

Memo

To: Needs Assessment
From: Dr. Jemel Aguilar and Jeremy Goldbach
CC: HIV Planning Council
Date: 8/17/2012
Re: Growth rate calculation

Calculation of Growth Rate

We are using a growth rate equation¹ that many public health and social services researchers employ to calculate the population change of a particular group in a particular area. Measuring the change in the population of people with HIV or AIDS is further complicated by the limited information we have about the true population of the HIV planning council's catchment area. Thus, we are using alternative methods to estimate the accuracy of the growth rate in the Austin area. The results of our calculations are included in Table 1 below. The generic formula for calculating the growth rate is:

$$GR = \frac{V_{present} - V_{past}}{V_{past}}$$

According to our calculations, the growth rate for people living with HIV/AIDS in the Austin Area is 5.4. Typically, we could confirm our analysis with additional data from a needs assessment or comprehensive, generalizable survey of the population. At this point, we cannot because the needs assessment is not completed and prior assessments present some methodological problems regarding generalizability. We can, and did, calculate other rates that could be compared and contrasted with rates published by the Texas Department of State Health Services. Therefore we calculated the rate of growth of the population of PLWHA compared to the population in the Austin TGA. We estimate that in 2007 Austin had a PLWHA rate of 259 per 100,000 while the State of Texas has a rate of 264 per 100,000. On average, however, the rate for Austin-area TGA is 236 per 100,000.

Calculation of New Diagnoses Growth Rate

A significant factor to consider in examining the rate of change in the HIV positive population is the rate of change in new diagnoses of HIV/AIDS. Using data gathered from the DSHS, we estimate that the average growth rate for new diagnoses is 18.9.

Suggestions for future

¹ Le, C. T & Boen, J. R. (1994). Health and Numbers: Basic Biostatistical Methods. New York, NY: Wiley & Sons, Inc.

Further support for the rate of change in the population can identified with additional data about overall funding levels across the years, the funding by service category, overall number clients served, and number of clients served within a service category. These sources of data can also assist in estimating the rate of PLWHA that are not accessing services. Moreover, with additional data determining the rate of the Austin-area residents that are increasingly testing positive can assist the HIV planning council with determining the appropriate service needs for this newly diagnosed population. Data that can assist in answering the question – who is diagnosed recently – can be garnered from ARIES service use data collected between 2001 to the present as well as including questions about date of diagnosis in the needs assessment. We could then analyze the service needs of people diagnosed with HIV/AIDS within the past year and compare those needs against the needs of people diagnosed between 1-5 years or 6-10 years ago. This initial analysis will provide some insight into the change needs of PLWHA as they contend with the disease over time.

Table 1: Calculations

Austin Area HIV Planning Council 2010-2011 Grant Application Growth Rate Calculation

Year	Census Population ^[i] (TGA)	# of PLWHA (TGA) <i>(cases)</i>	Calculated Rate {PLWHA/pop} <i>(per 100,000)</i>	PLWHA Growth Rate <i>(percentage)</i>	New Diagnoses Austin ^[ii] (TGA) <i>(cases)</i>	New diagnosis by population {New DX/pop} <i>(per 100,000)</i>	Growth Rate ND <i>(percentage)</i>
2000	1,249,763						
2001	1,319,000	2,444	185.29				
2002	1,346,332	2,895	215.03	18.45%	293	21.76	
2003	1,376,005	3,134	227.76	8.26%	248	18.02	-15.36%
2004	1,425,159	3,327	233.45	6.16%	277	19.44	11.69%
2005	1,452,529	3,732	256.93	12.17%	280	19.28	1.08%
2006	1,513,565	3,950	260.97	5.84%	293	19.36	4.64%
2007	1,598,161	4,166	260.67	5.47%			
2008	1,652,602						
2009	1,611,755						
2010	1,655,883						
2011	1,701,065						
2012	1,747,452						
Averages			205.01	9.39%	278.20	19.57	0.52%

[i] Data derived from the American Community Survey conducted by the U.S. Census Bureau available at <http://www.census.gov/acs/www/Products/>

[ii] Personal communication, Susan Gallego Texas Department of State Health Services and http://www.dshs.state.tx.us/hivstd/planning/Epi_Profile_02012008.pdf