Appendix 2: Setting HIV Morbidity Areas

DSHS used a formula to assign HSDAs to several morbidity areas: high morbidity (Areas 1A, 1B, 1C, 1D, 1E), moderate morbidity (Area 2), lower morbidity (Area 3), and very low morbidity (Area 4). The formula has four weighted inputs: the number of persons living with a diagnosed HIV infection in 2015 (prevalence); the 2015 prevalence rate (the number of persons living with HIV in 2015 per 100,000 members of the population in the HSDA); the number of new diagnoses made among HSDA residents from 2011-2015; and 2015 new diagnosis rate (the number of diagnoses made in 2015 per 100,000 members of the population in each HSDA).

Counts of HSDA residents with HIV and rates are on different scales, so the four input values for each HSDA were transformed into four decile scores to standardize the scales. A decile score divides the range of observed values from the 26 HSDAs into ten subgroups from lowest to highest. Since there are 26 HSDAs, each decile group contains two or three HSDAs. The group of HSDAs with the lowest values on an input were assigned a decile score of one; the group with the next lowest values are assigned a score of two, and so on, with the group of HSDAs with the highest values on the input given scores of 10.

Each input had a different weight, with the scores for the numbers of new diagnoses accounting for 60% of the score, numbers of persons living with HIV accounting for 30% of the score, and prevalence rates and diagnosis rates accounting for 5% each. The highest score possible was 1,000, the lowest score possible was 100. The formula for the total score is:

Total score = (30* the prevalence decile score) + (5* the prevalence rate decile score) + (60* the new diagnosis count decile score) + (5* the diagnosis rate decile score)

For example, the Dallas HSDA score was (30*10) + (5*10) + (60*10) + (5*10) = 1,000 and the El Paso HSDA score was (30*8) + (5*9) + (60*8) + (5*7) = 800.

The decile score for each formula input and the total score for each HSDA are shown below. The natural break points in scores determined the placement of HSDAs in areas.

Table 1*: Morbidity area scores for Texas HSDAs*

	2016 Prevalence count decile	2016 Prevalence rate decile	2012-2016 new diagnosis count decile	2016 Diagnosis rate decile	Total score
Weight	*30*	*5*	*60*	*5*	
Dallas	10	10	10	10	1,000
San Antonio	10	9	10	9	990
Austin	9	10	9	9	905
Fort Worth	9	8	9	9	895
Houston (w.o. city)	9	5	9	5	860
Galveston	8	8	8	8	800
El Paso	8	9	8	7	800
Brownsville	8	6	8	6	780
Beaumont-Port Arthur	7	9	7	10	725
Tyler	7	8	7	6	700
Temple-Killeen	6	7	6	4	595
Corpus Christi	6	5	6	3	580
Lubbock	5	4	6	8	570
Lufkin	6	7	5	5	540
Bryan-College Sta.	5	6	5	8	520
Midland	4	2	5	6	460
Waco	5	5	4	3	430
Laredo	3	4	4	5	375
Texarkana	3	6	3	7	335
Amarillo	4	3	3	3	330
Abilene	3	3	3	1	290
Sherman-Denison	2	3	2	2	205
Victoria	2	2	2	2	200
San Angelo (ConchoPlateau)	1	1	2	4	175
Wichita Falls	2	1	1	1	130
Uvalde	1	2	1	3	115