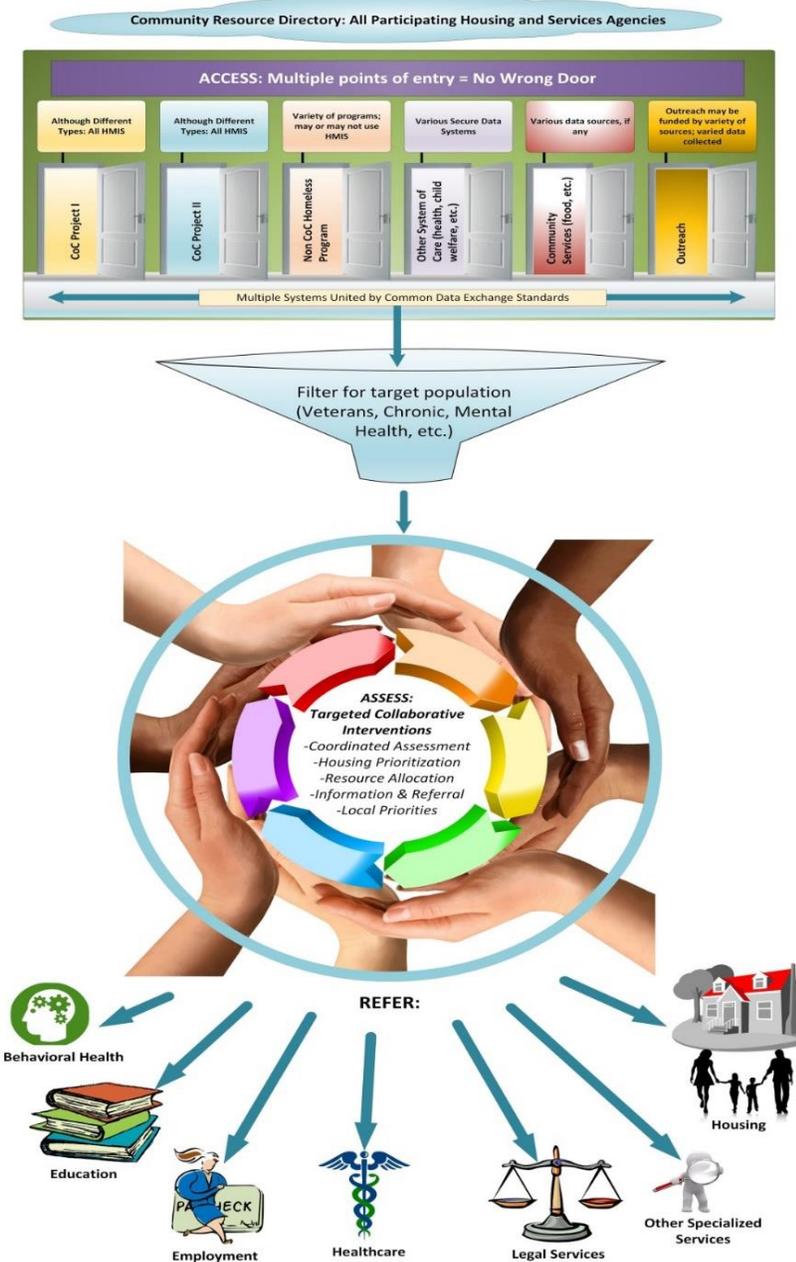


CONNECTING A FRAGMENTED SYSTEM

An underlying premise of the “continuum of care” (CoC) is that there should be a connection between providers to support a coordinated response for each person in need. The image below illustrates the various potential points of entry into a CoC and how these could ideally be integrated into a single response framework.



“Coordinated Entry” is a key strategy defined within the [Opening Doors Federal Strategic Plan to Prevent and End Homelessness](#) that is aimed to connect the work of community agencies. There is an obstacle to overcome with this strategy however in that the various providers in an area tend to have different operational requirements. This necessitates that they use software tailored towards their needs which in turn creates data silos that need to be broken down for a truly coordinated entry system, with “no wrong door”, to be deployed. Fortunately, the *Service-Oriented Architecture (SOA)* development practices described in the recommendations that follow, along with the practices described in the [White House Digital Government Strategy](#), can be used to overcome this obstacle.

WILL COORDINATED ENTRY IN A SINGLE SOFTWARE WORK FOR YOUR REGION?

Coordinated Entry using a single system is a simpler approach than deploying an integrated framework but it may also be short-sighted. Factors to be considered when deciding if a “one-size fits all” approach will work in a region include:

- **Are there agencies that serve clients beyond the footprint of a single region?** If yes, then this means that, in order to participate, they will likely need to use multiple software systems to manage their client interactions and account for the work being done as an agency.
- **Are there other geographic boundaries, other than HUD CoC boundaries, to consider?** The boundaries of the Federal partner agencies do not align. While all agencies within a HUD CoC might be able to participate in the same coordinated entry system there may be other providers within the same VA , PATH/DMH, ESG entitlement, or other area type that may be excluded.
- **Does the response framework include projects that have a presence outside of the HUD CoC?** Forcing the usage of a common system inadvertently creates barriers for cross-region collaboration. If a client migrates between one region, and another region that uses different software for coordinated entry, then there would no longer be a means for cross-region coordination amongst case managers or clinicians.
- **Do any agencies have specific operating needs that are different than those of their peers?** A shelter needs bed management systems, a multiservice agency needs eligibility determination tools and check payment systems, a legal services provider needs case management, etc..
- **Is the CoC considering merging with another CoC that uses a different HMIS?** If yes, then this inherently suggests that at least one of the CoCs will need to switch HMIS vendors.
- **Do all of your service providers participate in HMIS?** If not, then there needs to be a way to include these agencies as well if coordinated entry is to be truly comprehensive, regardless of whether or not they receive HUD funds.

THE ROLE OF SERVICES-ORIENTED ARCHITECTURE IN COORDINATED ENTRY

If you answered “Yes” to any of the questions above then a [Service-Oriented Architecture \(SOA\)](#) should be considered for your community as this software development practice enables disparate systems to work cohesively with one another. SOA is a software design practice in which discreet software applications that are specifically designed for a task (ie housing match, reporting, case management, or inventory management) can communicate with other discreet software applications via established communications protocols.

These exchange protocols, often referred to as *Application Program Interfaces (APIs)*, define both the method of data transmission and the format in which it is received. There is already the foundation of a common framework including the following list of the currently available APIs and exchange formats that are available for HMIS software vendors:

- [HUD Comma Separated Variable \(CSV\) Version 5.1](#)
- [HUD eXtensible Markup Language \(XML\) Schema](#)
- [Annual Homelessness Assessment Report \(AHAR\) XML](#)
- [HUD Point in Time API](#)
- [Region Designation Web Service](#)
- ESG CAPER Results API

What is missing from this list, and from HUD’s [HMIS Data Exchange Resources](#) page, is a “Closed Loop Referral API”. This would allow staff from a provider that happens to use one application to refer a client, whom has provided his or her consent, to a project being administered by a separate agency that uses a different software application. The Referral API, if commonly supported, would allow for referrals to be sent and the decision on acceptance passed back to the provider who submitted the referral.

RECOMMENDATION #1 – IMPLEMENT WEB SERVICES FOR REFERRALS

Below is an excerpt from the VA HOMES Referral Form which demonstrates how referrals are currently being processed. This is a common “shortcut” approach to accounting for the work done with a client. This approach fails to take advantage of the fact that these figures can be derived if vendors were to automate the referral process altogether.

Non-VA services		
17.	Basic services (e.g., food, clothing, transportation)	<input type="checkbox"/> 0. No <input type="checkbox"/> 1. Referral made and service initiated – no further follow-up needed. <input type="checkbox"/> 2. Referral made; will continue monitoring of care
18.	Non-VA housing	<input type="checkbox"/> 0. No <input type="checkbox"/> 1. Referral made and service initiated – no further follow-up needed. <input type="checkbox"/> 2. Referral made; will continue monitoring of care

There are several limitations of this commonly used approach to tracking referrals:

- *The way dates are collected is not suitable for reporting.* Dates are not associated with the date each particular referral was made. There is also no tracking of the date of the decision to accept or reject the referral. Instead, there is often just one date for the day the staff member created or saved the “referral tracking assessment” (or equivalent) was built in their system to capture this information.
- *This approach requires VA staff to follow up on the status of each referral.* If the follow up is not done then the actual status of the referral is left open and the staff never knows if the client received the services that he or she needed.
- *There is no true feedback loop.* This only supports two different referral decision types. If a client is rejected it is important to know the reason why as this will help prevent bad referrals from occurring in the future. Perhaps the target of the referral no longer provides the particular resource or service that was requested, eligibility requirements changed, or the resource is currently unavailable. Having a closed feedback loop prevents bad referrals which saves everyone time.
- *Data entry is required by both the VA and by the target agency.* Again, it is about saving time which in turn saves money.
- *Client consent is not integrated into the process.* There is no mechanism to facilitate the sharing of information between HMIS and HOMES (or vice versa). The need for this was recently expressed in an article from Streetwise in Chicago which can be found [here](#).

USE CASE #1 – TRACKING CLIENT REFUSAL OF HOUSING

Mayor Marty Walsh, along with mayors throughout the country, committed Boston to the [Mayor’s Challenge to End Veteran Homelessness](#). In support of this and other similar efforts, groups of clinicians, case managers and others work together to house these veterans.

On a quest to get to end homelessness among veterans, some people on the by-name list struggle to take offers of housing. Sometimes those most in need repeatedly refuse housing until they are indeed ready. This could be tracked with the help of the Referral API as the status of “client refused” can be sent back as part of a response message. Some communities track referrals using categories such as open/pending, enrolled, no show, waitlist, diverted, client refused, and inappropriate referral. Identifying clients that are regularly “refusing” housing allows the region to focus on these individuals and these data help defend a region’s inability to get to zero homeless.

USE CASE #2 – POOR DATA QUALITY FOR EXIT DESTINATION & PRIOR LIVING SITUATION

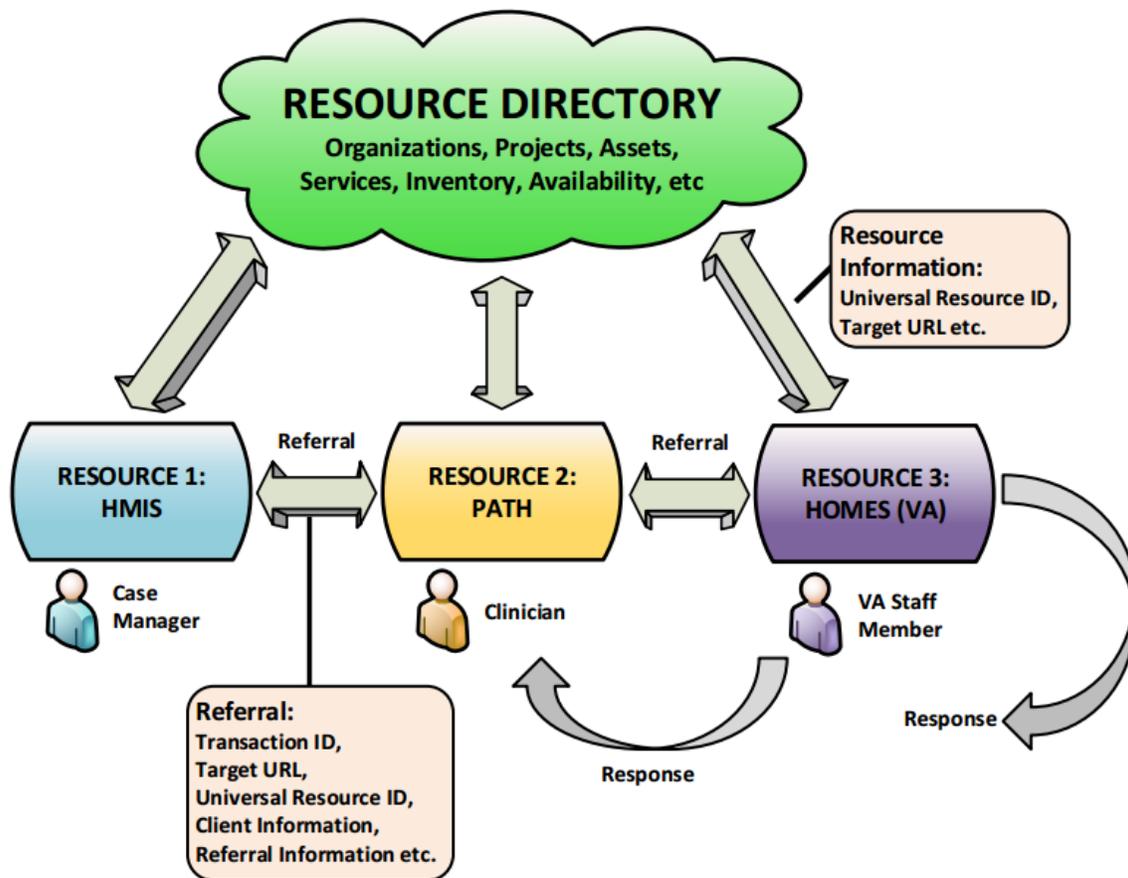
Jen Flynn from Boston’s Department of Neighborhood Development performed an analysis of the exit information for the 165 veterans that were served in Boston in February and March of 2015. Of these clients, 73% of the leavers had missing information on the client’s exit destination. It is common for emergency shelters to miss the opportunity to collect exit information on people leaving shelter, as that is often the nature of emergency shelter programs. An automated referral process would improve this data quality as the referral process itself can be used to designate a person’s exit destination. Whether or not the person actually obtained and maintained the housing can also be tracked once the link is made between one project and another.

USE CASE #3 – POOR INFORMATION ON LENGTH OF STAY

The average length of time homeless for a project can be greatly skewed by a single record that is inadvertently left open well after the individual or family has left a project. If a Referral API was adopted then this, along with edit checks in the HMIS software, could help prevent clients from being enrolled in multiple residential projects simultaneously. The acceptance of a referral in one residential project could help force the exit from the project that referred the client over.

PROPOSED RESOLUTION

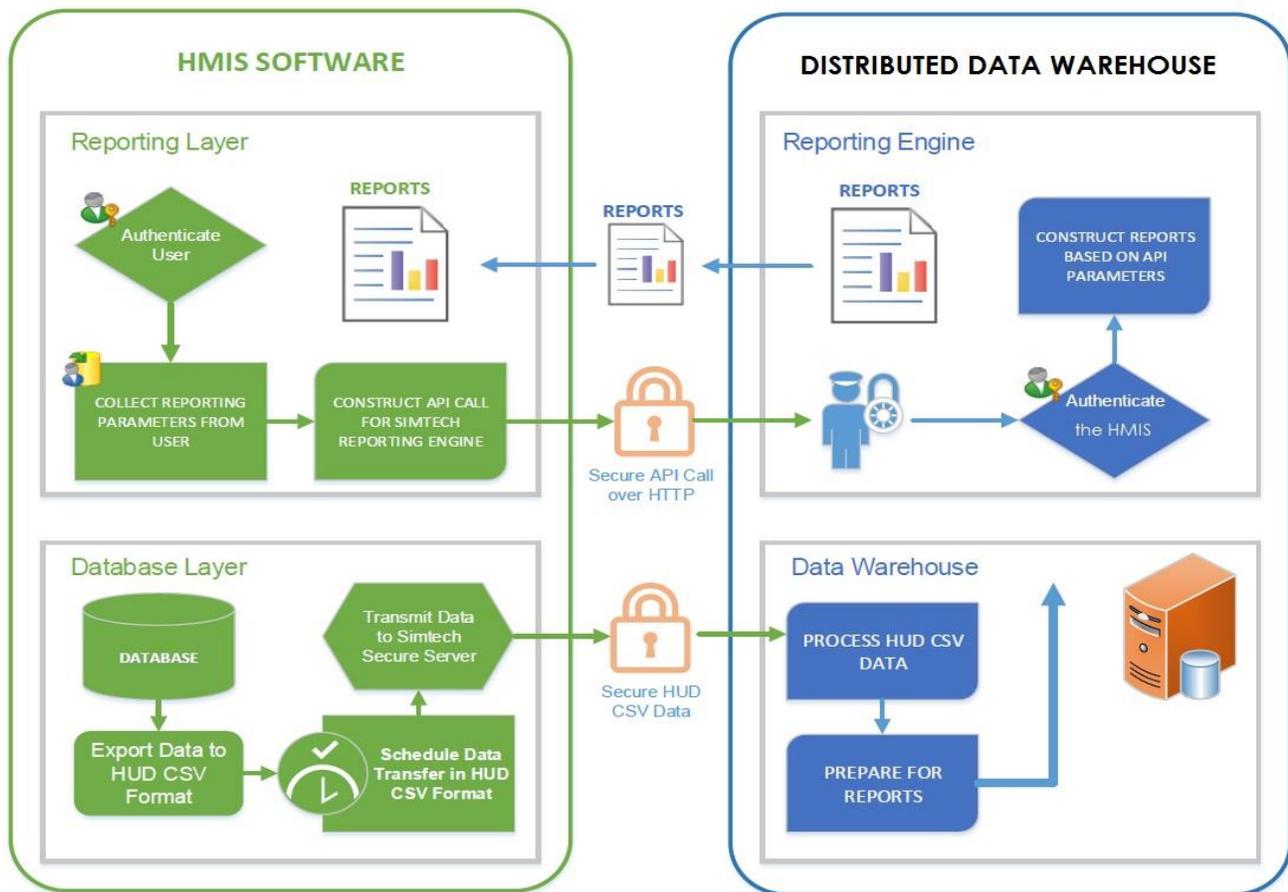
Adopt practices that allow for true coordinated entry without regard to the system being used by the organization the person in needs presents him or herself to. The image below is a demonstration of how a “cloud of resources” (such as the one defined by the Code for America Ohana API) can be used to act as the switchboard between “in network” software vendors. This, along with a commonly supported Closed Loop Referral API (which could potentially use the HMIS Open API as a starting point), would allow for the non-profits and government organizations that use these software products to work seamlessly together without forcing all non-profits in a region to use the same software.



RECOMMENDATION #2 – USE A DATA WAREHOUSE FOR REPORTING

The [Opening Doors Federal Strategic Plan to Prevent and End Homelessness](#) stipulates the need to “create a common data standard and uniform performance measures if feasible” and to “encourage the dynamic use of state and local data warehouses.”

Data warehousing is a SOA practice that is facilitated by the adoption of automated data export from the source HMIS provider(s). Data is provided in either of the published HUD exchange formats (either CSV or XML) and prepared for reporting readiness within the warehouse. Once processed, users are able to pull reports either by logging into the warehouse and entering in the report selection criteria. Vendors can also support a *Report Call API*, illustrated below, to request reports from the warehouse without ever having to leave the HMIS.



An HMIS data warehouse allows flexibility for agencies and projects to use the data system that works best for them while also enabling the CoC to be compliant with HUD reporting.

Data warehousing also allows HMIS software vendors to offload the reporting requirements to another vendor that is focused primarily on managing a data warehouse. This allows them to focus on the case management and operational tools required by the agencies that use their software rather than having to deal with the distractions of constantly changing Federal reporting requirements. There is an “economies of scale” from developing and managing a single reporting environment that can be shared with multiple HMIS vendors. In Massachusetts alone there are currently six different HMIS vendors. Without a data warehouse, each vendor has to accurately code every single Federally-required report and the state will never be able to obtain a comprehensive picture of homelessness.

RECOMMENDATION #3 – ENROLL CLIENTS AT A PROJECT LOCATION

On July 1, 2015 the Mayor of Northampton, MA, David Narkewicz, signed on to the [Mayor's Challenge to End Veteran Homeless](#). Before he could commit to this however he needed to be able to establish baseline counts of homeless veterans in his city. Unfortunately, this is not an easy task with the current set up of HMIS as there is no accounting in HMIS for cities. Nor is there accounting for ESG entitlement jurisdictions, school districts, census tracts, Department of Mental Health regions, congressional districts or any other region type that might be of interest.

The new HUD HMIS data standards include questions where staff would designate both the CoC ID and the VAMC Code attributed to the region in which a client is being enrolled. However, regional boundaries can shift over time and, unless the regions can be recast on the fly, then reporting figures that were used for prior to the change(s) cannot be compared to figures from after the change. For example, San Diego CoC used to be just the city of San Diego but later expanded to include all of San Diego County. This creates an additional step to update data and another opportunity for inaccurate reporting.

The image on the following page is an example of how VA and HUD jurisdictional boundaries can be quite different. The image to the bottom left shows the four VA VISNs that comprise Illinois and the image to the bottom right shows how Illinois is divided into 21 HUD CoCs. An exact physical location can be attributed to both a VA region and a HUD region whereas any multi-site project, which lacks a distinct physical location, cannot be attributed to a particular region given that the operating locations can be across boundaries from one another.

Exhibit 5-5: VA and HUD Jurisdictional Boundaries for Illinois



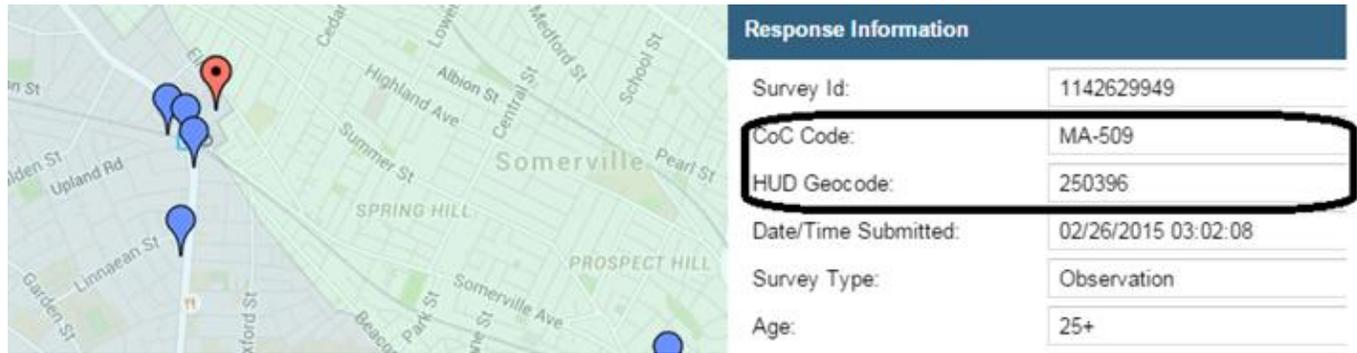
SOURCE: Sharing Data on Homeless Veterans, VA Homeless Management Information System – DRAFT, Sep 2012.

PROPOSED RESOLUTION

If clients are enrolled into a project at a particular location, reports could then be run by project or by site without requiring fake projects to track this. Clients that are enrolled into a project at a physical location (ie not the location of the admin office as is often instructed) can be directly attributed to region(s) using the [Region Designation Web Service](#).

The image below is from the 2015 point in time count for the two CoCs of Cambridge and Somerville, MA. The teams went out together armed with smart phones that had the [HUD Point in Time Mobile app](#) downloaded on them. Because the phones have built in GPS, and these GPS coordinates can be attributed to a CoC, the teams did not have to concern themselves with the invisible boundaries between their two cities.

The image below shows the pinpoint accuracy of the designation of MA-509 which is the CoC ID for Cambridge.



If CoCs take HUD’s encouragement to merge then, with this approach of enrolling clients into a project at a physical location, there is no massive data migration required. The operating locations are simply reassigned to the new region type. The assignment of regions can also be done automatically during report run-time through the usage of the *Region Designation Web Service* developed by Simtech Solutions to assign GPS coordinates to regions of various types. This web service can take any GPS coordinates passed to it, identify the CoC and census tract that these coordinates fall within, and return this information back to the requestor.

RECOMMENDATION #4 – MAKE RESOURCE INFO EASILY ACCESSIBLE

The availability of assets such as beds can also be shared with the resource directory and consumed by all “in network” software vendors. An example of this in action can be seen from the free *Show the Way* mobile app shown to the right. In this image, the app is consuming aggregate data produced from Foothold HMIS in New Jersey which shows the number of beds for the project, the number that are occupied, and the number that remain vacant.

Having this information can help prevent someone from initiating a referral to a resource that is not available, saving travel time and reducing the chances of re-traumatizing someone by creating a false expectation.

Information and referral systems such as Show the Way are a stepping stone to a full-blown coordinated entry system. Legal and/or technical hurdles are barriers to be identified and addressed when adopting a true coordinated entry system where sensitive client information may need to be passed from one agency to another. Public-facing resource directories can provide a decent alternative while these hurdles are being overcome.



RECOMMENDATION #5: IMPROVE DATA QUALITY

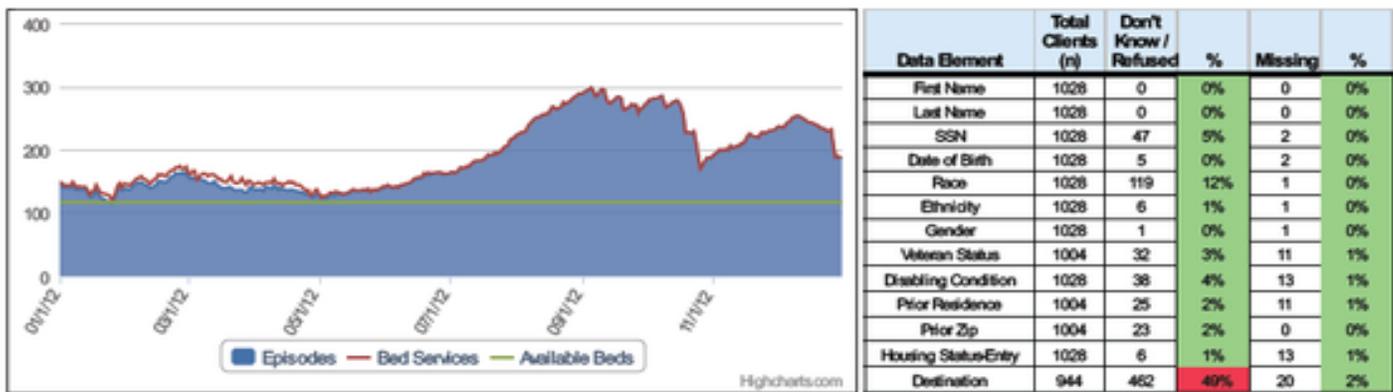
System level performance measures, used to determine how well a community is doing in its response to homelessness, require data from across a region to be gathered into one place and reported over. Other reports, such as the Annual Homelessness Assessment Report (AHAR) are primary tools used by HUD to demonstrate the need for funding to Congress. For the performance measures and AHAR to have any credibility there needs to be assurances that the data being reported over is of sound quality.

PROPOSED RESOLUTION

Poor data quality needs to be addressed through a process of both remediation and prevention. Ongoing data quality monitoring helps ensure that program staff are entering the data in a timely and accurate manner. The image below is an example of a reporting tool that can help administrators quickly determine if the data being reported over is of sound quality. There needs to be standardization around both the data quality monitoring tools and the guidance provided to regions regarding how these tools should be incorporated into their policies and procedures.

TestOrganization1

Emergency Program



RECOMMENDATION #6: USE EVIDENCE, NOT SELF-REPORTED DATA

OVERVIEW

Assessment tools such as the Vulnerability Index are being introduced throughout the country as a means of prioritizing people for housing opportunities. The issue with this approach is that it is relying upon self-reported information which can be unreliable. This is especially true when working with people with histories of trauma where memory is impacted and also in situations where if a person perceives that "stretching the truth" will help his or her chances of receiving subsidized housing. These assessment tools also create an additional data entry burden on staff.

PROPOSED RESOLUTION

Put empirical evidence to work by following the guidance within "The Review of the Tools and Techniques Used to Prioritize Clients for Limited Housing Resources". Data beyond what is captured in HMIS, such as Medicaid expenditures and CORI information, should be incorporated in order to further build up each client's profile using information from trusted sources.