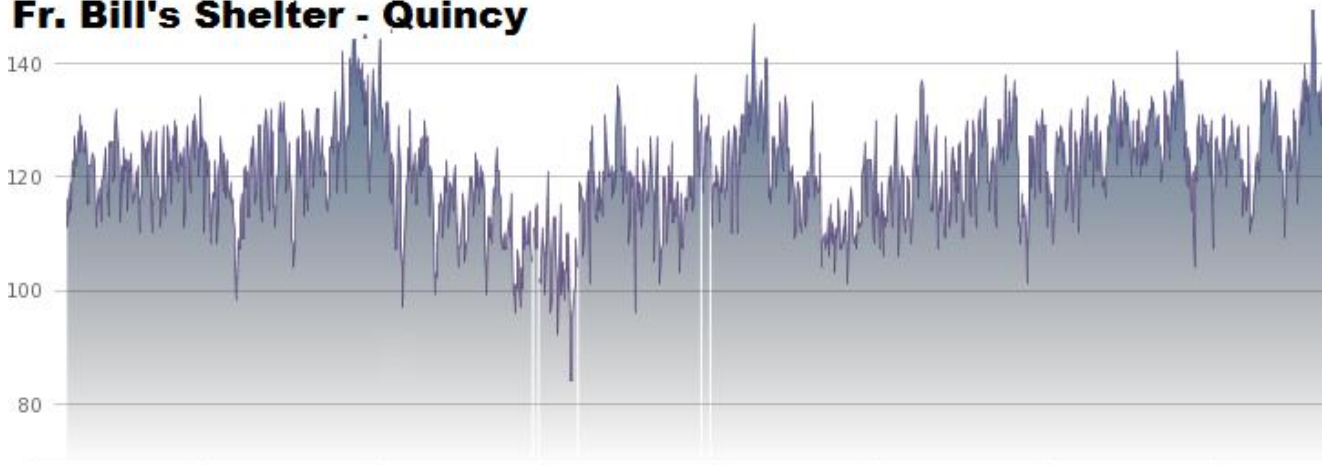**Daily Census Trends and Impacts of Weather on Shelter Utilization**

Data analysts at Simtech Solutions applied national weather service data to the ***daily*** census charts of both of the main shelters operated by Father Bill's and MainSpring to better understand the impacts of bad weather on shelter utilization.   The resulting charts, shown below, demonstrate that the shelter utilization in Brockton tends to increase as the temperature drops whereas the Quincy location shows little to no fluctuation in demand between seasons. The red lines on the Brockton daily census chart demonstrate that both the peaks and the troughs are trending upwards from one year to the next.

Exhibit C – Impact of Temperature on Daily Client Census

Data Sources: AgencyDash.com Daily Shelter Census and the US National Weather Service
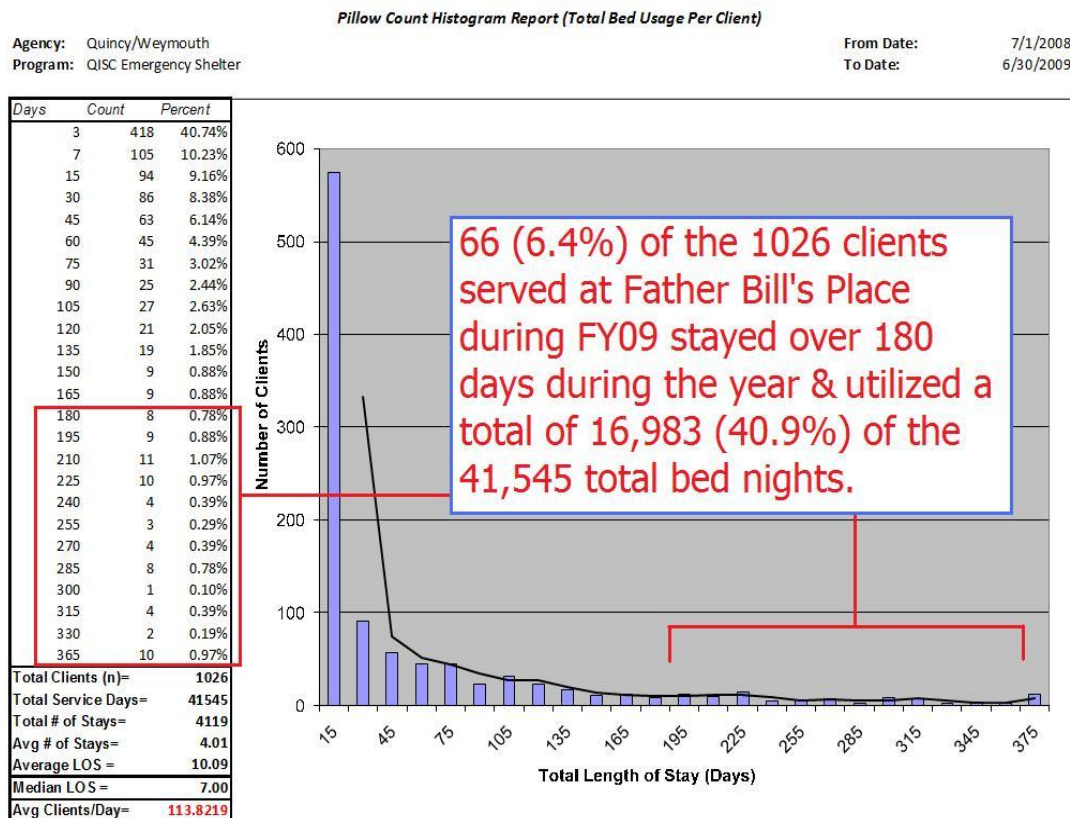
The average nightly demand for beds in Quincy consistently remained over 100 beds no matter how cold or warm it was outside. The peak demand occurs in the winter months and is roughly 140 clients per night. The lowest demand occurs in the summer and is roughly 100 clients per night. This demonstrates there is approximately 40% greater demand for beds in the winter than there is in the summer.

At the MainSpring Shelter in Brockton the peak demand is also in the winter and reaches roughly 120 beds. The summer months show a stark drop in daily bed utilization with several nights ranging between 57 and 70 clients being served. While Quincy had a 40% greater demand for beds in the winter, Brockton was showing demand rising anywhere between 71 and 110%.

This led us to look deeper at the stay patterns of clients staying at Father Bill's in Quincy to ascertain why there was less of a fluctuation in bed utilization. To help uncover this, a "pillow count" study was conducted to measure the total demand for shelter services from each client. The pillow count literally equates to the total number of nights each client's head hits a shelter pillow during a year. In this way, the guests that experience homelessness only temporarily can be delineated from those whom are frequent guests. Shelter staff members often know these guests by name and notice whenever they are not around.

When looking at the total bed utilization per client over a one year period we uncovered that 66 out of the 1024 clients (6.4%) had stayed for over 180 days. *A bed was provided 41,545 times during the one year period and this small cohort had utilized 16,983 (or 40.8%) of them.*

Exhibit D – Using Bed Utilization to Determine Chronic Users of Shelter Services

Data Sources: HMIS Bed Services Data run through the AgencyDash.com "Pillow Count" Report.

In looking deeper at this subpopulation we discovered that 36 out of the 66 clients were indicated to have had a disability. 18 out of these 36 (50%), circled in red in Exhibit E, were <u>not</u> considered chronically homeless by a case manager. These 36 clients cost an estimated $11,530/year/client to keep in shelter for a total cost of $415K and a cost to FBMS above what they are reimbursed by the state of $184,500. There were 30 clients that did not have a disability indicated and therefore may not need significant supportive services. The 30 clients that are heavy users *without* a disability cost a total of $11,263/year/client to keep in shelter for a total cost of 349K and a cost to FBMS of over 155K. This is a breakeven of $938/month in total and $417/month for just FBMS covered expenses in excess of the reimbursed rate from the state. The most expensive client without a disability, received $16,335 in total services for shelter alone with a cost to FBMS of $7,260 above what is reimbursed by the state.

Exhibit E - Heavy Users of Shelter Services Vs. Chronic Homeless Determination

Client ID	Pillow Count	Total Distinct Episodes	Gender	Chronic?	Disability?	Total Nightly Bed Rate @ $45	True Cost to FBMS at $20	Total Breakeven for Monthly Subsidy (All Sources)	Breakeven Costs for FBMS on Monthly Subsidy
156667	363	3	F	No	No	$16,335.00	$7,260.00	$1,361.25	$605.00
56674	363	3	F	No	Yes	$16,335.00	$7,260.00	$1,361.25	$605.00
46703	361	4	M	Yes	Yes	$16,245.00	$7,220.00	$1,353.75	$601.67
155920	361	5	F	No	Yes	$16,245.00	$7,220.00	$1,353.75	$601.67
144424	358	6	M	No	Yes	$16,110.00	$7,160.00	$1,342.50	$596.67
155572	357	7	F	No	No	$16,065.00	$7,140.00	$1,338.75	$595.00
156633	352	11	M	No	Yes	$15,840.00	$7,040.00	$1,320.00	$586.67
47768	352	12	F	No	Don't Know	$15,840.00	$7,040.00	$1,320.00	$586.67
156634	347	13	M	No	Yes	$15,615.00	$6,940.00	$1,301.25	$578.33
156770	337	20	F	No	No	$15,165.00	$6,740.00	$1,263.75	$561.67
156483	323	18	F	No	No	$14,535.00	$6,460.00	$1,211.25	$538.33
46681	322	11	F	No	No	$14,490.00	$6,440.00	$1,207.50	$536.67
155342	308	6	M	No	No	$13,860.00	$6,160.00	$1,155.00	$513.33
156954	305	19	F	Yes	Yes	$13,725.00	$6,100.00	$1,143.75	$508.33
157017	302	5	F	Yes	Yes	$13,590.00	$6,040.00	$1,132.50	$503.33
156870	301	17	M	Yes	Yes	$13,545.00	$6,020.00	$1,128.75	$501.67
155967	295	3	M	No	Yes	$13,275.00	$5,900.00	$1,106.25	$491.67
129535	285	21	F	No	No	$12,825.00	$5,700.00	$1,068.75	$475.00
156582	282	15	F	No	No	$12,690.00	$5,640.00	$1,057.50	$470.00
17878	281	11	F	No	Yes	$12,645.00	$5,620.00	$1,053.75	$468.33
111036	281	17	M	Yes	Yes	$12,645.00	$5,620.00	$1,053.75	$468.33
156680	279	13	F	No	No	$12,555.00	$5,580.00	$1,046.25	$465.00
55804	278	37	F	No	No	$12,510.00	$5,560.00	$1,042.50	$463.33
156627	278	5	M	No	Yes	$12,510.00	$5,560.00	$1,042.50	$463.33
155270	276	26	F	No	No	$12,420.00	$5,520.00	$1,035.00	$460.00
156666	270	16	F	Yes	Yes	$12,150.00	$5,400.00	$1,012.50	$450.00

DISCUSSION

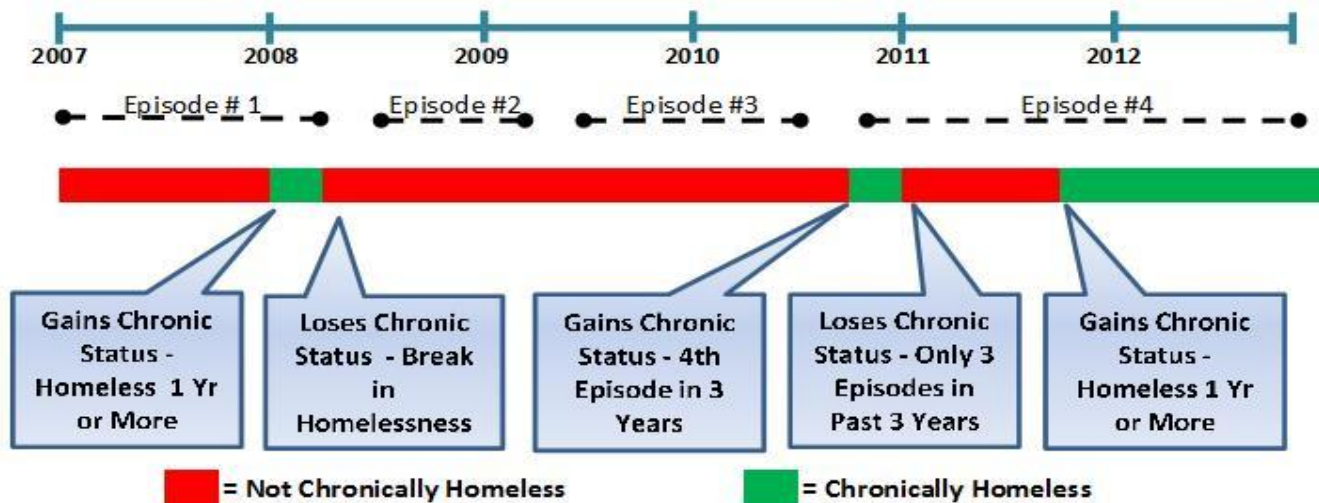**Benefits of Using Bed Utilization to Guide the Chronic Homeless Determination**

Using shelter utilization reports to identify clients that are heavy users of shelter resources appears to offer some advantages in helping to assist in the determination of chronic homelessness. One significant benefit of this approach is that the analysis is not predicated on the ability of a case manager, whom often lacks clinical training, to make an accurate disability diagnosis at first program entry. This practice also does not require staff to remember to go back into the HMIS software on the date that a client has been homeless for more than 1 full year, or has had their fourth episode of homelessness in the past three years, to indicate that the client is now considered chronically homeless. Similarly, clients can lose their chronic homeless status by having too few episodes in the past three years or having a break within one that would have otherwise been over a year.

To understand where these flaws in the definition are, it is important to reiterate and break down the Federal definition adopted by HUD which at the time of the study was…

> "either (1) an <u>unaccompanied homeless individual</u> with a <u>disabling condition</u> who has been <u>continuously homeless for a year or more</u>, OR (2) an <u>unaccompanied individual</u> with a <u>disabling condition</u> who has had <u>at least four episodes of homelessness in the past three years</u>."

The primary reasons cited for the implementation of this definition to be prone to error are:

1) *The term "episode" that is used within the Federal definition is undefined.* A definition that relies upon another term that is yet to be defined is open for interpretation. Can a disabled individual client be chronically homeless in one week if they were to stay at a shelter on Monday, Wednesday, Friday and Sunday but not be present on the other days? Is it four episodes of homelessness or one?

2) *A client's chronic homeless status is traditionally asked when the client enters the program.* Since a homeless episode can cover a long duration the criteria used to ascertain whether or not someone is chronic must be rechecked on a daily basis. Clients can "graduate" into chronic homelessness just as easy as they can lose their chronic status. The exhibit below demonstrates how a client can gain and lose chronic status over time based on the Federal definition.

While this client has demonstrated a significant need for ongoing shelter services he or she would be considered as not being chronically homeless during this six year period more than he or she would be considered as chronically homeless. Bed Utilization reports leave less room for interpretation than the current chronic homeless definition and can be useful tools in supporting resource allocation strategies such as Housing First.

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[i] *Defining Chronic Homelessness: A Technical Guide for HUD Programs*, September 2007

[ii] Simmonds, Matthew; Yazwinski, John. *Comprehensive Usage of Data Analysis in Developing and Supporting a 10-Year Plan*

[iii] Brigham, Thomas. *Permanent Supportive Housing: A Solution-Driven Model*, January 2013.