Prepared by InterGroup Services, Inc. for the
Greater Baltimore HIV Health Services Planning Council

Ryan White Title I Service Utilization in the Baltimore Eligible Metropolitan Area

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1. EXECUTIVE SUMMARY

This report analyzes the utilization of HIV/AIDS-related services in and around Baltimore, Maryland, from March 2003 through February 2004. The services in question, which include medical care and support services, are paid for with funds provided by the federal government to the city of Baltimore under the Ryan White CARE (Comprehensive AIDS Resource Emergency) Act (the CARE Act). Through the CARE Act, the federal government funds treatment of last resort for people living with HIV/AIDS (PLWH/As) who would not otherwise receive care. In the case of the Baltimore area, these funds are intended to pay for services provided not only to residents of Baltimore City but also to residents of Anne Arundel, Baltimore, Carroll, Harford, Howard and Queen Anne's counties, which are grouped together as what the CARE Act refers to as an eligible metropolitan area (EMA).

This analysis, conducted by InterGroup Services, Inc. (IGS), a Baltimore-based consulting and project-management company, on behalf of the Greater Baltimore HIV Health Services Planning Council (the planning council), examines service utilization data submitted by area service providers and attempts to determine the frequency with which residents of one EMA jurisdiction cross into another EMA jurisdiction to receive services.

1.1 Multiple Jurisdictions

Because the Baltimore EMA's CARE Act funds are disbursed by the federal government to one jurisdiction (Baltimore City) but must pay for services rendered to residents of a total of seven jurisdictions, certain challenges arise. One is the difficulty of predicting where exactly PLWH/As living in one jurisdiction will seek care. This difficulty arises because of the likelihood that at least some PLWH/As will attempt to protect their privacy by seeking care in places where they are less likely to encounter friends, relatives or neighbors. The most logical flow of PLWH/As with privacy concerns is from the suburban counties, where communities are smaller and more intimate and where the number of treatment locations is relatively low, into Baltimore City, where there is a wide range of treatment facilities that see a much higher volume of clients. Another reason PLWH/As living in suburban counties may seek services in Baltimore City is the breadth of services available in the city. PLWH/As needing specialty services may find that those services are only available in Baltimore City.

Because of the possibility that at least some PLWH/As will seek treatment outside their home jurisdictions, a special category of CARE Act funds was created in this EMA some years ago: "services to surrounding counties" (STSC). These funds are supposed to pay, not for a specific service, but for the various services rendered to PLWH/As residing outside Baltimore City, even if they receive services inside the city. The purpose of STSC funds is to avoid the mismatch between dollars and clients that could arise if funds were disbursed along purely epidemiological lines, without taking into account the likely movement of at least some PLWH/As.

Naturally, the existence of the STSC funding category raises questions regarding the extent to which PLWH/As do, in fact, travel from the suburban jurisdictions into the city for treatment, a question that has not yet been conclusively answered in the Baltimore EMA.

1.2 Limitations of the Data

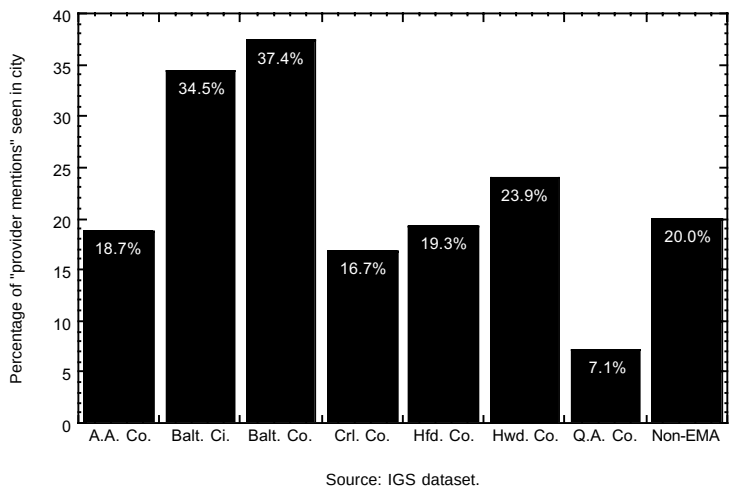
To answer questions about inter-jurisdictional travel by clients seeking STSC-funded services in the Baltimore EMA, IGS examined data reported by area service providers and attempted to

match CARE Act clients' places of residence with services received and providers visited. Unfortunately, since the data that exist are collected for purposes other than an analysis of this kind, certain limitations of the data made it impossible to construct a comprehensive picture of service utilization in the Baltimore EMA that included frequency of inter-jurisdictional movement. This report includes recommendations for changes to the data collection and organization protocols currently in place in the Baltimore EMA that, while initially time-consuming, would eventually result in data that would better support an analysis of this kind.

1.3 Analysis and Conclusions

Because of the way the provider-reported data are organized, the set of all clients was divided into two subsets: those who saw only one provider during 2003 ("single-provider clients") and those who saw more than one provider during 2003 ("multiple-provider clients"). This breakdown enabled a more detailed analysis than would otherwise have been possible. Also, in the interests of time and space, this report's analysis was restricted to only 10 of the approximately two dozen categories of services currently funded under the CARE Act in the Baltimore EMA. The 10 services analyzed were those ranked by the planning council at the FY 2005 priority-setting conference as the 10 most important:

Figure 1



1. Primary medical care
2. Substance-abuse treatment
3. Case management
4. Housing assistance
5. Oral-health services
6. Outreach services
7. Mental-health services
8. Emergency financial assistance (EFA)
9. Transportation services
10. Client-advocacy services

Data limitations notwithstanding, it was still possible to come to several preliminary conclusions about the nature of inter-jurisdictional utilization of CARE Act-funded services in the Baltimore EMA. First, it appeared that relatively few of the single-provider clients residing in the suburban jurisdictions sought services inside Baltimore City; ambiguities in the data organization made it impossible to determine an exact number, however.

Second, inter-jurisdictional movement by multiple-provider clients seemed much higher, although a direct comparison between single- and multiple-provider clients was not possible, due to the organization of the data. Still, it seems reasonable that someone visiting only one provider

might be more likely to do so close to home (assuming the client has no overriding privacy concerns), while someone who is already used to traveling to multiple locations might not consider it any great hardship if at least one of those locations were outside his or her home jurisdiction. A summary of multiple-provider clients' inter-jurisdictional movement is shown in figure 1. This shows each jurisdiction's clients' "provider mentions" taking place in the city. For example, the combined provider mentions of all 213 multiple-provider clients in Anne Arundel County funded under STSC, 18.7 percent of these provider mentions were by city-based providers. There is fairly heavy use of city providers by STSC clients, particularly among Baltimore Countians. Most interestingly, the graph also shows that there are some city-residing STSC clients, about a third of whom use city-based services. This is explained further in section 4.4.

Furthermore, since it appears to be the case that single-provider clients were in slightly better health than multiple-provider clients (i.e., they were slightly less likely to have progressed to AIDS-defined status), it may be that multiple-provider clients were in need of more specialized care, some of which is available in the Baltimore EMA only in Baltimore City.

It should be emphasized that these findings are inexact due to the difficulty of answering certain questions from the utilization data as they are currently reported and organized. Four changes to data collection and organization protocols, detailed in section 5.2 of this report, would vastly increase what future analyses could accomplish. These are summarized below:

First, devise a standard definition of a client's "visit" to a service provider, and impress upon all EMA service providers the rationale for adopting it, at least for the purposes of reporting service utilization to ABC and BCHD. Currently, each provider sets its own definition of a client "visit."

Second, enter data into the database in such a way as to preserve the connection between each service provided and the provider from whom it was obtained (e.g., provider code and service code could be combined at entry, enabling queries by provider, service or the combination of the two). Currently, codes are entered in the database for each type of service received and for each service provider visited by the client, but no link is established between the service and the provider from whom the service was received.

Third, modify the service provider coding system to provide unique codes for each physical location of multi-location providers (e.g., for a Baltimore City provider with a code of 0000, that provider's Baltimore County location could be identified as 0000-1, and so on). Some providers, such as Chase Brexton Health Services, have physical clinic locations in more than one jurisdiction. However, a single code is used to identify the provider in the database. Therefore, it is not possible to tell whether a client who received services from Chase Brexton received them at the provider's Baltimore City location or Baltimore County location.

Fourth, to reduce the chances for input error, exploit the full capabilities of spreadsheet and database software, in particular by setting it to disallow invalid entries such as nonexistent provider codes, ZIP codes, etc.

2. INTRODUCTION

Under the terms of the Ryan White CARE (Comprehensive AIDS Resource Emergency) Act, the federal government provides substantial funds to local jurisdictions for what would otherwise be the unmet needs of low-income people living with HIV/AIDS (PLWH/As) in areas particularly hard hit by the disease. These areas — each consisting of an urban center and its surrounding counties/localities — are called eligible metropolitan areas (EMAs). The Baltimore EMA consists of Baltimore City and Anne Arundel, Baltimore, Carroll, Harford, Howard and Queen Anne's counties.

As required by the CARE Act, local entities called planning councils set priorities for the allocation of these federal funds among various categories of health and other support service providers. Planning councils are made up of volunteer representatives of local government agencies, health-care providers and community members (including PLWH/As). In the Baltimore EMA, priority setting is the responsibility of the Greater Baltimore HIV Health Services Planning Council (referred to throughout as the planning council).

This report analyzes data collected by the Baltimore City Health Department (BCHD) concerning the utilization of HIV-related health-care services funded under the CARE Act. This analysis was conducted by InterGroup Services, Inc. (IGS) on behalf of the planning council.

CARE Act funds are disbursed, in the case of the Baltimore EMA, to the mayor of the city of Baltimore, to be apportioned to individual HIV-related service providers according to the priorities set by the planning council. Associated Black Charities (ABC) has been contracted as the "administrative agent" — to manage the funds on behalf of the mayor, receiving applications from, and granting funding to, area service providers.

One category of funds disbursed to some HIV-related service providers is not intended to pay for specific *services* but, rather, for various services provided to a specific category of *client*: PLWH/As residing in the Baltimore EMA but outside Baltimore City itself. This system of dividing funds first arose as part of an initiative intended to establish satellite clinics in outlying parts of the EMA in order to encourage PLWH/As to enter care earlier than they were otherwise likely to; today, this category of funds is used to pay for care provided to non-city residents at locations both inside and outside the city of Baltimore, since some county residents are known to travel for care on a regular basis.

The STSC category of funding remains in place, even though the network of satellite clinics did not take shape in quite the way that was envisioned, in recognition of the fact that funds intended to pay for HIV-related health care cannot be distributed based simply on an epidemiological model, but must take other factors into account. In particular, if HIV were an entirely non-stigmatizing disease, providing funding for its treatment would be a simple matter of directing funds to the health-care providers closest to patients' places of residence. Instead, since considerable stigma can attach to a known HIV-positive person in many communities, and since many of the suburban communities surrounding Baltimore are small enough that residents seeking HIV-related care close to home would face considerable risks to their anonymity, it is reasonable to assume that some county residents may choose to travel into Baltimore City to obtain HIV-related health care at locations where they feel that they are less likely to encounter friends, relatives or neighbors. In addition, the density and variety of providers in Baltimore City means that consumers needing certain specialty services may only be able to find them in the city,

even if those consumers would otherwise be willing to attend their local county health clinic or other suburban health-care provider.

Indeed, there is little question that some county residents seek HIV-related care in Baltimore City. However, one question that has not yet been satisfactorily answered is the *frequency* with which this inter-jurisdictional movement occurs.

The purpose of this report is to analyze where PLWH/As in the Baltimore EMA receive services, in support of an overall assessment of current funding priorities and allocations to specific service categories. Specifically, various CARE Act stakeholders in the Baltimore EMA have expressed a curiosity concerning the frequency with which EMA PLWH/As travel from the suburban jurisdictions into the city to receive HIV-related health care and related services. Although certain limitations of the available data, described in section 2.3, present obstacles to analyzing the frequency of cross-jurisdictional travel for care, this report offers some preliminary findings and recommends changes to future data collection that could help to answer questions relating to the frequency with which EMA PLWH/As move across jurisdictional boundaries to receive HIV-related care.

2.1 A Cross-jurisdictional Approach

The majority of HIV/AIDS cases continue to occur in urban areas, a term which in this case must be understood as referring to a much larger geographical region than that contained within the official boundaries of any particular city. Indeed, as fond of boundaries and borders as human society is, these imaginary lines mean nothing to the human immunodeficiency virus (HIV) and not much more to HIV-positive individuals in need of affordable health care. Territorialism and jurisdictional rivalries must not be allowed, therefore, to stand in the way of fighting the virus and providing care where it is needed.

This thinking is exemplified by the CARE Act's use of the concept of EMAs — as opposed to individual jurisdictions — for planning and funding. When thorny problems such as HIV/AIDS care are considered regionally rather than jurisdiction by jurisdiction, duplication of services — and the associated waste of money — can be avoided, while expertise and resources can be more easily and widely shared. The Baltimore EMA is a case in point: with a high concentration of PLWH/As and service providers in Baltimore City, but with additional clients in need of care residing in the neighboring jurisdictions, a jurisdiction-by-jurisdiction approach would require the inordinately expensive recreation of the density and variety of services available in Baltimore City in each surrounding jurisdiction. The relative expense per patient in the surrounding counties makes such a scenario impractical, to say the least. Instead, with funds provided for both city and non-city residents, as discussed above, it is possible for area clients in need of services to find a provider or providers suitable for their location and needs, regardless of place of residence.

Of course, such an approach has its complications. Constant care and attention is needed, in particular, to ensure that funds are spent according to need — that providers receive funds proportional to the numbers of PLWH/As they serve and the types of services they provide. In other words, how often and in which directions do the EMA's PLWH/As cross jurisdictional boundaries to receive CARE Act-funded services? And which services do they receive where?

As it turns out, these questions are easier asked than answered with the currently available data.

2.2 About the Dataset

As required by the CARE Act, service providers (e.g., clinics, hospitals, counselors, case workers, etc.) in the Baltimore EMA receiving CARE Act funds must make annual reports concerning the use of those funds to ABC. These reports include the client's universal record number (URN), the services provided and whether or not the service was covered by CARE Act Title I funds.

This information is entered into a computer database created and maintained in the software product, Statistical Package for Social Sciences (commonly referred to as SPSS). Since the information is organized by provider, in the event that a client receives services from more than one provider in the year in question (in this case, 2003), that client will be reported more than once in these data; for this reason, this dataset is referred to as "duplicated."

These "duplicated" data are then used to create a second dataset, this one organized by client. That is, each record in this second database represents one client and contains information on all of that client's visits to or use of service providers in the year in question. For example, one of these records might show that Client A received case-management services and primary medical care from Provider B and Provider C in 2003. Since no client is represented by more than one record, this dataset is referred to as "unduplicated."

For the purposes of this report, IGS was given access to the "unduplicated" dataset, which contained records for 1,285 individual clients who received at least one service paid for with STSC funds, regardless of the jurisdiction in which the client lived or in which the provider was located, during Ryan White fiscal year (FY) 2003, that is, March 2003 through February 2004.

2.3 Limitations of the Dataset

Unfortunately, certain information regarding the frequency of inter-jurisdictional travel by CARE Act-funded clients is not obtainable from either the duplicated or unduplicated dataset. This difficulty does not arise because the information in question is not being reported but because the reporting protocols and database organization were designed to serve different purposes from an analysis such as this one. However, the data collection that is being performed is fortunately comprehensive enough that it would be possible to make the information obtainable in the future with only a few small — if initially time-consuming — changes to provider reporting protocols and to ABC's and BCHD's database design and data entry process.

Given the research question, "how frequently do county residents come into the city for services, and for which services do they travel?" it is clear that obtaining an answer will be difficult when the three main categories of information that cannot be obtained from the data as they are currently reported and organized are:

1. How frequently services were provided.
2. Who provided these services (in the case of clients who saw more than one provider during the year).
3. The jurisdiction in which the services were provided.

In the first case, the reason that the currently available datasets do not show how often a service was provided is because of the use of non-standard units to report numbers of "visits." The reporting forms that providers submit to BCHD ask for the number of visits a particular client made to that provider, but each provider may quite reasonably define visits differently, depending on the provider's internal organization or billing/scheduling procedures. For example, a clinic

offering services from a variety of types of health-care professionals may be in the practice of referring to each patient's interaction with a different doctor, counselor or case worker as a separate visit, even if all occur under one roof, on the same day. What one provider refers to as four visits, then, may all have occurred on the same afternoon, while at another provider, four visits might refer to four discrete events taking place on four different days over the course of the year.

The second problem — the impossibility of determining which providers clients received services from — arises from the way certain categories of data are combined in the duplicated database. In short, to speed data entry, codes are entered for each type of service received, and codes are entered for service providers, but no link is established between the service and the provider from whom that service was received. For example, the database may show that a Baltimore County client visited the Baltimore County Department of Health and then Chase Brexton Health Services, and that the client received primary medical care and case management; given the way the database is structured, it cannot be determined which of this client's two services was provided by which of the two providers. As a result, it is only possible to say with certainty that a certain provider provided a certain service in the following cases:

- A client saw only one provider during the course of a year. For example, if the database indicates that a Baltimore County resident was seen at the Baltimore County health department only (i.e., by no other providers), and received oral health care, case management, legal services and primary medical care, it can be inferred that the client received all of those services from the county health department.
- A client saw more than one provider but received services unique to one of the providers he or she saw. For example, if the database indicates that an Anne Arundel County resident was seen at the Maryland Community Kitchen and the Anne Arundel County Department of Health, and received meal-delivery services and primary medical care, it can be inferred that the meal-delivery services were provided by the Maryland Community Kitchen and the other services were provided by the health department.

Compounding the difficulty of determining which provider a given service was obtained from, current data-entry protocols assign only one identifying code per provider, even in the case of those providers active in more than jurisdiction. This means that even if data collection and entry protocols were changed to more clearly associate services with providers in general, confusion would still arise in the case of multi-location providers as to which of those providers' locations the service was obtained from.

It should be noted here that these suggested changes to the data-collection protocols are in no way intended to denigrate the hard and careful data-collection work on the part of area service providers, ABC or BCHD. The most significant problems encountered in the course of this analysis do not represent carelessness or negligence but arise mainly because the data in question are collected for purposes other than answering the questions raised here.

3. JURISDICTIONAL PROFILE OF DATASET

Before commencing an analysis of inter-jurisdictional movement by CARE Act clients in the Baltimore EMA, it is worth considering how these clients are distributed across the seven jurisdictions of the EMA (and, as it turns out, beyond the EMA as well).

For the purposes of this analysis, IGS was given a dataset that contained records for 1,285 individual clients who received at least one service paid for with STSC funds, regardless of the jurisdiction in which the client lived or in which the provider was located, during FY 2003. Of the 1,285 clients represented in the dataset, 78.8 percent (1,012) are EMA residents. The breakdown of these clients by jurisdiction is as follows (see table 1):

Table 1
Baltimore EMA Ryan White Title I STSC Consumers' Jurisdiction of Residence, FY 2003

Jurisdiction	*Number (n=1,285)*	*Percent (%)*
Anne Arundel	299	23.3%
Baltimore City	150	11.7%
Baltimore County	245	19.1%
Carroll	43	3.3%
Harford	128	10.0%
Howard	123	9.6%
Queen Anne's	24	1.9%
Non-EMA jurisdiction	226	17.6%
Unknown*	47	3.7%

Source: BCHD data.

* Forty-two records were missing residence data, while five had invalid ZIP codes.

Strikingly, a full 17.6 percent (226 individuals) of the clients who received services lived outside the EMA, with jurisdictions of residence as shown in table 2. This sizable number of clients is spread across 13 Maryland jurisdictions and a handful of jurisdictions outside the state, so no one extra-EMA jurisdiction originated a particularly large number of clients who received services in the Baltimore EMA.

Nonetheless, the total number of non-EMA residents receiving treatment paid for by the Baltimore EMA's CARE Act funds is quite large. Under HRSA rules, no one living outside the Baltimore EMA (other than veterans) is eligible for treatment paid for by the Baltimore EMA's CARE Act funds; however, it is possible for non-EMA residents to be referred to a service provider in the EMA for a service not available elsewhere. In that case, the referring jurisdiction is then billed for any services rendered. Since it is doubtful that all 226 clients shown on table 2 were veterans, most were likely referred by jurisdictions adjacent to EMA jurisdictions, and the Baltimore EMA should have been reimbursed for any services provided to these clients (the dataset does not contain any information concerning whether or not reimbursements were sought for services provided to non-EMA residents). Given the large number of clients involved, this

circumstance warrants closer study in order to determine whether, and the extent to which, non-EMA residents are receiving CARE Act-funded services in the Baltimore EMA without the EMA's receiving reimbursement.

Table 2
Non-EMA Residents Accessing Services in the Baltimore EMA, FY 2003

County of residence	*Number of residents*	*As pctage. of non-EMA residents (n=226)*	*As pctage. of STSC clients (n=1,285)*
Washington	66	29.2 %	5.1%
Frederick	31	13.7 %	2.4%
Dorchester	25	11.1 %	1.9%
Allegany	19	8.4 %	1.5%
Talbot	14	6.2 %	1.1%
Caroline	13	5.8 %	1.0%
Worcester	13	5.8 %	1.0%
Somerset	13	5.8 %	1.0%
Kent	10	4.4 %	0.8%
Outside Maryland*	8	3.5 %	0.6%
Wicomico	7	3.1 %	0.5%
Prince George's	4	0.8 %	0.3%
Cecil	2	0.9 %	0.2%
Garrett	1	0.4 %	0.1%

Source: BCHD data.

* Residence locations for clients outside Maryland were Greenlawn, N.Y.; Hanover, Pa., the District of Columbia; McLean, Va.; Alexandria, Va., Harrisonburg, Va.; and Bellingham, Wash.

4. CROSS-JURISDICTIONAL SERVICE UTILIZATION

The goal of this project is to better understand the frequency with which Ryan White Title I consumers in the Baltimore EMA cross jurisdictions to receive services. As noted earlier, however, the level of detail available from the unduplicated dataset concerning where clients receive their services is significantly limited. The main obstacle is that, while each client's record shows what services were received and which service providers the client visited, it does not connect specific services to specific providers. Also, since area providers do not have a common protocol for defining the number of visits made by a particular client, it is not possible to establish the frequency of utilization of the services in question. As a result, caution must be exercised in interpreting these data because an individual who is reported as having received mental-health care may have made only visit during the entire year, while another client reported as receiving the same service may have made weekly visits throughout the year.

However, almost half (637 individuals, or 49.6 percent) of the clients in the dataset saw only one provider in FY 2003, meaning that all services obtained by these clients were likely to have been provided by that single provider (barring data-input errors, of course). Therefore, despite the limitations of the data organization, a detailed analysis of location and frequency of service utilization is possible for a rather large subset of the data — those clients who saw only a single provider during all of FY 2003 ("single-provider clients"). Hence, single-provider clients were analyzed separately, and differently, from multiple-provider clients.

4.1 Focus of Analyses

Before splitting the dataset into single-provider and multiple-provider subsets, a variety of queries were run on the full dataset, both to establish certain basic demographic information (county of residence, for example) as well as to answer larger questions about where clients receive certain services. Due to the limited timeframe for completing this project, analysis of service utilization was restricted to these 10 service categories, which were ranked by the planning council at the FY 2005 priority-setting conference as the 10 most important:

1. Primary medical care
2. Substance-abuse treatment
3. Case management
4. Housing assistance
5. Oral-health services
6. Outreach services
7. Mental-health services
8. Emergency financial assistance (EFA)
9. Transportation services
10. Client-advocacy services

More specifically, the analysis focused on the instances of these services that were paid for by "services to surrounding counties" funds. STSC funds are designated for services for a specific type of client: PLWH/As residing outside Baltimore City, whether they are seeking care inside or outside the city. The purpose of the STSC designation is to apportion funds as fairly as possible given the reality that not all PLWH/As will seek care in their home jurisdiction, due to privacy and other concerns. That is, if funds were delivered directly to the suburban counties based simply on the number of PLWH/As residing within their boundaries, and if some of those PLWH/As typically come to Baltimore City for services regardless, county service providers would be receiving more money for fewer patients while Baltimore City providers would have to serve a larger group of clients than anticipated (and funded). Moreover, some services can only

be obtained from the relatively denser and more varied selection of providers located inside Baltimore City. Finally, privacy concerns aside, this is the category of funding that also supports any CARE Act services offered in jurisdictions outside Baltimore City (e.g., at a county health department). Therefore, providers receiving these funds include providers located both in and outside Baltimore City.

It is important to note that funds are allocated by category, not by provider, and that a provider contracted to provide a service to one set of Title I consumers (say, county residents) need not necessarily be contracted to provide other services to only the same set of people. For example, a provider like Chase Brexton Health Services offers a wide range of services at both a city and a county location. They may be funded to provide one service, such as primary medical care, to both city and county residents, but another service — mental-health services, for example — to only city residents, and still another service to only county residents. Thus, in the unduplicated database, not only must the provider name, client jurisdiction and service category be indicated, but the funding source (STSC or non-STSC) for the service as well. This distinction will become important to understanding the utilization patterns of single-provider clients.

Because the database does not link services received with the providers the client visited, it is necessary to try to make that link "manually," by looking at which services a client received, which providers a client visited, which of those providers receive STSC funds and for which services the providers receive them.

Thirteen providers are currently receiving CARE Act STSC funds, meaning that they are funded to provide services at locations outside Baltimore City or to clients who live outside Baltimore City:

1. Anne Arundel County Department of Health
2. Baltimore County Department of Health
3. Harford County Health Department
4. Howard County Health Department
5. Queen Anne's County Health Department
6. HAVEN
7. Chase Brexton Health Services
8. Health Education Resource Organization (HERO)
9. Johns Hopkins Moore Clinic
10. University of Maryland PLUS Program
11. Baltimore Substance Abuse Systems (BSAS)
12. People's Community Health Center
13. Maryland Community Kitchen

Among these 13 providers, just 6 see clients using both STSC and non-STSC CARE Act funds — that is, clients residing both inside and outside Baltimore City:

1. Chase Brexton Health Services
2. HERO
3. Johns Hopkins Moore Clinic
4. People's Community Health Center
5. BSAS
6. Maryland Community Kitchen

4.2 Comparison of Single-provider and Multiple-provider Clients

While the nature of the dataset allows a detailed analysis of the single-provider clients, as with any subset of a larger group, it bears pointing out that that group of clients may not accurately represent the entire group of clients in the dataset. This is because, as a general rule, individuals with worsening health tend to require the services of a greater number of specialists and are more likely to have visited multiple providers in a given year. Therefore, the group of clients that saw only one provider may over-represent the healthier portion of the client base, and conclusions drawn from this group's experiences may not capture the experiences of clients in poorer health.

Before more general analysis could proceed, then, the dataset was queried to try to determine — to the extent possible — what differences existed between the group of clients that saw only one provider and the group that saw several. Table 3 presents demographic differences between single-provider and multiple-provider clients. As the table shows, single provider clients did indeed have a slightly lower rate of AIDS prevalence than did multiple-provider clients. Only 55.9 percent of single-provider clients reported being AIDS-defined, compared with 61.6 percent of multiple-provider clients. In addition, the group of clients who saw only one provider consisted of slightly more males and slightly fewer females than did the group of multiple-provider clients (as well as capturing both of the clients recorded as transgendered). Differences exist as well in racial composition, with the single-provider group having a slightly lower proportion of minorities (57.9 percent as opposed to 66.6 percent); in addition, the average age of the single-provider group was lower than that of the multiple-provider group (40.6 as opposed to 42.4 years old). These differences, while far from vast, should be kept in mind throughout the analysis that follows.

Table 3
Clients with One Provider Compared to Clients with Multiple Providers

	Clients reporting only one provider (n=637)		***Clients reporting multiple providers (n=648)***	
Gender*	***Number***	***Percent***	***Number***	***Percent***
Male	396	62.2%	384	59.3%
Female	239	37.5%	264	40.7%
Transgendered	2	0.3%	0	0.0%
Race	***Number***	***Percent***	***Number***	***Percent***
Minority	349	57.9%	431	66.6%
White	254	42.1%	216	33.4%
HIV status†	***Number***	***Percent***	***Number***	***Percent***
Not AIDS	112	44.1%	161	38.4%
AIDS	142	55.9%	258	61.6%
Age‡	Mean = 40.6 years		Mean = 42.4 years	

Source: BCHD data.

* Test statistic: χ^2=3.33, df=2, p=.189
** Test statistic: χ^2=10.2, df=1, p=.001; 35 records lacked race information.
† Test statistic: χ^2=2.1, df=1, p=.146 ; 612 records lacked HIV status information.
‡ Test statistic: t =-3.04, df=1214, p=.002; one record lacked age information.

4.3 Service Utilization by Single-provider Clients

This section analyses the use of services by those clients who saw only one provider in Ryan White FY 2003. Specifically, the analysis focuses on their use of services in one of the following 10 service categories:

1. Primary medical care
2. Substance-abuse treatment
3. Case management
4. Housing assistance
5. Oral-health services
6. Outreach services
7. Mental-health services
8. Emergency financial assistance (EFA)
9. Transportation services
10. Client-advocacy services

Organizing the data by service category is possible for single-provider clients because each of these clients saw only one provider in the year in question, and so it is assumed that all of the services that client was reported as receiving were obtained from that one provider. In the tables at the end of this section, totals are given showing how many clients were reported as receiving the given service from each provider: for example, table 4 shows that 389 individuals out of the total 637 single-provider clients are reported as receiving primary medical care. However, since some clients may have received more than one service from their provider, these clients will be represented in more than one category. For this reason, the total clients across all categories analyzed (768) add up to more than the total number of clients who received services from a single provider (637).

Baltimore City was the only jurisdiction from which single-provider clients accessed services in all 10 categories. Clients residing outside the EMA accessed all but one service category (the exception was housing assistance, perhaps not surprisingly); clients residing in Anne Arundel County accessed all but outreach services; and clients in Baltimore County accessed all but emergency financial assistance. Single-provider clients residing in Queen Anne's County accessed services in only 4 of these 10 categories, while clients from Harford and Carroll counties accessed services in only 5.

Primary medical care and case management were the only two categories of services accessed by single-provider clients from all seven EMA jurisdictions as well as by clients residing outside the EMA.

4.3.1 Primary Medical Care

Among the 389 single-provider clients who received primary medical care, the vast majority were seen by Johns Hopkins Hospital's Moore Clinic (278), followed by Chase Brexton (97). (See table 4 at the end of section 4.3.) The jurisdiction that was home to the largest number of single-provider clients reported as receiving primary health care was Baltimore County (74; 51 seen by Chase Brexton and 23 seen by the Moore Clinic). At least some single-provider clients of all of the EMA jurisdictions received primary medical care, 1 of only 2 of the 10 categories in question for which this was the case (the only other category in which single-provider clients from all seven EMA jurisdictions received services was case management). There were 232 single-provider clients residing outside the EMA who received services in this category, 225 served by the Moore Clinic, 5 served by Chase Brexton and 2 served through BSAS.

It should be noted that, while the Moore Clinic is based in Baltimore City, this provider's operations include dispatching doctors to provide services to PLWH/As at the health departments of the suburban EMA jurisdictions. Therefore, when a non-Baltimore City client in this dataset is

reported as having received services from the Moore Clinic, it is likely that those services were received at a county health department; on the other hand, since privacy concerns might inspire a PLWH/A to seek care outside his or her home jurisdiction, it cannot be said with certainty that, for example, a Baltimore County resident receiving Moore Clinic services received those services at the Baltimore County health department, as opposed to the health department of a neighboring jurisdiction. However, for the purposes of this analysis, it is assumed that the majority of non-Baltimore City Moore Clinic clients did not visit the Moore Clinic location in Baltimore City. Meanwhile, clients seen by Chase Brexton may have been seen in either Baltimore City or Baltimore County, since this provider has a location in each of these two jurisdictions.

The data available suggest relatively little inter-jurisdictional movement by single-provider clients receiving primary medical care, assuming that those suburban EMA residents seen by the Moore Clinic were in fact seen at their local county health departments. Otherwise, the only visible inter-jurisdictional movement was that of five suburban EMA residents (one from Howard County, two from Harford County and two from Anne Arundel County) who were reported as receiving primary medical care from Chase Brexton. It cannot be determined with any certainty, however, whether they were seen at Chase Brexton's city or county location, only that they left their jurisdiction of residence. Therefore, it cannot be said definitively whether any non-Baltimore City resident single-provider clients entered the city for primary medical care.

The most striking finding concerning single-provider clients who received primary medical care was that 232 of them — about 60 percent — reside outside the EMA. As noted earlier, the only non-EMA residents entitled to receive services paid for the by the EMA's CARE Act funds are veterans, though it is hardly likely that all 232 of these clients were veterans. A second possibility is that these clients are actually EMA residents, but their records were miscoded in some way; this seems unlikely as only 5 of the 232 clients had invalid ZIP codes, while the others had ZIP codes from various counties of Maryland. A third and most likely possibility is that these clients were referred to service providers in the EMA for a specialty service they could not receive in their home jurisdiction. In such cases, the Baltimore EMA is entitled to repayment for services rendered. The fact that so many single-provider clients who received primary medical care in 2003 were not EMA residents raises two questions: (a) is a similarly large number of non-EMA residents receiving primary medical through the Baltimore EMA's CARE Act funds every year, and (b), if so, is the Baltimore EMA being properly reimbursed for services rendered? Answering these questions will require further study.

4.3.2 Mental Health Care

In this category, Chase Brexton was the leader, providing mental-health care to 15 clients out of the total 30 single-provider clients who received mental-health care (see table 5). In second place was HERO, which saw nine clients. The jurisdiction that was home to the largest number of single-provider clients receiving mental-health care services was Baltimore County (12; 7 seen by Chase Brexton and 5 seen by HERO). No single-provider clients residing in Harford or Queen Anne's counties were reported as receiving this service. There was one single-provider client residing outside the EMA who received services in this category; the provider was Chase Brexton.

The data as currently available show inter-jurisdictional movement by only three single-provider clients receiving mental-health services (and all received said services from HERO, which provides services in both Baltimore County and Baltimore City): one from Carroll County and two from Howard County. Because of HERO's city and county locations, it cannot be said with any certainty whether any non-Baltimore City resident single-provider clients entered the city for

mental-health care; if any did, however, they numbered no more than three out of the total 30 single-provider clients who received mental health care in 2003.

4.3.3 Substance-abuse Treatment

Twenty-seven single-provider clients received substance-abuse treatment in 2003 (see table 6). The main providers in this category were Chase Brexton and BSAS. Chase Brexton saw most of the clients, 17 out of the total 27, while BSAS saw 6. The jurisdiction that was home to the largest number of single-provider clients reported as receiving substance-abuse treatment services was Baltimore City (14; 10 seen by Chase Brexton and 4 seen through BSAS). Substance-abuse treatment services were not provided to any single-provider clients residing in Harford, Howard, Carroll or Queen Anne's counties. There were three single-provider clients residing outside the EMA who received services in this category, two served through BSAS and one served by Chase Brexton.

The available data do not suggest any inter-jurisdictional movement by single-provider clients receiving substance-abuse treatment; therefore, no single-provider clients residing outside Baltimore City received substance-abuse treatment services in Baltimore City.

4.3.4 Oral Health Services

Eleven of the 21 single-provider clients that received oral-health services were seen at Chase Brexton (see table 7). Next was the University of Maryland's PLUS program, with nine clients seen. The only other provider that saw clients in this category was the People's Community Health Center, which saw only one client, a Baltimore City resident. The jurisdiction that was home to the largest number of single-provider clients reported as receiving oral-health services was Baltimore County (seven; six seen by Chase Brexton and one seen by the PLUS Program). No single-provider clients residing in Harford, Carroll or Queen Anne's counties received oral-health services. One single-provider client residing outside the EMA received services in this category, from the PLUS Program.

The data suggest inter-jurisdictional travel by eight single-provider clients receiving oral-health services, all seen by the University of Maryland's PLUS Program in Baltimore City: three from Anne Arundel County, one from Baltimore County and four from Howard County.

4.3.5 Case Management

There were 143 single-provider clients who received case-management services (see table 8). In every case except Baltimore City and Carroll County, each jurisdiction's health department served the majority of that jurisdiction's single-provider clients who received case-management services. In two cases (Anne Arundel and Queen Anne's counties), the local health department provided all case-management services received by single-provider residents of the counties in question. The Anne Arundel County health department provided case-management services to the largest number of single-provider clients, serving a total of 57 (which included all Anne Arundel County residents in this category). Anne Arundel County residents were also the single-largest group of single-provider clients who received case management. Single-provider clients from each EMA jurisdiction received case management, 1 of only 2 of the 10 categories in question for which this was the case. (The only other category in which single-provider clients from all seven EMA jurisdictions received services was primary medical care.) Seven single-provider clients residing outside the EMA received services in this category: two served through BSAS, two

served by the Harford County Health Department, two served by the Howard County Health Department and one served by Chase Brexton.

Of some interest are those counties whose residents sought case-management services at another county's health department, the only example of inter-jurisdictional movement in this category. Two Howard County residents sought case-management services from the Anne Arundel County health department. One Carroll County resident — the only Carroll County single-provider client to receive case-management services — received them from the Baltimore County Department of Health. And two Baltimore City residents also sought case management from the Baltimore County health department. Two possibilities exist as to why the data show residents of one county seeking case management in another: either these clients did not, in fact, behave as the data show (i.e., there were data-entry errors) or they consciously avoided their "home" health department, perhaps out of concern for their own privacy.

4.3.6 Client Advocacy

Many fewer single-provider clients received client-advocacy services than received case-management services (see section 4.3.5): 22 received client advocacy, as opposed to the 143 that received case management (see table 9). Of those 22, the single largest group was made up of Anne Arundel County residents, all of whom received the service from their county health department (as did the only single-provider client living in Howard County who received such services). The only other providers from whom this service was obtained were the Moore Clinic and BSAS. Four single-provider clients residing outside the EMA received services in this category, two served by the Moore Clinic and two served through BSAS. No single-provider clients residing in Harford or Carroll counties received this service.

Most notable in this category is the fact that the largest apparent provider of client-advocacy services to single-provider clients was the Anne Arundel health department, which is not actually funded to provide this service. The fact that such a large block of clients was reported as having received this service from the county health department suggests a data-entry error. Unfortunately, it is not possible at this point to determine who the actual provider was.

The only possible inter-jurisdictional movement by single-provider clients seeking client-advocacy services was by one Howard County resident, who is recorded as having received the service from the Anne Arundel County health department; however, given the volume of other client visits seemingly erroneously attributed to that department, it is possible that this Howard County record is a case of the same error.

4.3.7 Emergency Financial Assistance (EFA)

Fifty-seven single-provider clients received emergency financial assistance in 2003, most often through their own jurisdictions' health departments (see table 10). Such was the case, at any rate, in Carroll, Harford, Howard, Anne Arundel and Queen Anne's counties. Other than county health departments, the most frequent provider of EFA to single-provider clients was Anne Arundel County-based HAVEN. The jurisdiction that was home to the largest number of single-provider clients reported as receiving EFA was Anne Arundel County (13; 7 seen by the Anne Arundel County health department and 6 seen by HAVEN). Two single-provider clients residing outside the EMA received services in this category, one served by the Moore Clinic and one served by HAVEN. No single-provider clients residing in Baltimore County received EFA.

The dataset shows only three single-provider clients crossing between jurisdictions to receive EFA, all Baltimore City residents. One of these visited HAVEN in Anne Arundel County; the other two went to the Carroll County Health Department.

4.3.8 Housing Assistance

One of the least utilized services by single-provider clients was housing assistance (see table 11). Here, it was HAVEN that served the largest number of these clients, a majority, in fact: 9 out of the total 17. The only health department that provided this service to single-provider clients was Harford County's, which served all of the five Harford County residents in this category. The jurisdiction that was home to the largest number of single-provider clients receiving housing services was Anne Arundel County (eight; seven seen by HAVEN and one seen through BSAS). This was the only category in which no single-provider clients residing outside the EMA received services. Also, no single-provider clients residing in Howard, Carroll or Queen Anne's counties received this service.

One Baltimore City resident crossed from the city into Anne Arundel County to receive housing assistance, from HAVEN. No single-provider clients residing outside Baltimore City received housing assistance in Baltimore City.

4.3.9 Outreach Services

Easily the least-utilized service among single-provider clients, outreach services were provided to only eight clients; all of these resided in either Baltimore City or County, except one, who lived outside the EMA (see table 12). All clients served in this category were served either by Baltimore County's health department or through BSAS. The jurisdiction that was home to the largest number of single-provider clients reported as receiving outreach services was Baltimore City (four; three seen through BSAS and one seen by the Baltimore County Health Department). One single-provider client residing outside the EMA received services in this category, through BSAS. No single-provider clients residing in Harford, Howard, Anne Arundel, Carroll, or Queen Anne's counties received this service.

One single-provider client traveled outside his or her home jurisdiction to receive outreach services: a Baltimore City resident seen at the Baltimore County Health Department. No single-provider clients residing outside Baltimore City received outreach services in Baltimore City.

4.3.10 Transportation Services

Forty-seven single-provider clients received transportation services in 2003 (see table 13). Transportation services reached single-provider clients through the health departments of Carroll, Harford, Howard, Anne Arundel and Baltimore counties, as well as through BSAS, HAVEN and HERO. Anne Arundel County residents represented the largest group (18) of single-provider clients receiving transportation services, 15 of whom were seen by the Anne Arundel County health department, 2 by HAVEN and 1 through BSAS. One single-provider client residing outside the EMA received services in this category, from HAVEN. No single-provider clients residing in Queen Anne's County received this service.

Perhaps it goes without saying that almost no single-provider clients left their home jurisdictions to receive transportation services; in fact, there was only one, a resident of Howard County who sought transportation services from the Anne Arundel County health department.

4.3.11 Analysis of Single-provider Clients

Clients who saw only one provider numbered 637, or just under half of the total set (1,285) of persons receiving CARE Act-funded services in the Baltimore EMA in FY 2003. It is possible that those clients seeing only one provider are in better health, overall, than those seeing multiple providers, and so caution should be exercised in generalizing from the experiences of single-provider clients to all clients as a whole. In fact, the data do show some differences: single-provider clients are slightly more likely to be male, slightly less likely to be members of racial or ethnic minorities, slightly younger and less likely to report being AIDS-defined than are multiple-provider clients.

The service categories in which the largest numbers of single-provider clients were reported as receiving services were primary medical care (389), EFA (157), and case management (143). The categories in which the fewest numbers of these clients were reported as receiving services were outreach services (8), housing assistance (17) and oral-health services (21).

Clients residing in Anne Arundel County received the majority of services across all 10 categories (170), followed by Baltimore County (132) and Baltimore City (101). The majority of services were provided by the Moore Clinic (279), Chase Brexton (140) and the Anne Arundel County health department (90).

Single-provider clients residing outside the EMA received services in all but 1 of the 10 categories (not surprisingly, no non-EMA residents received housing services). In most cases, those clients represented a tiny fraction of those receiving services in any given category, with one striking exception: 237 of the 389 single-provider clients receiving primary medical care lived outside the EMA (almost 61 percent). Of these, 225 were seen by the Moore Clinic, which maintains a facility in downtown Baltimore in addition to dispatching its doctors to the health departments of the EMA's suburban jurisdictions.

Local health departments were more active in some service categories than others; no health department provided services in all 10 categories. Anne Arundel County's health department came closest, providing services in 6 out of the 10 categories. Howard County's health department provided services in five categories, while Harford County's provided services in four.

Residents of some jurisdictions were much more likely to have been reported as receiving care than others. Clients residing in Anne Arundel County and Baltimore City received at least 1 service in each of the 10 categories. Residents of Queen Anne's County received services in only 3 of the 10 categories (primary medical care, case management and emergency financial assistance), while Harford County residents received services in only 4 (primary medical care, case management, emergency financial assistance and housing assistance).

4.3.12 Conclusions about Single-provider Clients

The data as currently available show a relatively small amount of inter-jurisdictional travel by single-provider clients in search of services. Travel or potential travel by non-Baltimore City residents into the city for services was restricted to just three service categories: primary medical care; mental-health care; and oral-health care. Determining precise numbers of non-Baltimore City resident single-provider clients who traveled into the city is complicated by the fact that it is not possible to distinguish between the city and county locations of several providers.

The only service category out of 10 ten categories under discussion in this report in which it can definitely be said that a significant number of non-Baltimore City resident single-provider clients

entered the city for services in 2003 was oral health. Eight clients, or more than a third of the total 21 single-provider clients seen for oral health services in 2003, lived outside the city but were seen at the University of Maryland's Baltimore City-based PLUS Program.

Table 4

Single-provider Clients Receiving Primary Medical Care, FY 2003

Jurisdiction	*Funding source*	*Provider*	*N*
Anne Arundel County	Non-STSC	Anne Arundel County Health Department*	5
		Baltimore Substance Abuse Systems**	1
	STSC	Chase Brexton Health Services	2
		Johns Hopkins Moore Clinic	6
Baltimore City	Non-STSC	People's Community Health Center	1
	STSC	Chase Brexton Health Services	36
		Johns Hopkins Moore Clinic	14
Baltimore County	Non-STSC	--	--
	STSC	Chase Brexton Health Services	51
		Johns Hopkins Moore Clinic	23
Carroll County	Non-STSC	--	--
	STSC	Johns Hopkins Moore Clinic	6
Harford County	Non-STSC	--	--
	STSC	Chase Brexton Health Services	2
Howard County	Non-STSC	--	--
	STSC	Chase Brexton Health Services	1
		Johns Hopkins Moore Clinic	3
Queen Anne's County	Non-STSC	Queen Anne's County Health Department*	5
	STSC	Johns Hopkins Moore Clinic	1
Outside EMA	Non-STSC	Baltimore Substance Abuse Systems**	2
	STSC	Chase Brexton Health Services	5
		Johns Hopkins Moore Clinic	225
		Total	389

Source: BCHD data.

* Not funded to provide this service.

** This provider does not offer services, but is contracted to provide referrals to available substance-abuse programs.

Table 5

Single-provider Clients Receiving Mental Health Services, FY 2003

Jurisdiction*	***Funding source***	***Provider***	***N***
Anne Arundel County	Non-STSC	Baltimore Substance Abuse Systems**	1
	STSC	Anne Arundel County Health Department	3
		Hopkins Moore Clinic	1
Baltimore County	Non-STSC	Chase Brexton Health Services	7
	STSC	HERO	5
Baltimore City	Non-STSC	Chase Brexton Health Services	7
	STSC	HERO	1
Carroll County	Non-STSC	--	--
	STSC	HERO	1
Howard County	Non-STSC	--	--
	STSC	HERO	2
		Hopkins Moore Clinic	1
Outside EMA	Non-STSC	--	--
	STSC	Chase Brexton Health Services	1
		Total	30

Source: BCHD data.

* No residents of Harford or Queen Anne's counties received this service.

** This provider does not offer services, but is contracted to provide referrals to available substance-abuse programs.

Table 6

Single-provider Clients Receiving Substance-abuse Treatment, FY 2003

Jurisdiction*	***Funding source***	***Provider***	***N***
Anne Arundel County	Non-STSC	Hopkins Moore Clinic**	1
	STSC	Baltimore Substance Abuse Systems***	1
Baltimore County	Non-STSC	Chase Brexton Health Services	6
	STSC	Baltimore Substance Abuse Systems***	2
Baltimore City	Non-STSC	Chase Brexton Health Services	10
	STSC	Baltimore Substance Abuse Systems***	4
Outside EMA	Non-STSC	Chase Brexton Health Services	1
	STSC	Baltimore Substance Abuse Systems***	2
		Total	27

Source: BCHD data.

* No residents of Carroll, Harford, Howard, or Queen Anne's counties received this service.

** Not funded to provide this service.

*** This provider does not offer services, but is contracted to provide referrals to available substance-abuse programs.

Table 7

Single-provider Clients Receiving Oral Health Services, FY 2003

Jurisdiction*	***Funding source***	***Provider***	***N***
Anne Arundel County	Non-STSC	--	--
	STSC	PLUS Program	3
Baltimore County	Non-STSC	Chase Brexton Health Services**	6
	STSC	PLUS Program	1
Baltimore City	Non-STSC	Chase Brexton Health Services	5
	STSC	People's Community Health Center	1
Howard County	Non-STSC	--	--
	STSC	PLUS Program	4
Outside EMA	Non-STSC	--	--
	STSC	PLUS Program	1
		TOTAL	21

Source: BCHD data.

* No residents of Carroll, Harford, or Queen Anne's counties received this service.

** Not funded to provide this service.

Table 8

Single-provider Clients Receiving Case Management Services, FY 2003

Jurisdiction	*Funding source*	*Provider*	*N*
Anne Arundel County	Non-STSC	--	
	STSC	Anne Arundel County Health Department	55
Baltimore County	Non-STSC	Hopkins Moore Clinic*	1
	STSC	Baltimore County Health Department	12
		Chase Brexton Health Services	7
Baltimore City	Non-STSC	HERO	1
		Baltimore Substance Abuse Systems**	1
	STSC	Baltimore County Health Department	2
		Chase Brexton Health Services	2
Carroll County	Non-STSC	--	--
	STSC	Baltimore County Health Department	1
Harford County	Non-STSC	--	--
	STSC	Harford County Health Department	23
		Chase Brexton Health Services	1
Howard County	Non-STSC	--	--
	STSC	Anne Arundel County Health Department	2
		Howard County Health Department	23
Queen Anne's County	Non-STSC	--	--
	STSC	Queen Anne's County Health Department	5
Outside EMA	Non-STSC	Baltimore Substance Abuse Systems**	2
	STSC	Harford County Health Department	2
		Howard County Health Department	2
		Chase Brexton Health Services	1
		Total	143

Source: BCHD data.

* Not funded to provide this service.

** This provider does not offer services, but is contracted to provide referrals to available substance-abuse programs.

Table 9

Single-provider Clients Receiving Client Advocacy Services, FY 2003

Jurisdiction*	***Funding source***	***Provider***	***Clients***
Anne Arundel County	Non-STSC	Anne Arundel County Health Department**	12
	STSC	--	--
Baltimore County	Non-STSC	STSC funds*** at Hopkins Moore Clinic	1
	STSC	--	--
Baltimore City	Non-STSC	STSC funds*** at Hopkins Moore Clinic	1
	STSC	STSC funds at Baltimore Substance Abuse Systems****	2
Howard County	Non-STSC	Anne Arundel County Health Department**	1
	STSC	--	--
Queen Anne's County	Non-STSC	--	--
	STSC	Queen Anne's County HD	1
Outside EMA	Non-STSC	STSC funds*** at Hopkins Moore Clinic	2
		STSC funds at Baltimore Substance Abuse Systems****	2
	STSC	--	--
		TOTAL	22

Source: BCHD data.

* No residents of Carroll or Harford counties received this service.

** Not funded to provide this service.

*** This provider does not receive STSC funds to provide this service; however, the dataset indicated that this service was provided using STSC funds.

**** This provider does not offer services, but is contracted to provide referrals to available substance-abuse programs.

Table 10

Single-provider Clients Receiving Emergency Financial Assistance, FY 2003

Jurisdiction*	***Funding source***	***Provider***	***Clients***
Anne Arundel County	Non-STSC	--	--
	STSC	Anne Arundel County Health Department	7
		HAVEN	6
Baltimore City	Non-STSC	STSC funds** at HERO	1
	STSC	Carroll County Health Department	2
		HAVEN	1
Carroll County	Non-STSC	--	--
	STSC	Carroll County Health Department	12
Harford County	Non-STSC	--	--
	STSC	Harford County Health Department	11
Howard County	Non-STSC	--	--
	STSC	Howard County Health Department	9
Queen Anne's County	Non-STSC	--	--
	STSC	Queen Anne's County Health Department ***	6
Outside EMA	Non-STSC	STSC funds** at Hopkins Moore Clinic	1
	STSC	HAVEN	1
		TOTAL	57

Source: BCHD data.

* No residents of Baltimore County received this service.

** This provider does not receive STSC funds to provide this service; however, the dataset indicated that this service was provided using STSC funds.

*** Not funded to provide this service.

Table 11

Single-provider Clients Receiving Housing Services, FY 2003

Jurisdiction*	***Funding source***	***Provider***	***Clients***
Anne Arundel County	Non-STSC	STSC funds** at Baltimore Substance Abuse Systems***	1
	STSC	HAVEN	7
Baltimore County	Non-STSC	--	--
	STSC	HAVEN	1
		Unknown provider code	1
Baltimore City	Non-STSC	STSC funds** at HERO	1
	STSC	HAVEN	1
Harford County	Non-STSC	--	--
	STSC	Harford County Health Department	5
		TOTAL	17

Source: BCHD data.

* No residents of Carroll, Howard, or Queen Anne's counties received this service.

** This provider does not receive STSC funds to provide this service; however, the dataset indicated that this service was provided using STSC funds.

*** Not funded in this category.

Table 12

Single-provider Clients Receiving Outreach Services, FY 2003

Jurisdiction*	***Funding source***	***Provider***	***Clients***
Baltimore County	Non-STSC	--	--
	STSC	Baltimore County Health Department	3
Baltimore City	Non-STSC	STSC funds** at Baltimore Substance Abuse Systems***	3
	STSC	Baltimore County Health Department	1
Outside EMA	Non-STSC	STSC funds** at Baltimore Substance Abuse Systems***	1
	STSC	--	--
		TOTAL	8

Source: BCHD data.

* No residents of Anne Arundel, Carroll, Harford, Howard, or Queen Anne's counties received this service.

** This provider does not receive STSC funds to provide this service; however, the dataset indicated that this service was provided using STSC funds.

*** Not funded in this category.

Table 13

Single-provider Clients Receiving Transportation Services, FY 2003

Jurisdiction*	***Funding source***	***Provider***	***Clients***
Anne Arundel County	Non-STSC	STSC funds** at Baltimore Substance Abuse Systems***	1
	STSC	Anne Arundel County Health Department	15
		HAVEN	2
Baltimore County	Non-STSC	STSC funds** at Baltimore Substance Abuse Systems***	2
	STSC	Baltimore County Health Department**	2
		HAVEN	1
Baltimore City	Non-STSC	STSC funds* at HERO	1
		STSC funds** at Baltimore Substance Abuse Systems***	2
	STSC	--	
Carroll County	Non-STSC	--	--
	STSC	Carroll County Health Department	7
Harford County	Non-STSC	--	--
	STSC	Harford County Health Department	7
Howard County	Non-STSC	--	--
	STSC	Anne Arundel County Health Department	1
		Howard County Health Department	5
Outside EMA	Non-STSC	--	
	STSC	HAVEN	1
		Total	47

Source: BCHD data.

* No residents of Queen Anne's counties received this service.

** This provider does not receive STSC funds to provide this service; however, the dataset indicated that this service was provided using STSC funds.

*** Not funded in this category.

4.4 Service Utilization by Multiple-provider Clients

As noted earlier, the organization of the data for clients who saw more than one service provider during 2003 does not allow the determination of which specific services were delivered to clients by which specific providers. Therefore, for this subset of clients, it is not possible to say whether they traveled across jurisdictions to receive a given service. However, if any of these clients received services from a provider with only one service location, it is possible to say whether the clients crossed jurisdictions to visit that provider by comparing the provider's location to the client's home jurisdiction. For these reasons, the analysis that follows is organized and presented quite differently than was the analysis of single-provider clients. For single-provider clients, it was possible to analyze travel patterns by service category; for multiple-provider clients, it is only possible to analyze travel patterns by county.

A series of tables at the end of this section lists the providers seen by each multiple-provider client residing in a given county, one table per county. On these tables, no provider was noted twice for a single client. For example, table 14 shows that 200 clients residing in Anne Arundel County were reported as using services provided by the Anne Arundel County health department; this figure represents 200 individuals, each of whom also would have been reported as using the services of at least one other provider listed on the table.

Once again, the data in these tables unfortunately do not indicate the frequency with which clients visited providers. Looking again at table 14, one can see that 200 Anne Arundel County residents were reported as using the county health department, but one cannot know how many times each of those 200 clients did so. By comparing a provider's location to a client's home jurisdiction, it is possible to tell whether a client crossed jurisdictions to receive services, but it is not possible to know if the client did so once during the year or once each week.

4.4.1 Anne Arundel County

Among Anne Arundel County residents were 213 multiple-provider clients, who saw 29 providers (counting STSC and non-STSC funds at the same provider as two different providers). When the numbers of providers seen by each multiple-provider client residing in Anne Arundel County are combined, the total number of these "provider mentions" is 609, 114 of which indicated providers based in Baltimore City (18.7 percent). (These Baltimore City-based provider mentions do not include the number of times multiple-location providers such as HERO, Chase Brexton or the Moore Clinic were mentioned, since there is no way to know which of these providers' locations a given multiple-provider client visited. Here and throughout, we assume the county locations of these providers.)

The three providers who reported seeing the most multiple-provider clients residing in Anne Arundel County were the Anne Arundel County health department, the Moore Clinic and HERO (see table 14). The county health department saw a total of 200 (all under STSC funds); the Moore Clinic saw a total of 114 (82 under STSC funds; 32 under non-STSC funds); and HERO saw a total of 61 (12 under STSC funds; 49 under non-STSC funds).

No multiple-provider clients residing in Anne Arundel County used any services from the health departments of any neighboring jurisdictions.

4.4.2 Baltimore City

Strangely enough, there were 84 STSC multiple-provider clients residing in Baltimore City. These clients saw 37 providers (counting STSC and non-STSC funds at the same provider as two different providers). When the numbers of providers seen by each multiple-provider client residing in Baltimore City are combined, the total number of these "provider mentions" is 255, 88 of which indicated providers based in Baltimore City. (These Baltimore City-based provider mentions do not include the number of times multiple-location providers such as HERO, Chase Brexton or the Moore Clinic were mentioned, since there is no way to know which of these providers' locations a given multiple-provider client visited.)

The three providers who reported seeing the most multiple-provider STSC clients residing in Baltimore City were HERO, the Moore Clinic and Chase Brexton (see table 15). HERO saw 50 clients (9 under STSC funds; 41 under non-STSC funds); the Moore Clinic saw 35 clients (15 under STSC funds; 20 under non-STSC funds); and Chase Brexton saw 27 clients (17 under STSC funds; 10 under non-STSC funds).

There were a total of 36 multiple-provider clients residing in Baltimore City who utilized one or more services from the health departments of the following jurisdictions: Anne Arundel County (17); Baltimore County (7); Harford County (3); and Howard County (9).

This issue requires further exploration, for it begs two obvious questions: (a) why are only about a third of these city-based clients seeing city-based providers and (b), if they live in the city, why are their services being funded under STSC at all? Data-entry error may explain some of the anomaly; that is to say, perhaps some of these clients in fact live in the counties, but are incorrectly coded as living in the city. Another plausible explanation is that at least some of them may once have lived in the counties, have now moved to the city, but have retained their STSC status and have continued to visit their STSC service providers. If this is correct, this is not the way the system is supposed to work. The funding should follow the client and his abode, not his provider. Very technically speaking, if a STSC client moves to the city, the STSC allocation should be reduced and the EMA-wide allocation increased correspondingly. In reality, this is not workable. Nonetheless, the grantee and the administrative agency should be aware of the fact that a number of city residents are receiving STSC services, a matter that bears monitoring in the future.

4.4.3 Baltimore County

Among Baltimore County residents were 121 multiple-provider clients, who saw 32 providers (counting STSC and non-STSC funds at the same provider as two different providers). When the numbers of providers seen by each multiple-provider client residing in Baltimore County are combined, the total number of these "provider mentions" is 326, 122 of which indicated providers based in Baltimore City (37.4 percent). (These Baltimore City-based provider mentions do not include the number of times multiple-location providers such as HERO, Chase Brexton or the Moore Clinic were mentioned, since there is no way to know which of these providers' locations a given multiple-provider client visited.)

The three providers who reported seeing the most multiple-provider clients residing in Baltimore County were the Moore Clinic, HERO and the Baltimore County health department (see table 16). The Moore Clinic saw a total of 74 (53 under STSC funds; 21 under non-STSC funds); HERO saw a total of 50 (12 under STSC funds; 38 under non-STSC funds); and the county health department saw a total of 49 (all under STSC funds).

This was one of only two cases in which a jurisdiction's own health department was not the leading provider for multiple-provider clients residing in that jurisdiction. The only other example of this was in Baltimore City, where no multiple-provider clients received any services from the city health department.

There were a total of four multiple-provider clients residing in Baltimore County who utilized one or more services from the health departments of the following jurisdictions: Anne Arundel County (one) and Howard County (three).

4.4.4 Carroll County

Among Carroll County residents were 20 multiple-provider clients, who saw 10 providers (counting STSC and non-STSC funds at the same provider as two different providers). When the numbers of providers seen by each multiple-provider client residing in Carroll County are combined, the total number of these "provider mentions" is 48, 8 of which indicated providers based in Baltimore City (16.7 percent). (These Baltimore City-based provider mentions do not include the number of times multiple-location providers such as HERO, Chase Brexton or the Moore Clinic were mentioned, since there is no way to know which of these providers' locations a given multiple-provider client visited.)

The three providers who reported seeing the most multiple-provider clients residing in Carroll County were the Moore Clinic, the Carroll County Health Department and HERO (see table 17). The Moore Clinic saw a total of 18 (all under STSC funds); the county health department saw a total of 11 (all presumably under STSC funds); and HERO saw a total of 9 (5 under STSC funds; 4 under non-STSC funds).

There was one multiple-provider client residing in Carroll County who utilized one or more services from the Harford County Health Department.

4.4.5 Harford County

Among Harford County residents, there were a total of 92 multiple-provider clients. These clients saw a total of 19 providers (counting STSC and non-STSC funds at the same provider as two different providers). When the numbers of providers seen by each multiple-provider client residing in Harford County are combined, the total number of these "provider mentions" is 249, 48 of which indicated providers based in Baltimore City (19.3 percent). (These Baltimore City-based provider mentions do not include the number of times multiple-location providers such as HERO, Chase Brexton or the Moore Clinic were mentioned, since there is no way to know which of these providers' locations a given multiple-provider client visited.)

The three providers who reported seeing the most multiple-provider clients residing in Harford County were the Harford County Health Department, the Moore Clinic and HERO (see table 18). The Harford County Health Department saw 87 clients (all under STSC funds); the Moore Clinic saw 70 clients (54 under STSC funds; 16 under non-STSC funds); and HERO saw 38 clients (14 under STSC funds; 24 under non-STSC funds).

There was one multiple-provider client residing in Harford County who utilized one or more services from the Baltimore City Health Department.

4.4.6 Howard County

There were 83 multiple-provider clients residing in Howard County who saw a total of 19 providers (counting STSC and non-STSC funds at the same provider as two different providers). When the numbers of providers seen by each multiple-provider client residing in Howard County are combined, the total number of these "provider mentions" is 234, 56 of which indicated providers based in Baltimore City (23.9 percent). (These Baltimore City-based provider mentions do not include the number of times multiple-location providers such as HERO, Chase Brexton or the Moore Clinic were mentioned, since there is no way to know which of these providers' locations a given multiple-provider client visited.)

The three providers who reported seeing the most multiple-provider clients residing in Howard County were the Howard County Health Department, the Moore Clinic and the PLUS Program (see table 19). The Howard County Health Department saw a total of 74 (all under STSC funds); the Moore Clinic saw a total of 60 (58 under STSC funds; 2 under non-STSC funds); and the PLUS Program saw a total of 32 (26 under STSC funds; 6 under non-STSC funds).

There were a total of four multiple-provider clients residing in Howard County who utilized one or more services from the Anne Arundel County health department.

4.4.7 Queen Anne's County

There were a total of 12 multiple-provider clients residing in Queen Anne's County. These clients saw a total of seven providers (counting STSC and non-STSC funds at the same provider as two different providers). When the numbers of providers seen by each multiple-provider client residing in Queen Anne's County are combined, the total number of these "provider mentions" is 28, 2 of which indicated providers based in Baltimore City (7.1 percent). (These Baltimore City-based provider mentions do not include the number of times multiple-location providers such as HERO, Chase Brexton or the Moore Clinic were mentioned, since there is no way to know which of these providers' locations a given multiple-provider client visited.)

In the case of multiple-provider clients residing in Queen Anne's County, only two providers reported seeing more than one: the Queen Anne's County Health Department and the Moore Clinic each saw a total of 12 such clients (see table 20). All of the clients seen at the county health department fell under STSC funding, which was the case with only 11 of those reported by the Moore Clinic.

No multiple-provider clients residing in Queen Anne's County utilized services from the health departments of any other jurisdictions.

4.4.8 Clients Residing Outside the Baltimore EMA

There were 23 multiple-provider clients residing outside the EMA. These clients saw a total of 17 providers (counting STSC and non-STSC funds at the same provider as two different providers). When the numbers of providers seen by each multiple-provider client residing outside the EMA are combined, the total number of these "provider mentions" is 50, 10 of which indicated providers based in Baltimore City (20.0 percent). (These Baltimore City-based provider mentions do not include the number of times multiple-location providers such as HERO, Chase Brexton or the Moore Clinic were mentioned, since there is no way to know which of these providers' locations a given multiple-provider client visited.)

The three providers who reported seeing the most multiple-provider clients residing outside the EMA were the Moore Clinic, HERO and the Queen Anne's County Health Department. The Moore Clinic saw a total of 21 (17 under STSC funds; 4 under non-STSC funds); HERO saw a total of 8 (3 under STSC funds; 5 under non-STSC funds); and the Queen Anne's County Health Department saw a total of 6 (all under STSC funds).

Multiple-provider clients residing outside the EMA also utilized services provided by the health departments of Anne Arundel County (1), Baltimore County (1), Harford County (1) and Howard County (1).

4.4.9 Analysis of Multiple-provider Clients

There were 648 clients who saw more than one provider in 2003, just over half of the total set (1,285) of persons receiving STSC-funded services in the Baltimore EMA.

One significant finding concerning multiple-provider clients is the varying role of county health departments, which in some counties saw the vast majority of the clients residing in that county at least once during the year, while in other jurisdictions saw relatively few of the clients residing in that jurisdiction. Harford County Health Department saw 94.6 percent of those CARE Act clients residing in the county who were reported as visiting multiple providers; in Howard County this figure was 89.1 percent and in Anne Arundel County, 93.9 percent. The Queen Anne's County Health Department saw fully 100 percent of that county's CARE Act-funded clients. Among those counties whose health departments saw relatively few of their own residents was Baltimore County's, which saw only 40.5 percent of multiple-provider clients residing in that county. Finally, 43.5 percent of multiple-provider clients residing outside of the six-county area also were seen in one of other of the county health departments.

The Moore Clinic at Johns Hopkins also saw a large percentage of multiple-provider patients in every county, which is not surprising given that the Moore Clinic not only operates a facility in Baltimore City but dispatches its physicians to the health departments of the suburban EMA jurisdictions to provide services to PLWH/As there as well. Adding totals across STSC and non-STSC funded categories, the Moore Clinic provided services at least once to 76.1 percent of Harford County multiple-provider clients, 72.3 percent of Howard County multiple-provider clients, 53.5 percent of Anne Arundel County multiple-provider clients, 61.2 percent of Baltimore County multiple-provider clients, 41.7 percent of Baltimore City multiple-provider clients, 90 percent of Carroll County multiple-provider clients, 100 percent of Queen Anne's County multiple-provider clients, and 91.3 percent of multiple-provider clients outside the six-county area.

HERO, with a location in Baltimore City and in Baltimore County, was also a very active provider among those with multiple providers, seeing 41.3 percent of Harford County multiple-provider clients, 39.8 percent of Howard County multiple-provider clients, 38.6 percent of Anne Arundel County multiple-provider clients, 41.3 percent of Baltimore County multiple-provider clients, 59.5 percent of Baltimore City multiple-provider clients, 45 percent of Carroll County multiple-provider clients, 8.3 percent of Queen Anne's County multiple-provider clients, and 34.8 percent of multiple-provider clients outside the six-county area.

The University of Maryland PLUS clinic was also a prominent choice among patients with multiple providers, seeing 5.4 percent of Harford County multiple-provider clients, 38.6 percent of Howard County multiple-provider clients, 22.1 percent of Anne Arundel County multiple-provider clients, 32.2 percent of Baltimore County multiple-provider clients, 15.5 percent of Baltimore City multiple-provider clients, 10 percent of Carroll County multiple-provider clients,

and 4.3 percent multiple-provider clients residing outside the EMA. No residents of Queen Anne's County were seen at that clinic.

4.4.10 Conclusions about Multiple-provider Clients

When the numbers of providers based in Baltimore City seen by multiple-provider clients residing outside the city are totaled, it becomes clear that there was a significant amount of travel from the suburban jurisdictions into the city. This is the case even when providers with locations in more than one jurisdiction (such as Chase Brexton, the Moore Clinic, HERO, etc.) are left aside, as they must be, given the impossibility of determining which of their locations a particular "mention" refers to.

At the high end of the scale, 37.4 percent of provider mentions by Baltimore County multiple-provider clients indicated visits to providers based in Baltimore City. Howard County, with a 23.9 percent rate of Baltimore City-based provider mentions among its multiple-provider clients, came second, followed closely by Harford County, where the rate was 19.3 percent. Queen Anne's County had the lowest rate of provider mentions indicating a Baltimore City-based provider, 7.1 percent.

Table 14

Anne Arundel County Clients Who Saw Multiple Providers (N=213 Clients)

Service provider*	***Provider located in client's jurisdiction?***	***Times nominated as a provider***
Anne Arundel County Health Dept. (STSC)	Y	200
HAVEN (STSC)	Y	94
Johns Hopkins Moore Clinic (STSC)	Y	82
HERO	N	49
Johns Hopkins Moore Clinic	N	32
UMD PLUS Program (STSC)	N	30
JHU Gynecology/Obstetrics	N	20
UMD PLUS Program	N	17
Maryland Community Kitchen (STSC)	N	15
Chase Brexton Health Services	N	13
HERO (STSC)	N	12
BSAS (STSC)	N	10
UMD Evelyn Jordan Center	N	7
Bon Secours Liberty Medical Center	N	4
Maryland Community Kitchen	N	3
People's Community Health Center (STSC)	N	3

Source: BCHD data.

* The following providers each were nominated two or fewer times: UMD Adolescent Clinic, STAR, BSAS (non-STSC), BCHD STD Clinic, South Baltimore Family Health Center, UMD PACE, Bon Secours, Health Care for the Homeless, AIDS Interfaith Residential Services, Joseph Richey Hospice Inc., BCHD Dental Clinic, AIDS Action of Baltimore, and an unknown provider.

Table 15

Baltimore City Clients Who Saw Multiple Providers (N=84 Clients)

Service provider*	***Provider located in client's jurisdiction?***	***Times nominated as a provider***
HERO	Y	41
Hopkins Moore Clinic	Y	20
Anne Arundel County Health Dept. (STSC)	N	17
Chase Brexton (STSC)	N	17
Hopkins Moore Clinic (STSC)	N	15
STAR	N	11
Chase Brexton	Y	10
Project PLASE	Y	10
Howard County Health Dept. (STSC)	N	9
HERO (STSC)	N	9
BSAS (STSC)	N/A	9
JHU Gynecology/Obstetrics	Y	8
Baltimore County Health Dept. (STSC)	N	7
UMD PLUS Program	Y	7
Maryland Community Kitchen	Y	7
Maryland Community Kitchen (STSC)	Y	7
UMD Evelyn Jordan Center	Y	6
UMD PLUS Program (STSC)	Y	6
HAVEN (STSC)	N	6
Bon Secours Liberty Medical Center	Y	5
BCHD STD Clinic	Y	4
Harford County Health Department (STSC)	N	3

Source: BCHD data.

* These providers each were nominated two or fewer times: JHU Bayview, UMD PACE Clinic, Health Care for the Homeless, GBMC Community Health, Manna House, Carroll County Health Department, BSAS, Bon Secours, AIDS Interfaith Residential Services, BCHD Dental Clinic, AIDS Action of Baltimore, People's Community Health Center (STSC), Maryland General Hospital, Family and Children's Services Central Maryland, and one unknown provider.

Table 16

Baltimore County Clients Who Saw Multiple Providers (N=121 Clients)

Service provider*	***Provider located in client's jurisdiction?***	***Times nominated as a provider***
Hopkins Moore Clinic (STSC)	Y	53
Baltimore County Health Dept. (STSC)	Y	49
HERO	Y	38
Maryland Community Kitchen (STSC)	N	26
Hopkins Moore Clinic	N	21
UMD PLUS Program	N	21
JHU Gynecology/Obstetrics	N	19
UMD PLUS Program (STSC)	N	18
HERO (STSC)	N	12
UMD Jordan Center	N	8
BSAS (STSC)	N	7
STAR	N	6
Bon Secours Liberty Medical Center	N	6
Chase Brexton	N	5
Chase Brexton (STSC)	Y	5
JHU Bayview	N	4
Howard County Health Dept. (STSC)	N	3
Maryland Community Kitchen	N	3
AIDS Action of Baltimore	N	3
Carroll County Health Dept.	N	3

Source: BCHD data.

* These providers each were nominated two or fewer times: HAVEN (STSC), BSAS, People's Community Health Center (STSC), Anne Arundel County Health Department (STSC), UMD PACE Clinic, Bon Secours, AIDS Interfaith Residential Services, Park West Medical Center, Baltimore Pediatric HIV Program, Maryland General Hospital, and three unknown providers.

Table 17

Carroll County Clients Who Saw Multiple Providers (N=20 Clients)

Service provider*	***Provider located in client's jurisdiction?***	***Times nominated as a provider***
JHU Moore Clinic (STSC)	Y	18
Carroll County Health Dept.	Y	11
HERO (STSC)	N	5
HERO	N	4
Maryland Community Kitchen (STSC)	N	4

Source: BCHD data.

* These providers each were nominated two times or fewer: UMD PLUS Program, Harford County Health Department (STSC), Chase Brexton (STSC), UMD Jordan Center, GBMC Community Health.

Table 18

Harford County Clients Who Saw Multiple Providers (N=92 Clients)

Service provider*	***Provider located in client's jurisdiction?***	***Times nominated as a provider***
Harford County Health Dept. (STSC)	Y	87
Hopkins Moore Clinic (STSC)	Y	54
HERO	N	24
Maryland Community Kitchen (STSC)	N	17
Hopkins Moore Clinic	N	16
JHU Gynecology/Obstetrics	N	16
HERO (STSC)	N	14
UMD PLUS Program	N	5

Source: BCHD data.

* Each of these providers were nominated two or fewer times: Chase Brexton, UMD Jordan Center, UMD PACE Clinic, STAR, BSAS (STSC), BCHD (STSC), JHU Bayview, JHU Pediatric/Adolescent, AIDS Action of Baltimore, HAVEN (STSC), and one unknown provider.

Table 19
Howard County Clients Who Saw Multiple Providers (N=83 Clients)

Service provider*	***Provider located in client's jurisdiction?***	***Times nominated as a provider***
Howard County Health Dept. (STSC)	Y	74
Hopkins Moore Clinic (STSC)	Y	58
UMD PLUS Program (STSC)	N	26
HERO	N	20
HERO (STSC)	N	13
JHU Gynecology/Obstetrics	N	8
UMD PLUS Program	N	6
Maryland Community Kitchen (STSC)	N	6
Anne Arundel County HD (STSC)	N	4
Chase Brexton	N	4
UMD Jordan Center	N	4

Source: BCHD data.

* These providers each were nominated two times or fewer: Hopkins Moore Clinic, UMD Adolescent Clinic, JHU Pediatric/Adolescent, STAR, Bon Secours, BCHD STD Clinic, Carroll County Health Department, and one unknown provider.

Table 20
Queen Anne's County Clients Who Saw Multiple Providers (N=12 Clients)

Service provider*	***Provider located in client's jurisdiction?***	***Times nominated as a provider***
Queen Anne's County Health Dept. (STSC)	Y	12
Hopkins Moore Clinic (STSC)	Y	11

Source: BCHD data.

*These providers each received one nomination: Hopkins Moore Clinic, HERO, Maryland Community Kitchen (STSC), BSAS (STSC), South Baltimore Family Health Center.

Table 21
Clients Residing Outside the Baltimore EMA Who Saw Multiple Providers (N=23 Clients)

Service provider*	***Provider located in client's jurisdiction?***	***Times nominated as a provider***
STSC funds at JHU Moore Clinic	N/A	17
Queen Anne's County Health Dept. (STSC)	N/A	6
HERO (non-STSC)	N/A	5
JHU Moore Clinic	N/A	4
HERO (STSC)	N/A	3

Source: BCHD data.

*These providers each received two or fewer mentions: JHU Gynecology/Obstetrics, Maryland Community Kitchen (STSC), Stella Maris Hospice, Anne Arundel County Health Department (STSC), Baltimore County Health Department (STSC), Harford County Health Department (STSC), Howard County Health Department (STSC), PACE Clinic, PLUS Program, Maryland Community Kitchen, HAVEN (STSC), BSAS (STSC).

5. CONCLUSIONS

As noted earlier, the current data-collection and organization protocols were designed for purposes other than an analysis of the frequency with which non-Baltimore City residents enter the city to receive CARE Act-funded services, the initial question that led to this project. Even so, it is a testament to the comprehensiveness of the current protocols, as well as to the hard and careful work of area service providers, BCHD and ABC that it is possible to use the data as currently reported and organized to begin to understand something of the overall shape of inter-jurisdiction service utilization in the Baltimore EMA.

Before analysis could proceed, certain aspects of the data organization made it advisable to divide the set of all clients who received CARE Act-funded services in the Baltimore EMA in 2003 into two subsets: those clients who saw only one provider "(single-provider clients") and those clients who saw more than one provider ("multiple-provider clients"). In turn, the single-provider subset was then organized by services received, while the multiple-provider subset was organized by county of residence. This organization permitted some understanding of the volume of clients that crosses jurisdictions in order to receive services. Unfortunately, this approach does not make it possible to compare the two groups directly, nor does it indicate the frequency with which clients seek services outside of their home jurisdiction.

5.1 Inter-jurisdictional Travel

In general, relatively few single-provider clients appeared to be making their way from the suburban jurisdictions into the city for services. Those that did so were in search of services in only 3 of the 10 categories this report considered: primary medical care; mental-health care; and oral-health care. Even knowing this, however, it is not possible to determine the exact numbers of non-Baltimore City residents that entered the city for services, since — under current data-collection protocols — it is not possible to distinguish between the city and county locations of those providers offering services in more than one jurisdiction, such as HERO, Chase Brexton and the Moore Clinic. Only in the category of oral health is it possible to state conclusively that a significant proportion of single-provider clients residing outside Baltimore City traveled downtown to receive services. Eight clients, or more than a third of the total 21 single-provider clients seen for oral health care in 2003, lived outside the city but received oral health care at the University of Maryland's Baltimore City-based PLUS Program.

The data on multiple-provider clients at first glance appears to suggest that there is more inter-jurisdictional movement among this group than among single-provider clients. However, it is important to remember that the organization of the original dataset compels us to discuss numbers of clients crossing boundaries in the case of single-provider clients as opposed to numbers of times a cross-boundary provider is mentioned by multiple-provider clients, and so the totals in the two categories are not directly comparable. Nonetheless, it does seem accurate to say that inter-jurisdictional movement is more pronounced among multiple-provider clients than among single-provider clients. Demographic data indicate that multiple-provider clients are more likely to be in poorer health, which supports the idea that they would need the services of a greater number of specialists.

Multiple-provider clients residing in all of the suburban jurisdictions traveled to the city for services to varying degrees, represented at the high end by residents of Baltimore County, where more than a third of all mentions of providers in all records of multiple-provider clients residing

in that county indicated visits to providers based in Baltimore City. Harford and Howard counties scored high as well, with almost a fifth of provider mentions by multiple-provider residents of those counties indicating visits to the city for services. Perhaps not surprisingly, residents of the jurisdiction farthest from Baltimore City, Queen Anne's County, were the least likely to have mentions of city-based providers in their records, only 7.1 percent.

As intriguing as some of these findings may be, they are nothing more than previews of the sort of information that would become available if data reporting and organization protocols were altered slightly, in order to allow direct analysis of what services were provided in what physical locations, with what frequency, and to residents of which counties. As things currently stand, it is not possible to draw all of these strands together into one complete picture of inter-jurisdictional service utilization in the Baltimore EMA.

5.2 Improving Data Collection and Entry

Four changes to current data reporting and organization protocols would vastly increase the utility of the provider-reported data and of ABC's and BCHD's datasets. These changes would demand significant time investment in the short run, but would pay rich dividends by permitting more in-depth and informative utilization analyses in the future.

1. Devise a standard definition of a client's "visit" to a service provider, and impress upon all EMA service providers the rationale for adopting it, at least for the purposes of reporting service utilization to ABC and BCHD.

   The problem with the current definition of a client visit is that each provider sets its own definition depending on its internal procedures. For example, a clinic offering a variety of services from several types of providers may refer to a patient's interaction with each different practitioner as a separate visit even if all of those interactions occurred on the same day. However, a different clinic similarly structured may refer to those interactions as a single visit because they all occurred on the same day. In other words, what the first provider would consider four visits, the second provider would consider one visit.

   Standardizing the definition of a visit would enable greater understanding of the frequency with which clients seek services. This standardized definition may be imprecise for some services, but that is an acceptable risk considering that the current practice results in frequency data that is so unusable that it might as well not be collected at all.

2. Enter data into the database in such a way as to preserve the connection between each service provided and the provider from whom it was obtained (e.g., provider code and service code could be combined at entry, enabling queries by provider, service or the combination of the two).

   Currently, codes are entered in the database for each type of service received and for each service provider visited by the client, but no link is established between the service and the provider from whom the service was received. If a client visited the Moore Clinic and Chase Brexton and received primary medical care and case management, there is no way to know which of those two services was received from which of those two providers. Preserving the connection between service received and provider visited would enable more accurate analysis of clients' care-seeking behaviors.

3. Modify the service provider coding system to provide unique codes for each physical location of multi-location providers (e.g., for a Baltimore City provider with a code of 0000, that provider's Baltimore County location could be identified as 0000-1, and so on).

Some providers, such as Chase Brexton, have physical clinic locations in more than one jurisdiction. However, a single code is used to identify the provider in the database. Therefore, it is not possible to tell whether a client who received services from Chase Brexton received them at the provider's Baltimore City location or Baltimore County location. Using a unique code for each physical provider location would allow a more accurate picture of client travel patterns to emerge.

4. To reduce the chances for input error, exploit the full capabilities of spreadsheet and database software, in particular by setting it to disallow invalid entries such as nonexistent provider codes, ZIP codes, etc.

   Leveraging such error-checking technologies could not only prevent data-entry mistakes, but could identify reporting mistakes. For example, if a provider reported providing a service, but inadvertently omitted the funding stream used to pay for the service, currently that record would be entered in the database with no indication that it was incomplete. If the database were modified to disallow incomplete or invalid entries, entry of the record could be prohibited until the omitted data were obtained

These four changes would vastly increase the level of detail that would be possible in future analyses of service utilization in the Baltimore EMA — to the ultimate benefit of area HIV service consumers.