



Defining Treatment Communities and Estimating Community Impacts

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EVALUATION
TECHNICAL
ASSISTANCE BRIEF

No. 1

OVERVIEW

The primary goal of the OAH-funded Tier 1B grant program is to scale-up teen pregnancy prevention efforts in order to achieve broader community-wide impacts. In contrast to evaluating impacts with a targeted group of youth participating in evidence-based programs (EBPs), as is more familiar to many of us, this evaluation effort seeks to assess impacts at the community level. Accordingly, a key first step is to define your community.

This brief provides guidance on defining treatment communities for the purposes of an evaluation. We also provide a hypothetical example of how to find an impact estimate at the community level using a three-step process. We then provide some guidance on how to interpret this impact estimate based on different levels of community saturation.

A CONCEPTUAL DEFINITION OF TREATMENT COMMUNITIES

OAH is most interested in understanding the impact of your strategy when it is fully implemented to scale in one or more high-need communities. That means you should try to estimate the effect of your scale-up strategy, including all of its components (EBPs, linkages and referrals, community mobilization, public awareness campaign), in communities whose youth are exposed to these strategies intensively enough so that community norms begin to change and outcomes are affected for a substantial portion of eligible youth.

Treatment communities should be conceptually defined as geographic areas in which:

- (1) all components of the strategy are available to youth, families, and community members who reside in the community, and
- (2) a substantial proportion of eligible resident youth are affected by these components, directly or indirectly.

For example, these communities could be school districts, ZIP codes, cities, or counties. It is best to identify communities at the smallest geographic unit possible (e.g., identifying all the zip codes that make up a county would be better than identifying the entire county).

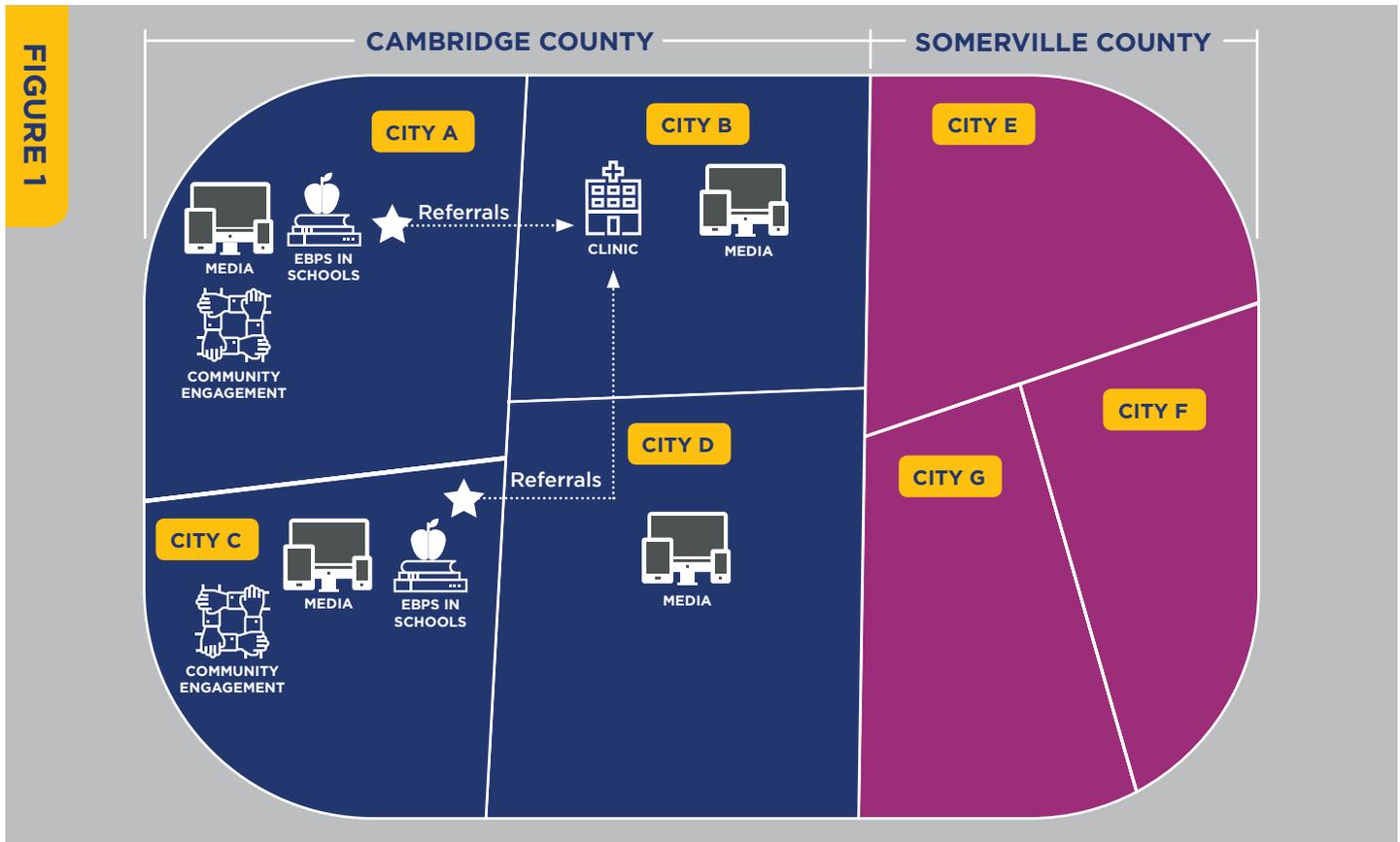
But what should you do if youth live in one place but participate in services in another? For example, a scaled-up strategy in a rural community might provide referrals to youth-friendly health services located in a nearby urban community. In such cases, **it is best to define your community based on where most youth receiving services live**, rather than by where your programs or services are actually located. However, you do not need to include all youth who receive services in your evaluation. For example, if your target community includes all middle schools in City A, you do not need to include the nearby City B in your evaluation just because a small proportion of students enrolled in City A's schools reside in City B. This is because the majority of youth you are targeting live in City A, and you are unlikely to change community norms and health outcomes in City B simply by providing services to a handful of youth.

STEP 1: IDENTIFY COMMUNITIES WHERE ALL COMPONENTS OF THE STRATEGY ARE AVAILABLE TO YOUTH

The first step in defining a treatment community is to identify geographic areas in which youth have access to all or most program components. Consider the following hypothetical example: The Abt Community Initiative consists of school-based EBPs, linkages and referrals, community mobilization, and a TPP awareness media campaign. The initiative is being implemented in Cambridge County, which comprises four cities: A, B, C, and D. As shown in Figure 1, Abt provides its full slate of services to students in middle, high, and alternative schools in Cities A and C. The students in these schools participate in EBPs in school, are exposed to a citywide media campaign, and get referrals to healthcare services at a youth-friendly clinic located in City B, which is the county seat. In addition, there is a community advisory group (CAG) and youth leadership council (YLC) engaged in mobilization efforts. In Cities B and D, Abt is implementing only the county-wide TPP awareness media campaign.

(Although the clinic to which youth are referred is located in City B, youth in City B are not actually getting referrals to the clinic). Somerville County, also urban, has three cities: E, F, and G. No TPP services are being provided by Abt in these cities.

For evaluation purposes, Abt should conceptualize Cities A and C as two separate treatment communities, because all components of the strategy are available in these cities. Abt would not want to define all of Cambridge County as a single treatment community because the strategy is only being fully implemented in Cities A and C. City D would not make a good candidate for the treatment group because only the media campaign is being implemented there, which is not enough to constitute a fully scaled-up strategy. City B also would not make a good candidate for the treatment group: although students are being referred for services at a clinic in City B, youth who actually live in that city are not themselves targeted to receive those services. Cities E, F, and G in Somerville County would not be good candidates for the treatment group because no services are being explicitly provided to youth in those cities. However, they might make good candidates for the comparison group.



Considering Levels of Saturation

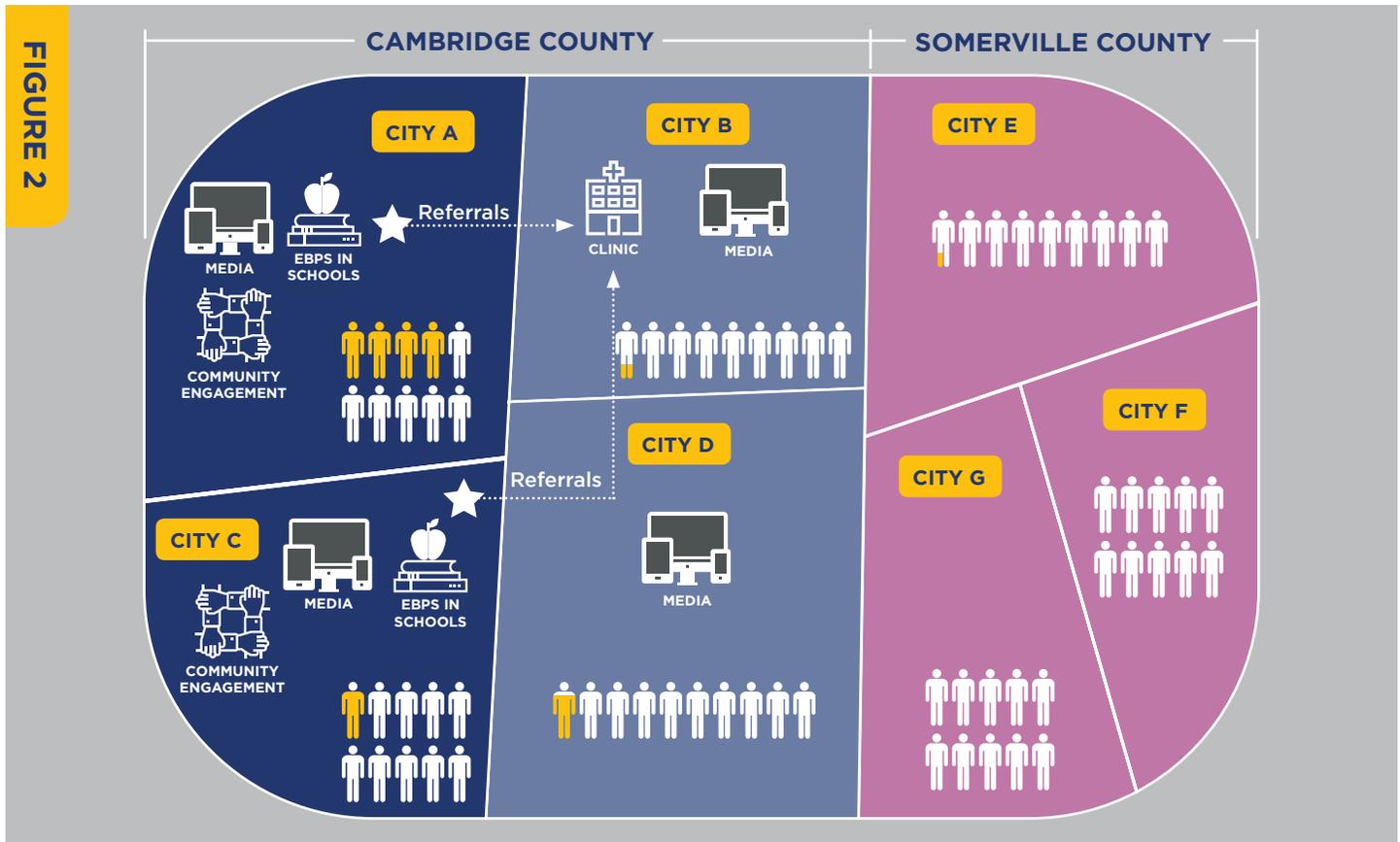
When defining your communities for evaluation purposes, select areas where all of your scale-up strategy is being implemented with a sufficient number of youth, families, and community members for the strategy to have a chance of having impacts that are detectable at the community level. In other words, select areas with adequate saturation. In considering levels of saturation, it is important to know the **proportion of youth reached by EBPs as well as the reach and intensity of non-EBP components**.

To assess the proportion of youth reached, calculate the proportion of eligible youth that will directly participate in an EBP. After defining what constitutes “eligible youth,” determine the total number of eligible youth during the course of the evaluation. For example, if eligible youth are defined as 7th-12th graders, find a count of how many youth will be in grades 7-12 while your strategy is being implemented. You also know, from your grant proposal, how many youth you plan to directly enroll in EBP(s). Dividing the number of youth you plan to enroll in EBP(s) by the number eligible gives you an estimate of the proportion of eligible youth that will participate in an EBP.

$$\text{Saturation of EBPs} = \frac{\text{Number of youth enrolled in EBPs}}{\text{Number of Eligible Youth}}$$

Aside from EBPs, your scale-up strategy has other important components – community mobilization, linkages and referrals to youth-friendly health care, and public education campaigns. You might not be able to calculate the exact proportion of youth who will benefit from these activities. However, you can try to get a sense of the number of components being implemented in the community as well as the intensity of the activities.

There is no hard and fast rule for what constitutes a sufficient degree of saturation for evaluation purposes. However, considering the proportion of youth reached (via EBPs and other components) and the number of components implemented across communities should help you identify your treatment communities for the evaluation. For example, after you have estimated the degree of saturation in each community, it may quickly become apparent that some communities should be considered treatment communities for the purposes of the evaluation and others should not.



STEP 2: IDENTIFY COMMUNITIES IN WHICH A SUBSTANTIAL PROPORTION OF YOUTH ARE EXPOSED TO ALL COMPONENTS OF THE STRATEGY

Once you have identified communities in which all or most program components are available, the second step is to determine which of those communities is sufficiently saturated. Continuing the previous hypothetical example: In Step 1, Abt identified Cities A and C as potential candidates for the treatment group. In Step 2, Abt assesses community-level saturation for Cities A-G both to narrow down the treatment group and to assess the feasibility of using Cities E-G as a comparison group. (Remember that saturation should be assessed by residence, not by location of service receipt. This results in some saturation in communities in which no services are offered). Figure 2 (Page 3) shows the saturation level for each community.

Using Figure 2 as a guide, Abt selects only City A as the evaluation's single treatment community. In City A, roughly 40 percent of youth are exposed to an EBP, the media campaign is implemented with high intensity, youth receive referrals to the clinic located in City B, and the CAG and YLC are actively engaged in mobilization efforts. Abt can rule out City C as a treatment community because even though all components of the strategy are available to youth, only a very small portion of youth – less than 10 percent – are actually being exposed to EBPs. Figure 2 confirms that Cities B and D are not good candidates, because as expected very few youth receive services (although a few are exposed, perhaps because they commute to Cities A or C for school). Likewise, the media campaign is being implemented with only low intensity in these cities.

Figure 2 also helps Abt narrow down the candidates for the comparison group. Cities F and G would be good comparisons—as long as they are demographically similar to City C—because no youth are exposed to the initiative's components. City E would not make a very good comparison because some youth in the community are exposed to parts of the strategy, which they presumably receive in Cities A or C.

It is acceptable to do a community-level impact evaluation when fewer than half of eligible youth will be receiving a component of your strategy. The assumption is that other youth in the community may also be affected, either by interacting with youth who participated in the EBPs, or by having access to other scale-up components, or both. However, if only 1 percent or 5 percent of eligible youth are receiving an EBP, or if you are only implementing low-intensity non-EBP components (e.g., a public education campaign), you will be less likely to have detectable impacts at the community-level. Therefore, you may not want to include these communities as treatment communities in your evaluation.

Data Considerations

Many evaluators start with a data source in mind, such as the Youth Risk Behavior Survey (YRBS), and try to shape the treatment communities to fit the data source. **This is almost always a mistake.** Such pre-specified data sources might measure exactly the outcome of interest, or include other measures that are not captured elsewhere. But unless the data source closely aligns with your conceptual definition of a treatment community, it is unlikely to give you the answer to the question of interest. Instead, we recommend starting with a conceptual definition of a treatment community, and then look for a data source that aligns well with this conceptual definition—even if it is not otherwise your ideal data source.

Another reason not to start with a data source such as YRBS in mind is that despite your best intentions, data may not actually be available for that source—in which case you may end up having neither a good definition of community nor good data. In particular, we anticipate that very few evaluations will have access to YRBS for the appropriate communities and time periods—so be sure to confirm this before you specify YRBS as a data source.

Calculating a Community-Level Impact

After you have defined your treatment communities, you will need to find a group of “local and focal” comparison communities that have similar geographic boundaries, but in which none of the components of the strategy are being implemented. Communities in which some but not all components are being implemented—or in which only a few youth will be affected—are best left out of the evaluation entirely (i.e., neither in the treatment nor comparison groups). In the end, your evaluation should ideally compare communities in which the full scale-up strategy is being implemented with communities in which none of the strategy is being implemented.

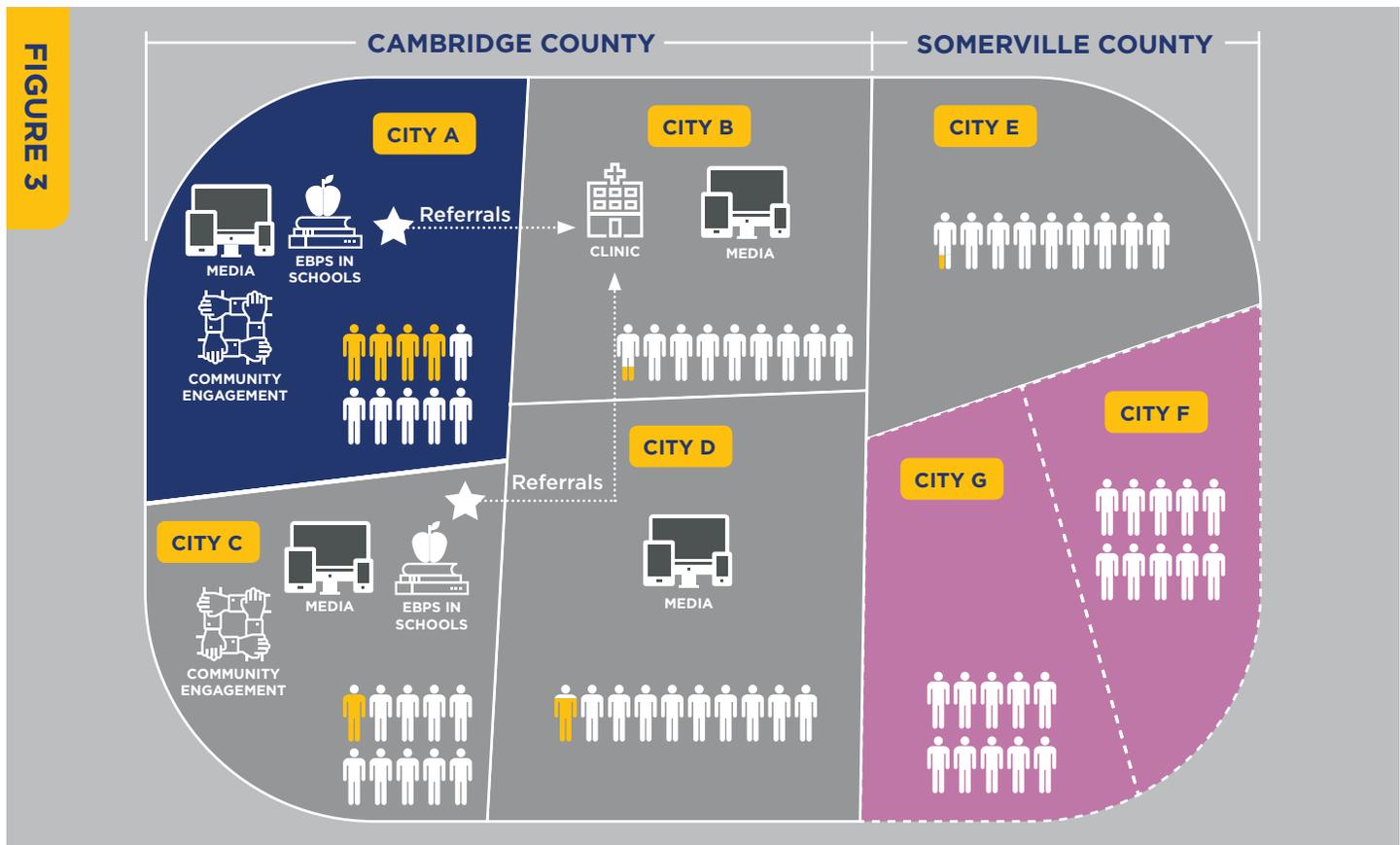
Defining Treatment Communities and Estimating Community Impacts

A variety of analytic approaches can be used to compare treatment and comparison communities to estimate an impact. Which to use depends on your sample size, data source, and the availability of historical data. The simplest approach – and the one you would use if you had a perfectly-selected comparison group – would be to compare the mean community-level outcome (e.g., birth rate) in your treatment communities with the mean outcome in your perfectly-matched comparison communities. The impact would simply be the difference in outcomes between the two groups. Regardless of the approach, your main impact estimate should reflect the effect of the strategy in treatment communities, on average for all eligible youth in the community (whether or not they enrolled in an EBP), compared with the average for all eligible youth in the communities in which no part of your strategy was implemented.

STEP 3: IDENTIFY COMPARISON COMMUNITIES THAT ARE NOT EXPOSED TO ANY COMPONENTS OF THE SCALE-UP STRATEGY AND ESTIMATE THE COMMUNITY-LEVEL IMPACT

Continuing with the previous hypothetical example: Figure 3 shows that Abt decided to define City A as the sole treatment community. For a matched comparison group, Abt selects nearby cities F and G, because no community members are receiving OAH-funded services and the cities have similar baseline demographic characteristics to City A. Using vital statistics birth records measured at the ZIP code level, which closely aligns with the cities in question, Abt measures the following birthrates at follow up:

Community	City Teen Birthrate at Follow-Up (2019)
City A	40 per 1000
City F	45 per 1000
City G	65 per 1000



Using only this information, Abt calculates a treatment group birthrate of 40 per 1000, and a comparison group average birthrate of 55 per 1000. Taking the difference, Abt could claim that “After implementing all components, and enrolling 40 percent of eligible students in an EBP over three years, the Abt Community Initiative reduced the city-level birthrate by 27 percent” (15 per 1000 divided by 55 per 1000). In terms of success of the intervention, one might frame these results in the same way if all components had been implemented and 20 percent of eligible students enrolled in an EBP, and the birthrate had been reduced by 13.5 percent -- i.e., essentially the same “bang for the buck.”

Key Points

- *A community can be defined by a variety of geographic boundaries, including zip codes, school districts, cities, or counties.*
- *A treatment community should reflect your full scale-up strategy.*
- *A treatment community should be an area in which the youth you are targeting live.*
- *Consider the proportion of eligible youth reached.*
- *Consider the number and intensity of strategy components implemented.*
- *You can conduct a strong community-level impact evaluation when fewer than half of eligible youth receive a targeted intervention.*

Authors

This brief was written by Randall Juras, Michelle Blocklin, and Kim Francis from Abt Associates for the HHS Office of Adolescent Health under Contract No. HHSP233201500069I, Task Order No. HHSP23337003T.