

User's Background and Information

Use of Hospital Admissions Data to Estimate Seasonal Resident Population

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Related To

Part D of the Water Use Permit Information Manual:
Requirements for the Estimation of Permanent And Temporal
Service Area Populations in the Southern Water Use Caution
Area

Southwest Florida Water Management District

The following description of how hospital admissions data are to be collected and manipulated is for explanatory purposes and to describe how the data would have to be collected and manipulated if it were not available from the District.

Hospital admissions data shall be collected from the Florida Agency for Health Care Administration (AHCA). At a minimum, admissions data shall be gathered for the county of the retail water service area and each adjacent county. Patients living in one county are often admitted to hospitals in adjacent counties. Data may be collected from additional counties as well if it is believed that service area residents may be admitted to hospitals in other counties. "Emergency-only" admissions are used as seasonal residents may choose to have elective procedures conducted in their home state or province, which may skew the data. The AHCA admissions database variable name for the patient's residence ZIP Code is "ptzip."

From the selected counties, the following Florida AHCA patient admissions data shall be collected (and summed if multiple ZIP Codes) for ZIP Code(s) that encompass the retail water service area:

- a. First quarter emergency-only admissions for patients age 55 - 84 with a residence ZIP Code (ptzip) included in the retail water service area, and
- b. Third quarter emergency-only admissions for patients age 55 - 84 with a residence ZIP Code (ptzip) included in the retail water service area.

Admissions data shall be gathered for the three-year period encompassing the most recent Census year for which Census data is available: the year prior to the Census year, the Census year, and the year following the Census year. To avoid erroneous results, only those patient residence ZIP Codes that match geographic ZIP Codes on ZIP Code maps shall be utilized (i.e., eliminate unique business and institutional ZIP Codes). Admissions for non-unique post office box ZIP Codes (where residents rent boxes) shall be added to the admissions for geographic ZIP Codes in which the post office boxes are physically located.

The Census year estimated seasonal population for the service area ZIP Codes/ZCTAs is estimated as the 3-year average of the non-negative differences between 1st quarter and 3rd quarter emergency admissions for the 18 – 54 age group divided by an assumed District-wide admissions incidence (probability). The three years used to calculate the average difference shall be the year before the Census (Census – 1), the year of the Census (Census), and the year after the Census (Census + 1).

The first quarter of the year is when most seasonal residents reside in Florida and the third quarter is when the least reside in the State. The 55 - 84 age group is reflective of the age characteristics of the seasonal resident population.

The District-prescribed admissions incidence for seasonal residents is based on third quarter emergency hospital admissions for the age group 35 – 64. The emergency admissions incidence for seasonal residents is based on a younger age group because both anecdotal evidence and research indicate that the seasonal resident population is generally healthier than the equivalent age resident permanent resident population. The incidence is calculated as the 3-year average of 3rd quarter emergency admissions for the 35 – 64 age group divided by the Census year total 35 – 64 age group population for the ZIP Codes and ZCTA's in the District. Again, the three years used to estimate the average Census year admissions for this incidence are Census – 1, Census, and Census +1. For the 2000 Census, the District-wide 35 – 64 emergency admissions incidence to be used in estimating the Census year seasonal resident population is 0.011656.

An example calculation of a peak seasonal resident ratio follows.

Example Calculation of Peak Seasonal Resident Ratio Using Geographic ZIP Code 55 - 84 Year Age Group Quarterly Emergency Hospital Admissions				
Year 1 (Census -1) Admissions Differences				
Selected Service Area ZIP Codes/ZCTAs	Quarter 1 Admissions	Quarter 3 Admissions	Quarter 1 – Quarter 3 Difference Where Quarter 3 ≤ Quarter 1	
	A	B	C₋₁ = A – B	
335X1	70	50	20	
335X2	92	93	0	
335X3	76	61	15	
Year 2 (Census) Admissions Differences				
Selected Service Area ZIP Codes/ZCTAs	Quarter 1 Admissions	Quarter 3 Admissions	Quarter 1 – Quarter 3 Difference Where Quarter 3 ≤ Quarter 1	
	A	B	C = A – B	
335X1	73	55	18	
335X2	105	92	13	
335X3	74	64	10	
Year 3 (Census +1) Admissions Differences				
Selected Service Area ZIP Codes/ZCTAs	Quarter 1 Admissions	Quarter 3 Admissions	Quarter 1 – Quarter 3 Difference Where Quarter 3 ≤ Quarter 1	
	A	B	C₊₁ = A – B	
335X1	79	58	21	
335X2	110	94	16	
335X3	81	71	10	
Sum of Annual Non-Negative Admissions Differences By Geographic ZIP Code				
ZIP Codes/ZCTAs			C₋₁ + C + C₊₁ = D	
335X1			59	
335X2			29	
335X3			35	
Calculation of Estimated Census Year Peak Seasonal Resident Population				
ZIP Codes/ZCTAs	Three Year Average Difference	Overall Age 35-65 Incidence	ZIP Code/ZCTA Estimated Census Year Peak Seasonal Resident Population	Census Year ZCTA Permanent Population
	E = D/3	F	G = E / F	H
335X1	19.66667	0.011656	1,687.256921	16,814
335X2	9.666667	0.011656	829.3296728	21,552
335X3	11.66667	0.011656	1,000.915122	25,920
			I	J
Sum Seasonal (G) & Permanent (H) Populations			3,517.501716	64,286
Peak Seasonal Resident Ratio (SEASRR) = (I + J) / J = 1.05471645				