

## 2012 Georgia Tuberculosis Report

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## **Tuberculosis (TB) Surveillance in Georgia**

TB is a reportable disease in Georgia. All Georgia physicians, laboratories and other health care providers are required by law to immediately report clinical and laboratory confirmed TB cases under their care to Georgia public health authorities. TB cases may be directly reported to a County Health Department, a District Health Office, or to the state TB Program and TB Epidemiology Section of the Georgia Department of Public Health (DPH), which is responsible for the systematic collection of all reported TB cases in the state. Immediate reporting of TB cases enables appropriate public health follow-up of patients, including administration of directly observed therapy, monitoring TB treatment until completion, evaluating and screening contacts exposed to a TB case, and outbreak investigation and control.

TB cases in Georgia can be reported electronically through the State Electronic Notifiable Disease Surveillance System (SendSS), a secure web-based surveillance software developed by DPH, or by calling, mailing or faxing a report to public health authorities. Hospital infection control preventionists as well as public health nurses, outreach staff, epidemiologists, and communicable disease specialists involved in disease surveillance are encouraged to report TB through SendSS and register to become a SendSS user by logging into the system's Web site at: <https://sendss.state.ga.us> then selecting TB from the list of reportable diseases.

Public health authorities collect data on reported TB cases that include demographic, clinical, risk factor, and contact information, which are analyzed to describe the distribution of the disease among Georgia's population, identify high risk groups and TB clusters, describe trends in morbidity, mortality, drug resistance patterns, treatment outcomes, and infection rates among contacts to TB cases. The data are used at state and local levels to guide policy and decision making, set priorities for program interventions, evaluate program performance for the prevention and control of TB in Georgia, and educate key stakeholders and the general public on TB. Georgia's TB surveillance data are transmitted electronically to the U.S. Centers for Disease Control and Prevention (CDC) and become part of the national TB surveillance database.

## **Current Epidemiology of Tuberculosis in Georgia**

Georgia reported 359 new tuberculosis (TB) cases in 2012. This represents a 3.5% increase from 347 TB cases reported in 2011. TB case numbers have decreased 61% since 1991 when the peak of a resurgent period of tuberculosis occurred in Georgia (Figure 1). The TB case rate in Georgia increased from 3.5 cases per 100,000 population during 2011 to 3.6 cases per 100,000 in 2012, slightly higher than the U.S. TB case rate in 2012 of 3.2 cases per 100,000 (Figure 2). Georgia had the eighth highest TB case rate among the 50 states of the United States in 2012.

### Geographic Distribution

Among the 159 counties in Georgia, four counties in the metropolitan Atlanta area reported the highest number of TB cases in 2012: DeKalb (81 cases), Fulton (54), Gwinnett (29), and Cobb (15) (Table 1, Figure 3). These four counties accounted for 50% of TB cases reported in Georgia in 2012.

Among Georgia's 18 Health Districts, which have oversight responsibility for public health in the state's 159 counties, DeKalb Health District had the highest TB case rate in 2012 (11.5 per 100,000), followed by Albany (5.6 per 100,000) and Fulton (5.5 per 100,000) (Table 2, Figure 4).

### Sex and Age Distribution

In 2012, TB in Georgia occurred predominantly among males (232 cases, 65%), compared to females (127, 35%); while the highest proportion of TB cases by age group occurred among persons 45-64 years old (128 cases, 36%). Among males, the highest proportion of cases occurred in the 45-64 year old age group (91 cases, 39%) while among females, the highest proportion was in the 25-44 year old age group (40 cases, 31%) (Figure 5). The highest TB case rate by age group was among persons 45-64 years old (5.1 per 100,000) while the lowest was among children 5-14 years old (0.9 per 100,000) (Figure 6). The TB case rate for children younger than 5 years of age, an age group at high risk for developing deadly forms of TB, decreased from 2.3 per 100,000 in 2011 to 1.6 per 100,000 in Georgia during 2012.

### Race/Ethnicity Distribution and TB Disparities

TB disproportionately affects racial/ethnic minorities in Georgia. In 2012, non-Hispanic blacks, Asians and Hispanics, accounted for 52%, 19% and 15% of TB cases in Georgia respectively, but only represented 30.4%, 3.5% and 9.2% of Georgia's population respectively (Figure 7). Non-Hispanic whites constituted 14% of TB cases in 2012. The highest TB case rate among race/ethnic groups was among Asians (19.8 per 100,000), followed by non-Hispanic blacks (6.1 per 100,000), and Hispanics (6.0 per 100,000) (Figure 8). The black non-Hispanic TB case rate in 2012 represents an 80% decrease from the TB case rate in 1993 (30.6 per 100,000) in this population. The black

non-Hispanic TB case rate, however, was still about 7 times higher than the white non-Hispanic TB case rate (0.9 per 100,000) in Georgia during 2012 (Figure 9).

## **High-Risk Populations**

### Foreign-Born

TB cases among persons born outside of the United States accounted for 43% of TB cases in Georgia in 2012 compared to 46% in 2011. Most foreign-born cases reported in 2012 came from Mexico (18%), Ethiopia (12%), and India (10%) - countries where TB is an endemic disease (Figures 10-11). Among 154 foreign-born cases, 60 (39%) were diagnosed in the first five years of their arrival in the U.S.

In 2012, four Health Districts reported 69% of the total number of foreign-born TB cases in Georgia: DeKalb (64 cases), Gwinnett (21), Fulton (12) and Cobb (10). Among these Health Districts, foreign-born TB cases accounted for more than half of the TB cases in DeKalb (79%), Lawrenceville (68%), and Cobb (59%). Foreign-born TB cases in the Fulton Health District accounted for 22% of reported TB cases in Fulton.

### HIV Co-Infection

All TB patients need to be tested for HIV infection because TB treatment may change when antiretroviral therapy for HIV is given, and active TB often accelerates the natural progression of HIV infection. Among 334 TB cases in Georgia with known HIV status in 2012, 12% were HIV-positive compared to 10% in 2011 (Figure 12). Among 39 HIV co-infected TB cases in 2012, 74% were non-Hispanic blacks, 74% were male and 51% were 25-44 years old.

HIV status was reported in 93% of TB cases in 2012 compared to 89% in 2011. In the high-risk age group of adults 25-44 years of age, the percentage of TB cases for which HIV was reported was 94% in 2011 and 97% in 2012. Among 25 TB cases whose HIV status was not reported, HIV testing was not offered to eight cases (32%), the HIV test result was unknown in six cases (24%), and eleven (44%) refused testing. The proportion by age group among the TB cases that were not offered the HIV test was highest among children 0-14 years old (4 cases, 50%); HIV testing was not offered in two cases each in the age group of 25-44 years old and those older than 65 years.

### Congregate Settings and Substance Abuse

Persons residing in crowded congregate settings such as homeless shelters, prisons, and nursing homes are at risk for acquiring TB. In 2012, 37 (10%) TB cases in Georgia were homeless, 19 (5%) were residents of correctional facilities at the time of TB diagnosis, and 6 (2%) were residents of long-term care facilities (Figure 13). Of the 19 TB cases incarcerated in correctional facilities, six (32%) were inmates in state prisons, eight (42%) in county jails, four (13%) in the Immigration and Custom Enforcement Detention Center in Stewart County, and five (26%) were in federal prisons.

Substance abuse is the most commonly reported behavioral risk factor among patients with TB in the United States. TB patients who abuse substances often experience treatment failure and remain infectious longer because treatment failure presumably extends periods of infectiousness. In Georgia, abuse of either illicit drugs or alcohol was reported in 69 (19%) of TB cases in 2012 (Table 3, Figure 13).

### Pediatric TB

TB in children is considered a sentinel public health event because it often indicates recent transmission from an infectious adult case. Additionally, potentially lethal forms of TB such as TB meningitis or disseminated TB can develop in very young children. In 2012, children younger than 15 years old comprised 6% of Georgia TB cases; 11 cases (1.6 per 100,000) were reported in children younger than 5 years old, 12 cases (0.9 per 100,000) were reported in children 5-14 years old. One child had TB meningitis.

Latent tuberculosis infection (LTBI) in children younger than five years old is also a reportable disease in Georgia. When LTBI in a child less than five years of age is reported, public health personnel will initiate contact investigations to identify the source of the infection, recommend treatment for latent TB infection, follow up with the child to ensure completion of treatment and monitor for development of active TB disease. Early identification of TB infection and treatment in children can prevent progression to active disease and identify a previously undiagnosed and untreated case of active TB. In 2012, 56 children younger than five years old were reported to have LTBI in Georgia; 34 were identified by TB screening in pediatric clinics, and 22 from contact investigations. Public health staff identified the source case of the child's infection in 33 (59%) of these children.

### **Drug Resistance**

Among 201 culture-positive TB cases in Georgia during 2012, 100% were tested for initial drug susceptibility to the three first-line anti-TB medications: isoniazid (INH), rifampin (RIF), and ethambutol (EMB). Of 238 tested isolates from Georgia cases with no previous history of TB, 24 (10.1%) had primary resistance to INH, three (1.3%) to RIF, and three (1.3%) to EMB (Table 4). One (0.4%) case in 2012 had multidrug-resistant TB case (MDR-TB, i.e., TB resistant to at least INH and RIF). The percentage of cases with primary INH resistance (INH-R) ranged from 7% to 14% in the past five years while an average of two MDR-TB cases per year was reported in Georgia over that same time period (Figure 14).

### **Indicators of Infectiousness**

Persons with pulmonary or laryngeal TB have the potential to infect others with TB, and infectiousness is higher if their sputum smears are positive for acid-fast bacilli (AFB), sputum cultures are positive for *Mycobacterium tuberculosis*, or cavitory lesions are present on chest radiography. In 2012, 77% of all Georgia TB cases had pulmonary

TB, 56% had sputum cultures that were positive for *Mycobacterium tuberculosis*, 40% were sputum AFB smear-positive, and 23% showed cavitary lesions on chest radiography.

### **Initial Diagnosis, Health Provider Data, and Directly Observed Therapy**

In Georgia, the majority of TB patients are initially diagnosed in a hospital and patients are followed up by county health departments after discharge to continue their TB treatment. In 2012, 214 (60%) of the 359 TB cases in Georgia were reported initially by a hospital. Eight hospitals in Georgia reported five or more TB cases in 2012: Grady Memorial Hospital (49 cases), DeKalb Medical Center (13 cases), Gwinnett Medical Center (12 cases), Northside Hospital (11 cases), Phoebe Putney Memorial Hospital in Albany (9 cases), Atlanta Medical Center (8 cases), Children's Healthcare of Atlanta at Scottish Rite (5 cases), and Crisp Regional Hospital (5 cases). These eight hospitals accounted for more than half of all patients hospitalized for TB in Georgia in 2012.

County health departments provided case management for 77% of all Georgia TB cases, 13% of cases were treated by health department and private physician, correctional facilities treated 4%, 4% of cases were cared for solely by a private physician and only 2% were managed solely as in-patients. County health department staff provides directly observed therapy (DOT) to TB patients, which entails watching a patient swallow every dose of their TB medications for at least 6 months. Among 261 Georgia TB cases reported in 2012 with available case completion data, 89% received TB treatment entirely by DOT, 11% were treated by a combination of DOT and self-administered therapy, and less than 1% self-administered their medications for the entire duration of their treatment.

### **TB Mortality**

Ten persons died of TB in Georgia in 2011, the most recent year with available mortality statistics. The age-adjusted TB mortality rate in 2011 was 0.1 per 100,000. From 2007 to 2011, an average of 14 people died of TB in Georgia each year.

### **TB Contact Investigations and Latent TB Infection**

Public health authorities routinely conduct a contact investigation among persons exposed to a TB case to identify secondary TB cases and contacts with latent TB infection (LTBI). Index TB cases with positive acid-fast bacillus (AFB) sputum-smear results or pulmonary cavities have the highest priority for investigation. During a contact investigation, public health staff ask recent contacts to a case if they have TB-like symptoms, administer a TB skin test (TST) or interferon gamma release assay (IGRA), repeat the TST or IGRA 8-10 weeks after the last exposure to the index case if the initial TST or IGRA is negative, and have a chest radiology exam performed if the TST or IGRA is positive. Persons with LTBI have a positive TST or IGRA, but are asymptomatic and have a normal chest radiology exam. They are not contagious but

have a 10% chance of developing TB disease later in life if they do not receive treatment for LTBI.

Among 5,143 identified contacts of all Georgia TB cases reported in 2011 (the most recent year with completed contact investigation data), 4,229 (82%) were completely evaluated for TB disease and LTBI. Of the completely evaluated contacts, 919 (22%) had LTBI and 20 (0.5%) had TB disease. Among the 919 contacts with LTBI, 594 (65%) started LTBI treatment and among these contacts who started LTBI treatment, 411 (70%) completed LTBI treatment, 83 (14%) were lost to follow-up, 49 (8%) chose to stop LTBI treatment on their own, 30 (5%) moved, 10 (2%) had adverse side-effects, 5 (1%) stopped due to a provider's decision, and 2 (.3%) developed active TB (Figure 16).

Among 2,815 completely evaluated contacts of acid-fast bacilli (AFB) sputum smear positive cases reported in 2011, 658 (24%) were diagnosed with latent TB infection and 13 (0.5%) were diagnosed with active TB. Of the 658 contacts with LTBI, 425 (66%) were started on LTBI treatment, and of those started on LTBI treatment, 301 (71%) completed treatment (Tables 7-9).

### **TB Program Objectives:**

Objective 1: By 2015, 93% of Georgia TB patients will complete a course of TB treatment within 12 months of starting treatment.

Among 289 TB cases reported in 2011 that were eligible to complete TB treatment within 12 months and had data on treatment completion, 281 (97%) completed TB treatment and 260 (90%) completed treatment within 12 months; 6 (2%) were lost to follow-up and 2 (0.7%) had to stop treatment due to adverse reactions to TB medications. Among 21 TB cases that completed TB treatment but extended treatment beyond 12 months, eight cases had data explaining why treatment was extended entered in the surveillance database: four extended TB treatment due to a clinical indication, three had adverse reactions to the TB medications and were non-adherent to TB treatment, and one had an adverse reaction to the TB medications. Of the other cases who extended TB treatment, four had bone/joint TB and their extended TB treatment may have been a health provider decision, three were co-infected with HIV and had other problems that may have affected treatment adherence (homelessness, foreign-birth, TB of the brain), one was in a correctional facility at the time of TB diagnosis and was hard to locate after discharge from the correctional facility, one was foreign-born and had language/cultural barriers to treatment completion, and one had abused illegal drugs which made treatment adherence difficult (Figure 15).

Objective 2: By 2015, achieve 65% sputum culture conversion documented within 60 days of treatment initiation for patients with positive sputum culture results.

Among 161 patients with positive sputum culture results in 2011 who did not move out of the U.S. while on treatment, 142 (88%) had documented sputum culture conversion

and 109 (68%) had sputum conversion documented within 60 days of treatment initiation (median = 31 days), exceeding the target for this objective. Overcoming barriers to treatment adherence is constantly emphasized during case reviews to achieve this objective.

Objective 3: By 2015, increase the proportion of contacts of acid-fast bacilli (AFB) sputum smear positive TB cases in Georgia who are evaluated for TB infection or disease to 93%.

Among 3,519 contacts to AFB sputum smear positive patients in 2011, 2,815 (80%) were completely evaluated, meeting the program target for this objective (Table 7). Among the 704 contacts that were not completely evaluated, 491 had data on reasons for incomplete evaluation. Of these, 227 (46%) contacts refused evaluation or were uncooperative, 144 (29%) were lost to follow-up, 46 (9%) died, 25 (5%) moved, 13 (3%) were still being followed up, and 36 (7%) had “Other” selected as the reason for incomplete evaluation. The most common step missed in obtaining a complete evaluation was not returning for a second tuberculin skin test (TST) when the first TST is negative; among 1,080 contacts with a negative TST on the first round of testing who required a second TST, 340 (31%) did not receive a second TST.

Objective 4: By 2015, among infected contacts of acid-fast bacilli (AFB) sputum smear positive TB cases in Georgia, at least 70 percent who started therapy for latent TB infection (LTBI) will complete LTBI therapy.

Among 422 infected contacts of SSP TB patients started on LTBI treatment in 2011 with data on treatment completion, 301 (71%) completed treatment, 65 (15%) were lost to follow-up, 25 (6%) chose to stop treatment on their own, 19 (4%) moved, 6 (1%) stopped treatment due to adverse side effects, 4 (0.9%) stopped treatment due to a provider’s decision, and 2 (0.5%) developed active TB (Tables 8-9).

**Table 1. Number of TB Cases and TB Case Rates\* per 100,000 population by County, Georgia, 2011-2012**

COUNTY	2011		2012	
	Number of cases	Case Rate	Number of cases	Case Rate
Appling	0	0	<5	--
Atkinson	<5	--	<5	--
Bacon	0	0	0	0
Baker	<5	--	0	0
Baldwin	<5	--	<5	--
Banks	0	0	0	0
Barrow	<5	--	<5	--
Bartow	0	0	0	0
Ben Hill	0	0	0	0
Berrien	0	0	5	26.3
Bibb	7	4.5	<5	--
Bleckley	<5	--	0	0
Brantley	<5	--	0	0
Brooks	<5	--	0	0
Bryan	0	0	<5	--
Bulloch	<5	--	0	0
Burke	0	0	<5	--
Butts	0	0	0	0
Calhoun	<5	--	0	0
Camden	0	0	0	0
Candler	0	0	0	0
Carroll	0	0	0	0
Catoosa	<5	--	0	0
Charlton	0	0	0	0
Chatham	6	2.2	9	3.3
Chattahoochee	0	0	0	0
Chattooga	<5	--	<5	--
Cherokee	<5	--	<5	--
Clarke	<5	--	<5	--
Clay	0	0	<5	--
Clayton	9	3.4	13	4.9
Clinch	<5	--	<5	--
Cobb	16	2.3	15	2.1
Coffee	0	0	<5	--
Colquitt	<5	--	<5	--
Columbia excludes ASMP	4	3.1	<5	--
Augusta State Med Prison (ASMP)	16	na	6	na
Cook	0	0	0	0
Coweta	<5	--	<5	--
Crawford	0	0	0	0
Crisp	<5	--	<5	--
Dade	0	0	0	0
Dawson	0	0	0	0
Decatur	<5	--	0	0
DeKalb	76	10.9	81	11.5
Dodge	<5	--	0	0
Dooly	0	0	5	34.9
Dougherty	5	5.3	9	9.5

Douglas	<5	--	<5	--
Early	0	0	0	0
Echols	0	0	0	0
Effingham	<5	--	<5	--
Elbert	0	0	<5	--
Emanuel	0	0	<5	--
Evans	<5	--	<5	--
Fannin	<5	--	0	0
Fayette	<5	--	<5	--
Floyd	<5	--	<5	--
Forsyth	<5	--	0	0
Franklin	<5	--	0	0
Fulton	45	4.7	54	5.5
Gilmer	0	0	0	0
Glascok	0	0	0	0
Glynn	<5	--	<5	--
Gordon	0	0	<5	--
Grady	<5	--	<5	--
Greene	<5	--	0	0
Gwinnett	48	5.8	29	3.4
Habersham	0	0	<5	--
Hall	8	4.4	<5	--
Hancock	<5	--	0	0
Haralson	0	0	<5	--
Harris	0	0	0	0
Hart	<5	--	0	0
Heard	0	0	0	0
Henry	<5	--	<5	--
Houston	<5	--	<5	--
Irwin	<5	--	0	0
Jackson	0	0	<5	--
Jasper	0	0	<5	--
Jeff Davis	0	0	0	0
Jefferson	0	0	0	0
Jenkins	0	0	0	0
Johnson	0	0	0	0
Jones	0	0	0	0
Lamar	<5	--	0	0
Lanier	0	0	0	0
Laurens	0	0	<5	--
Lee	0	0	<5	--
Liberty	<5	--	<5	--
Lincoln	0	0	0	0
Long	0	0	<5	--
Lowndes	<5	--	5	4.4
Lumpkin	0	0	<5	--
Macon	<5	--	<5	--
Madison	<5	--	<5	--
Marion	0	0	0	0
McDuffie	0	0	0	0
McIntosh	0	0	<5	--
Meriwether	0	0	<5	--

COUNTY	2011		2012	
	Number of cases	Case Rate	Number of cases	Case Rate
Miller	0	0	0	0
Mitchell	0	0	0	0
Monroe	0	0	0	0
Montgomery	0	0	0	0
Morgan	0	0	0	0
Murray	<5	--	<5	--
Muscogee	5	2.6	6	3.0
Newton	<5	--	<5	--
Oconee	<5	--	<5	--
Oglethorpe	0	0	0	0
Paulding	0	0	<5	--
Peach	<5	--	0	0
Pickens	<5	--	0	0
Pierce	0	0	<5	--
Pike	<5	--	0	0
Polk	0	0	0	0
Pulaski	0	0	0	0
Putnam	0	0	<5	--
Quitman	0	0	0	0
Rabun	0	0	0	0
Randolph	0	0	0	0
Richmond	<5	--	11	5.4
Rockdale	0	0	<5	--
Schley	0	0	0	0
Screven	0	0	0	0
Seminole	0	0	0	0
Spalding	0	0	<5	--
Stephens	0	0	5	19.3
Stewart excludes Stewart ICE Detention Center (SDC)	0	0	0	0
SDC only	4	na	5	na
Sumter	<5	--	<5	--
Talbot	0	0	0	0
Taliaferro	0	0	0	0
Tattnall	0	0	0	0
Taylor	0	0	0	0
Telfair	0	0	0	0
Terrell	<5	--	<5	--
Thomas	<5	--	0	0
Tift	<5	--	<5	--
Toombs	0	0	<5	--
Towns	0	0	0	0
Treutlen	0	0	0	0
Troup	<5	--	6	8.8
Turner	<5	--	0	0
Twiggs	0	0	0	0
Union	0	0	0	0
Upson	0	0	<5	--
Walker	<5	--	<5	--
Walton	<5	--	0	0
Ware	<5	--	0	0

COUNTY	2011		2012	
	Number of cases	Case Rate	Number of cases	Case Rate
Warren	0	0	0	0
Washington	0	0	0	0
Wayne	0	0	<5	--
Webster	0	0	<5	--
Wheeler	0	0	0	0
White	<5	--	<5	--
Whitfield	<5	--	0	0
Wilcox	0	0	0	0
Wilkes	<5	--	0	0
Wilkinson	0	0	0	0
Worth	0	0	<5	--
<b>GEORGIA</b>	<b>347</b>	<b>3.5</b>	<b>359</b>	<b>3.6</b>

Note: In counties where one to four TB cases were reported, "< 5" is used to represent the number of reported cases, and the TB case rate is not calculated.

**Table 2. Number of TB Cases and TB Case Rates\* per 100,000 population by Health District, Georgia, 2010- 2011**

Health District	2011		2012	
	Number of Cases	Case rate	Number of Cases	Case rate
1.1 Rome	5	1.1	10	1.6
1.2 Dalton	7	1.6	6	1.3
2.0 Gainesville	14	2.2	9	1.4
3.1 Cobb	20	2.4	17	2.0
3.2 Fulton	45	4.7	54	5.5
3.3 Clayton	9	3.4	13	4.9
3.4 Lawrenceville	49	4.8	31	3.0
3.5 DeKalb	76	10.9	81	11.5
4.0 LaGrange	8	1.0	13	1.6
5.1 Dublin	3	1.9	1	0.7
5.2 Macon	16	3.1	9	1.7
6.0 Augusta	8	5.1	14	3.0
Augusta State Medical Prison	16	na	6	na
7.0 Columbus	9	3.5	20	5.3
ICE Detention Center	4	na	5	na
8.1 Valdosta	9	3.5	12	4.7
8.2 Albany	18	5.0	20	5.6
9.1 Coastal	13	2.2	18	3.1
9.2 Waycross	11	3.0	10	2.7
10 Athens	7	1.5	10	2.7
<b>Total</b>	<b>347</b>	<b>3.5</b>	<b>359</b>	<b>3.6</b>

**Table 3. Percentage of TB Cases with Risk Factors for TB by Health District  
Georgia, 2012**

<b>HEALTH DISTRICT</b>	<b>Foreign-born %</b>	<b>HIV Infected %</b>	<b>Homeless %</b>	<b>Inmate %</b>	<b>Nursing Home %</b>	<b>Substance Abuse %</b>
1.1 Rome	10	0	10	10	0	30
1.2 Dalton	67	0	0	0	33	0
2.0 Gainesville	22	0	11	0	0	33
3.1 Cobb	59	18	24	0	0	24
3.2 Fulton	22	19	26	6	0	28
3.3 Clayton	54	8	8	0	0	8
3.4 Lawrenceville	68	6	0	0	0	3
3.5 DeKalb	79	15	5	1	0	6
4.0 LaGrange	8	0	0	8	0	38
5.1 Dublin	0	0	0	0	0	100
5.2 Macon	33	0	11	0	0	11
6.0 Augusta	21	21	29	0	0	21
ASMP only	0	0	0	100	0	50
7.0 Columbus	30	15	0	0	10	30
ICE only	25	0	0	0	0	0
8.1 Valdosta	0	0	25	0	0	17
8.2 Albany	15	11	5	0	5	35
9.1 Coastal	33	6	11	6	6	39
9.2 Waycross	20	10	10	0	0	0
10 Athens	30	0	0	10	0	20
<b>Georgia Total</b>	<b>43</b>	<b>12</b>	<b>10</b>	<b>5</b>	<b>2</b>	<b>19</b>

**Table 4. Primary Resistance to First-line Anti-TB Medications by Health District  
Georgia, 2012**

<b>TB Drug</b>	<b>Isoniazid</b>		<b>Rifampin</b>		<b>Ethambutol</b>	
	<b>No.</b>	<b>%</b>	<b>No.</b>	<b>%</b>	<b>No.</b>	<b>%</b>
1.1 Rome	1	17	0	0	0	0
1.2 Dalton	0	0	0	0	0	0
2.0 Gainesville	5	63	0	0	0	0
3.1 Cobb	1	8	1	8	1	8
3.2 Fulton	3	8	0	0	0	0
3.3 Clayton	0	0	0	0	0	0
3.4 Lawrenceville	2	9	0	0	0	0
3.5 DeKalb	3	7	0	0	0	0
4.0 LaGrange	0	0	0	0	0	0
5.1 Dublin	0	0	0	0	0	0
5.2 Macon	2	29	0	0	0	0
6.0 Augusta & ASMP	6	38	0	0	0	0
7.0 Columbus & ICE	0	0	1	7	1	7
8.1 Valdosta	0	0	0	0	0	0
8.2 Albany	0	0	0	0	0	0
9.1 Coastal	0	0	1	10	0	0
9.2 Waycross	1	11	0	0	0	0
10 Athens	0	0	0	0	0	0
<b>Georgia Total</b>	<b>24</b>	<b>10</b>	<b>3</b>	<b>1</b>	<b>3</b>	<b>1</b>

**Table 5. Completion of TB Treatment (Tx) by Health District, Georgia, 2010-2011**

HEALTH DISTRICT	2010		2011		No. Cases Missing data
	No. Cases that Completed Tx/No. Cases Started Tx*	%	No. Cases that Completed Tx/No. Cases Started Tx*	%	
1.1 Rome	11/11	100	3/3	100	0
1.2 Dalton	10/10	100	5/6	83	0
2.0 Gainesville	5/5	100	10/10	100	0
3.1 Cobb	24/25	96	17/17	100	0
3.2 Fulton	46/46	100	39/39	100	0
3.3 Clayton	8/8	100	5/6	83	1
3.4 Lawrenceville	56/60	93	44/45	98	0
3.5 DeKalb	77/78	99	66/68	97	0
4.0 LaGrange	7/10	70	7/7	100	0
5.1 Dublin	1/1	100	3/3	100	0
5.2 Macon	15/15	100	11/12	92	0
6.0 Augusta	15/16	94	7/7	100	0
ASMP only	17/18	94	16/16	100	0
7.0 Columbus	10/10	100	6/6	100	0
ICE only*	na	na	na	na	na
8.1 Valdosta	8/8	100	9/9	100	0
8.2 Albany	12/13	92	12/12	100	0
9.1 Coastal	11/11	100	10/11	91	1
9.2 Waycross	5/5	100	9/11	82	0
10 Athens	5/5	100	6/6	100	0
<b>Georgia Total</b>	<b>346/359</b>	<b>96</b>	<b>285/293</b>	<b>97</b>	<b>2</b>

**Table 6. Timely Completion of TB Treatment (Tx) among TB cases eligible for 12-month TB Tx by Health District, Georgia, 2009-2010**

HEALTH DISTRICT	2010		2011		No. cases Missing data
	No. Cases Completed Tx in 12 months/ No. Started Tx	%	No. Cases Completed Tx in 12 months/ No. Started Tx	%	
1.1 Rome	11/11	100	2/3	67	0
1.2 Dalton	10/10	100	5/6	83	0
2.0 Gainesville	4/5	80	9/10	90	0
3.1 Cobb	23/25	92	17/17	100	0
3.2 Fulton	41/44	93	37/38	97	0
3.3 Clayton	7/8	88	5/6	83	0
3.4 Lawrenceville	52/55	94	38/44	86	0
3.5 DeKalb	67/71	94	62/67	92	0
4.0 LaGrange	7/10	70	6/7	86	1
5.1 Dublin	1/1	100	1/3	33	0
5.2 Macon	12/14	86	11/11	100	0
6.0 Augusta	10/11	91	7/7	100	0
ASMP only	15/18	83	13/16	81	0
7.0 Columbus	10/10	100	6/6	100	0
8.1 Valdosta	8/8	100	6/9	67	0
8.2 Albany	11/13	85	11/12	92	0
9.1 Coastal	13/14	93	10/12		1
9.2 Waycross	5/5	100	8/10	80	0
10 Athens	5/5	100	6/6	100	0
<b>Georgia Total</b>	<b>312/338</b>	<b>92</b>	<b>260/289</b>	<b>90</b>	<b>2</b>

**Table 7. Completely Evaluated Contacts of Sputum Smear Positive Cases by Health District, Georgia, 2010-2011**

HEALTH DISTRICT	2010		2011	
	No. Contacts that were Completely Evaluated / No. Contacts Identified	%	No. Contacts that were Completely Evaluated / No. Contacts Identified	%
1.1 Rome	51/52	98	32/34	94
1.2 Dalton	32/36	89	35/46	76
2.0 Gainesville	41/50	82	36/48	75
3.1 Cobb	42/51	82	24/30	80
3.2 Fulton	253/350	72	324/348	93
3.3 Clayton	51/55	93	27/29	93
3.4 Lawrenceville	111/128	87	640/959	67
3.5 DeKalb	1055/1328	79	559/641	87
4.0 LaGrange	231/270	86	55/64	86
5.1 Dublin	69/71	97	236/329	72
5.2 Macon	29/40	72	75/88	85
6.0 Augusta	72/84	86	263/287	92
7.0 Columbus	47/67	70	54/55	98
8.1 Valdosta	15/16	94	15/15	100
8.2 Albany	92/113	81	154/170	91
9.1 Coastal	30/36	83	45/51	88
9.2 Waycross	--	--	166/177	94
10 Athens	26/29	90	75/148	51
<b>Georgia Total</b>	<b>2247/2776</b>	<b>81</b>	<b>2815/3519</b>	<b>80</b>

**Table 8. Infected Contacts exposed to Sputum Smear Positive Cases started on LTBI Treatment by Health District, Georgia, 2010-2011**

HEALTH DISTRICT	2010		2011	
	No. Infected Contacts on LTBI Treatment / No. Infected Contacts	%	No. Infected Contacts on LTBI Treatment / No. Infected Contacts	%
1.1 Rome	14/21	67	9/13	69
1.2 Dalton	7/7	100	6/8	75
2.0 Gainesville	9/12	75	14/17	82
3.1 Cobb	19/27	70	1/5	20
3.2 Fulton	30/41	73	45/65	69
3.3 Clayton	1/6	17	4/10	40
3.4 Lawrenceville	21/42	50	59/144	41
3.5 DeKalb	80/107	75	117/153	77
4.0 LaGrange	13/15	87	20/22	91
5.1 Dublin	10/11	91	13/21	62
5.2 Macon	5/6	83	17/26	65
6.0 Augusta	29/35	83	4/14	29
7.0 Columbus	7/10	70	23/32	72
8.1 Valdosta	6/9	67	1/1	100
8.2 Albany	12/20	60	37/57	65
9.1 Coastal	8/12	67	9/12	75
9.2 Waycross	--	--	34/42	81
10 Athens	19/21	90	12/16	75
<b>Georgia Total</b>	<b>290/402</b>	<b>72</b>	<b>425/658</b>	<b>66</b>

**Table 9. LTBI Treatment Completion of Infected Contacts exposed to Sputum Smear Positive Cases by Health District, Georgia, 2010-2011**

HEALTH DISTRICT	2010		2011	
	No. Contacts that Completed LTBI Treatment / Contacts Treated	%	No. Contacts that Completed LTBI Treatment / Contacts Treated	%
1.1 Rome	6/14	43	3/9	33
1.2 Dalton	3/7	43	5/6	83
2.0 Gainesville	6/9	67	10/14	71
3.1 Cobb	10/19	53	1/1	100
3.2 Fulton	19/30	63	29/45	64
3.3 Clayton	1/1	100	4/4	100
3.4 Lawrenceville	14/21	67	38/59	64
3.5 DeKalb	60/80	75	100/117	86
4.0 LaGrange	9/13	69	10/20	50
5.1 Dublin	4/9	44	9/13	69
5.2 Macon	4/5	80	13/17	76
6.0 Augusta	12/29	41	1 / 4	25
7.0 Columbus	4/7	57	18/23	78
8.1 Valdosta	4/6	67	1/1	100
8.2 Albany	7/12	58	25/37	68
9.1 Coastal	4/8	50	7/9	78
9.2 Waycross	--	--	18/34	53
10 Athens	2/19	10	9/12	75
<b>Georgia Total</b>	<b>169/289</b>	<b>58</b>	<b>301/425</b>	<b>71</b>

Figure 1. TB Cases and Case Rates  
Georgia, 1982-2012

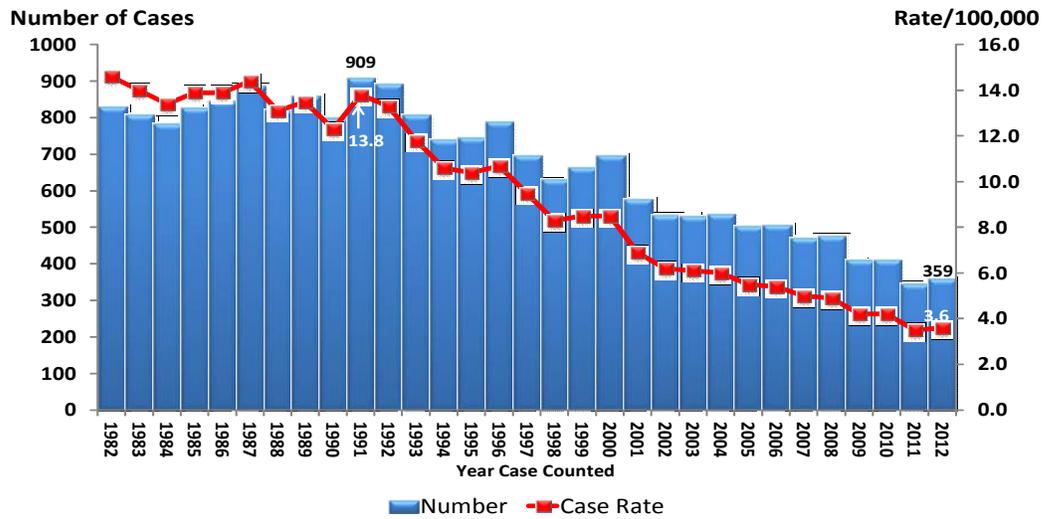


Figure 2 . TB Case Rates  
Georgia and US, 1982-2012

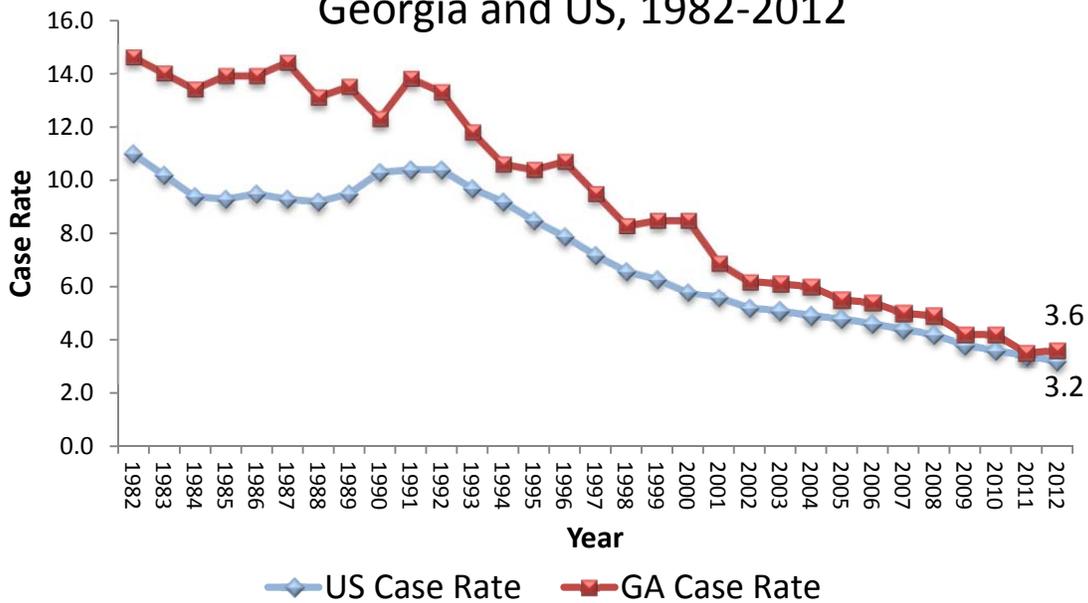


Figure 3. Number of TB Cases by Health Districts  
Georgia, 2012

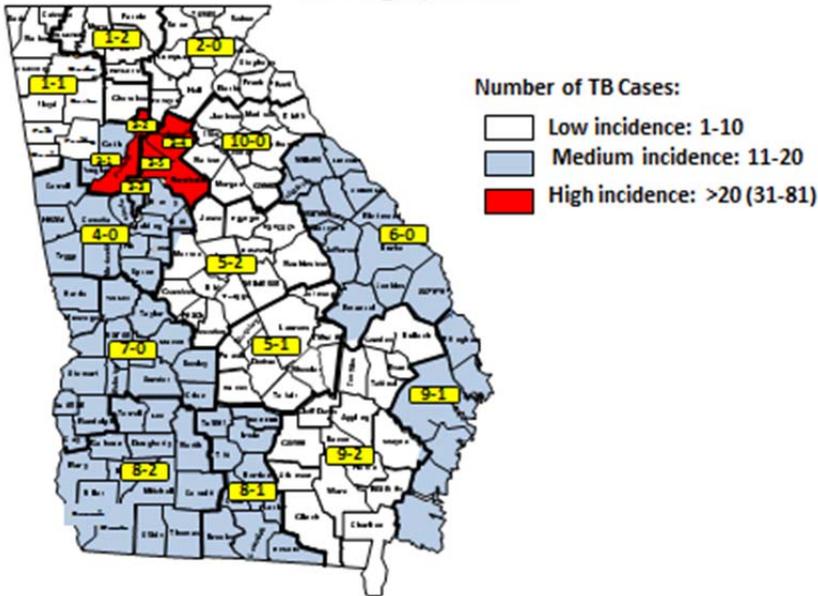


Figure 4. TB Case Rates by Health Districts  
Georgia, 2012

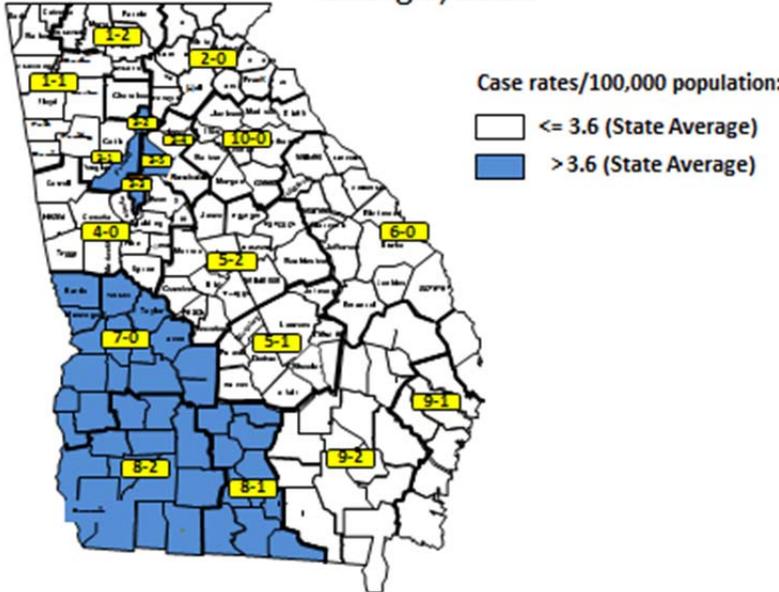


Figure 5. TB Cases by Age Group and Sex  
Georgia, 2012

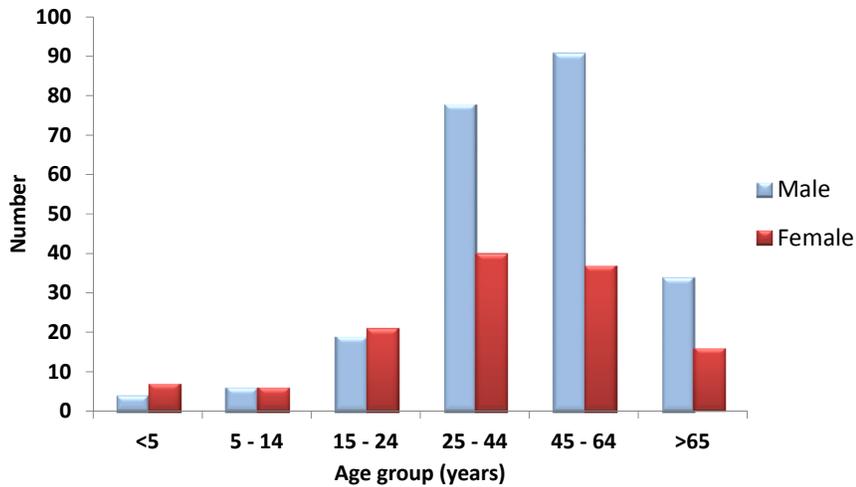


Figure 6. TB Case Rates\* by Age Group  
2008-2012, Georgia

Age Group	2008	2009	2010	2011	2012
< 5 yrs.	4.5	2.3	2	2.3	1.6
5-14 yrs.	0.6	0.5	0.9	0.7	0.9
15-24 yrs.	3.9	4.1	3.3	2.8	2.8
25-44 yrs.	6.3	5.1	5	4.4	4.3
45-64 yrs.	6.6	5.4	5.8	4.6	5.1
65+ yrs.	5.4	5.7	5.5	4.3	4.4

\*Rates are per 100,000 population

Figure 7. TB Cases by Race/Ethnicity  
Georgia, 2000 and 2012

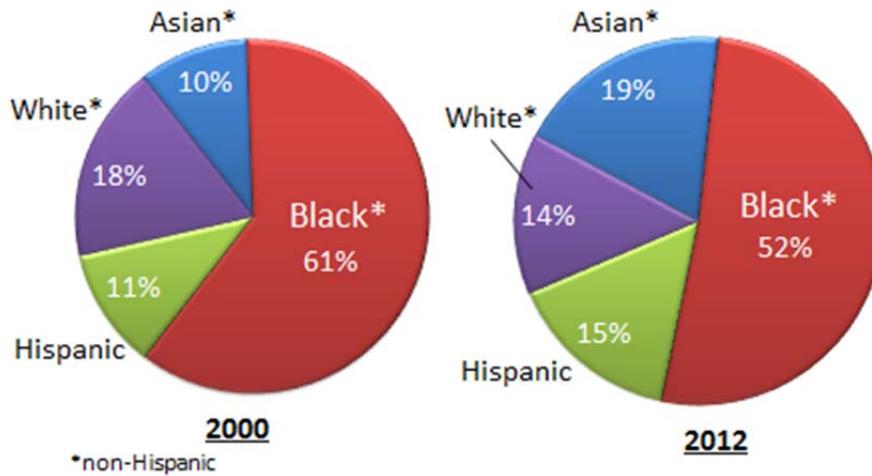


Figure 8. TB Case Rates\* by Race/Ethnicity  
Georgia, 2006-2012

Race/ Ethnicity	2008	2009	2010	2011	2012
Asian, non-Hispanic	27.2	29.7	24.1	16.8	19.8
Hispanic, All races	11.8	11.2	8.2	7.6	6.0
Black, non-Hispanic	7.8	6.2	7.1	5.3	6.1
White, non-Hispanic	1.2	1.2	1	0.9	0.9

\*Rates are per 100,000 population

Figure 9. TB Case Rates in non-Hispanic Blacks and Whites, Georgia, 1993-2012

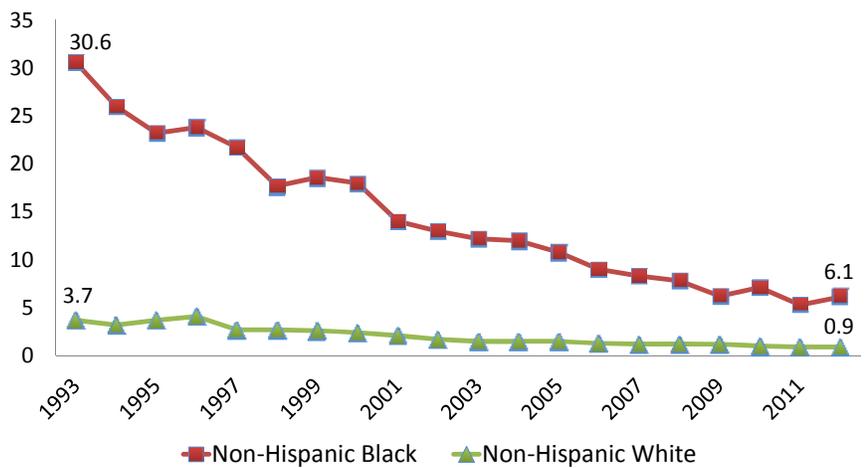


Figure 10. US-born and Foreign-born TB Cases Georgia, 1993-2012

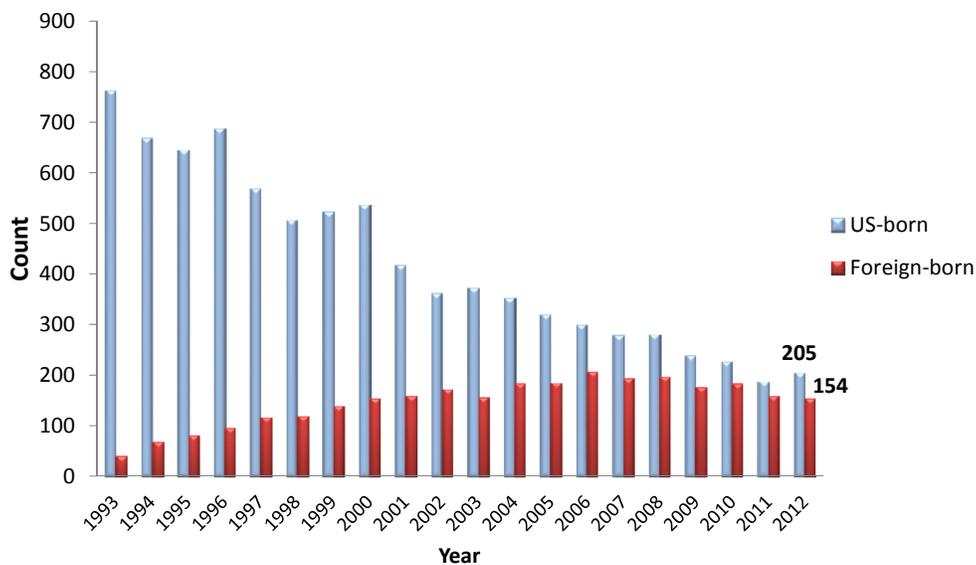


Figure 11. Percent of Foreign-born TB Cases (n=154) by Country of Origin, Georgia, 2012

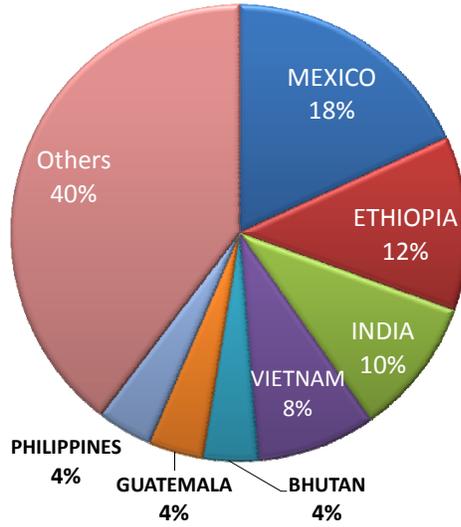


Figure 12. HIV Status of TB Cases Georgia, 1993-2012

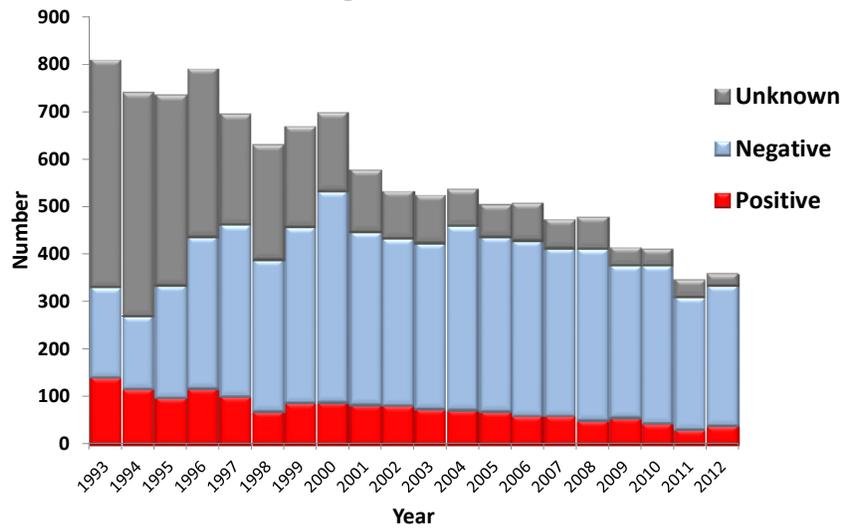


Figure 13. TB in Other High-Risk Populations  
Georgia, 2008-2012

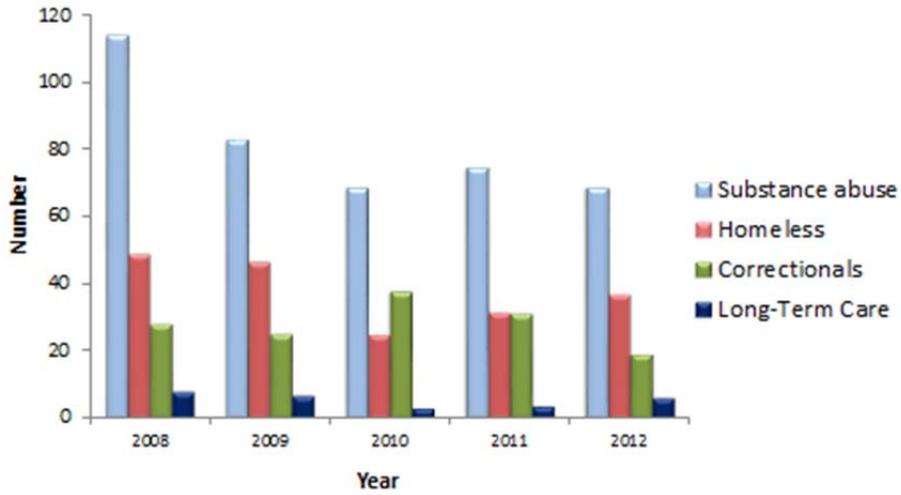


Figure 14. Primary Drug Resistance and MDR-TB  
Georgia, 2008-2012

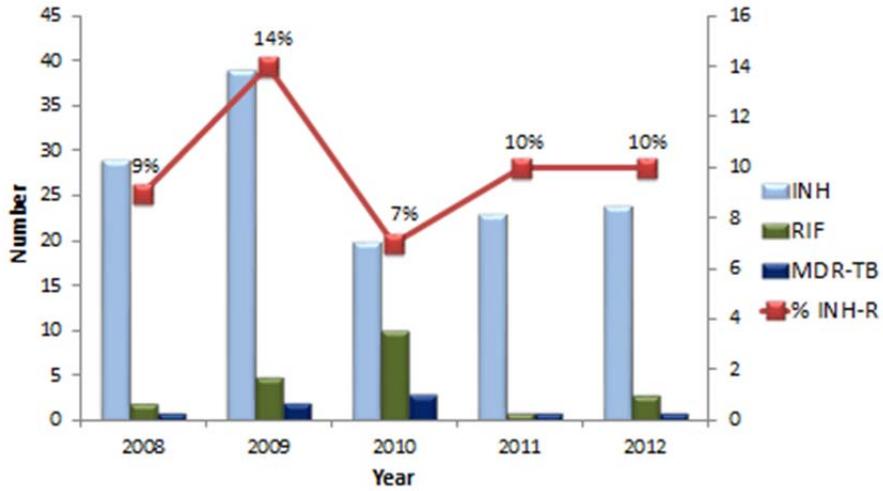
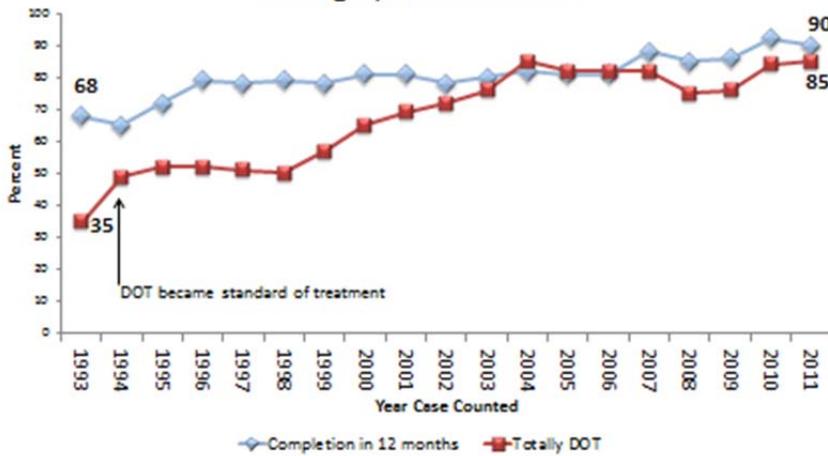
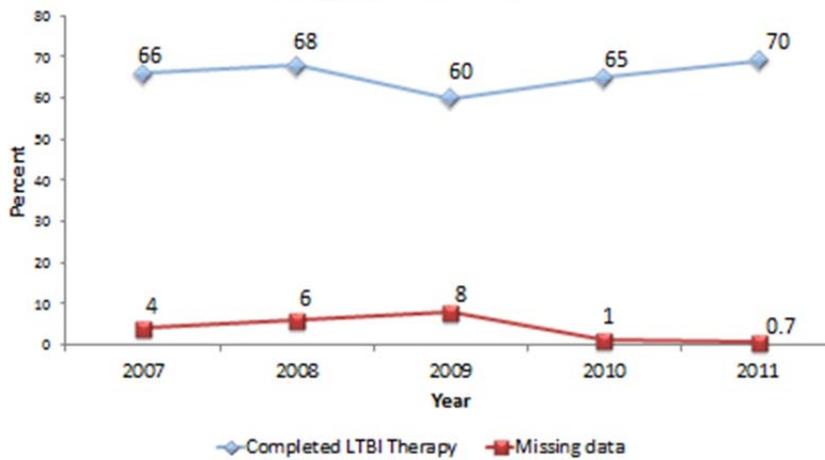


Figure 15. TB Treatment Completion within 12 months and Directly Observed Therapy (DOT)  
Georgia, 1993-2011\*



\*In 2009, CDC changed the calculation for TB treatment completion within 12 months to exclude TB cases who moved out of the U.S. while on TB treatment.

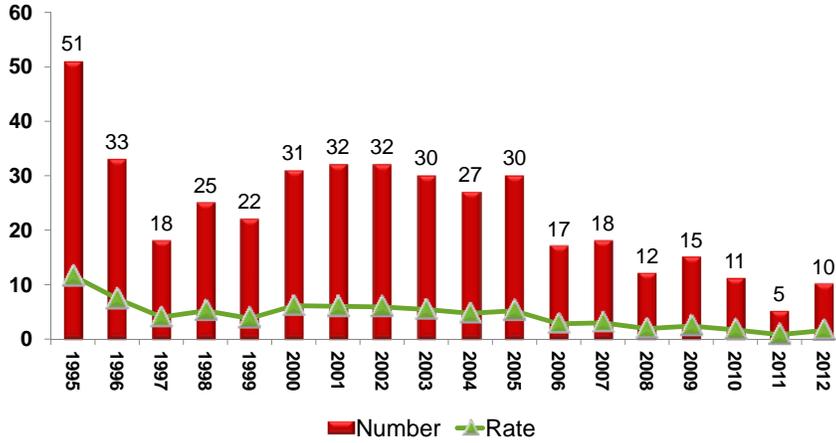
Figure 16. Completion of Latent TB Infection (LTBI) Therapy among all contacts of TB cases, Georgia, 2007-2011



**Tuberculosis Morbidity Trends by Health District**  
**Georgia, 1995-2012**



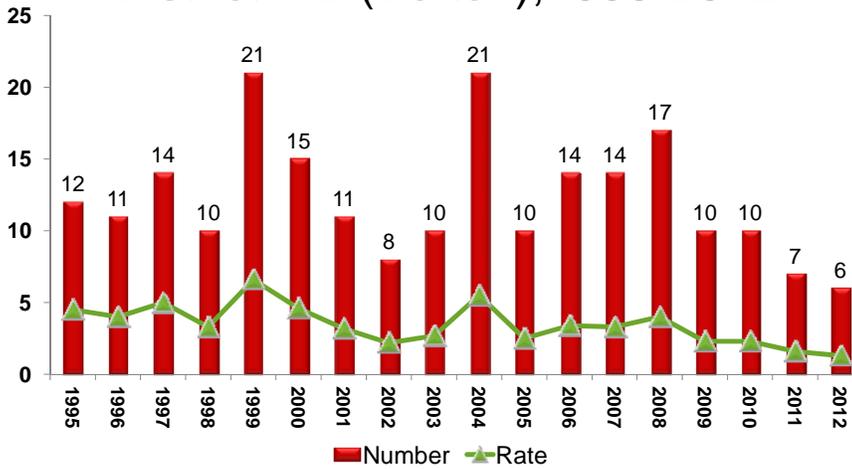
## TB Case Numbers and Rates District 1-1 (Rome), 1995-2012



Rates are per 100,000 population  
Source: GA TB surveillance database



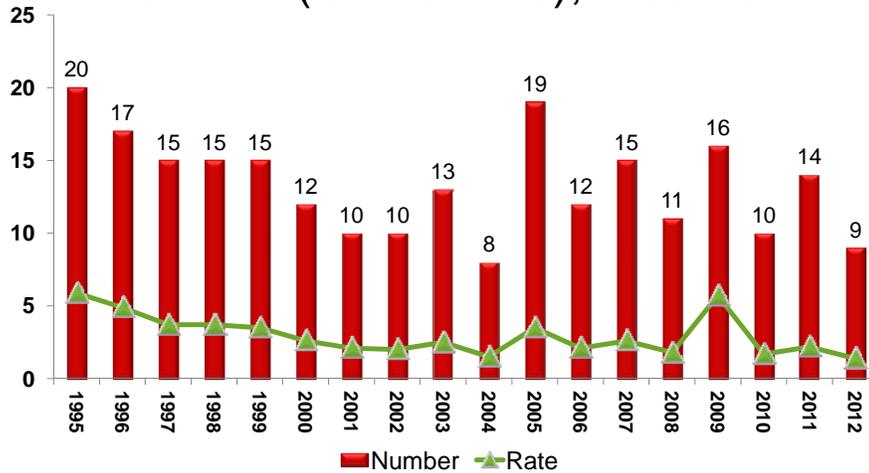
## TB Case Numbers and Rates District 1-2 (Dalton), 1995-2012



Rates are per 100,000 population  
Source: GA TB surveillance database



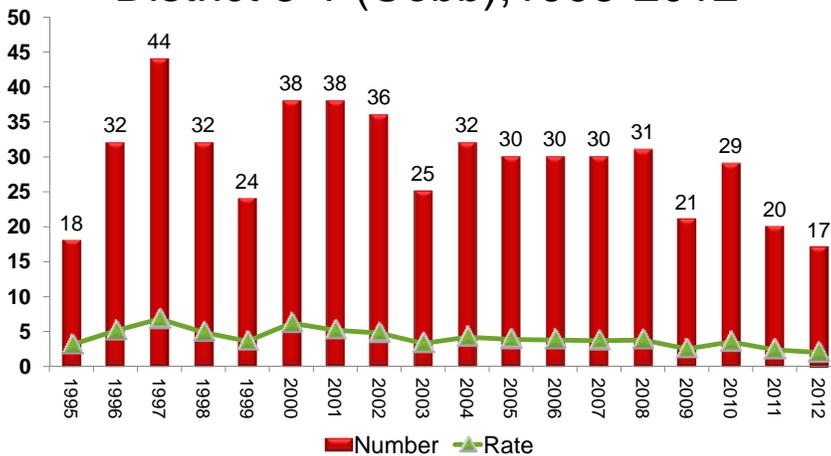
## TB Case Numbers and Rates District 2 (Gainesville), 1995-2012



Rates are per 100,000 population  
Source: GA TB surveillance database



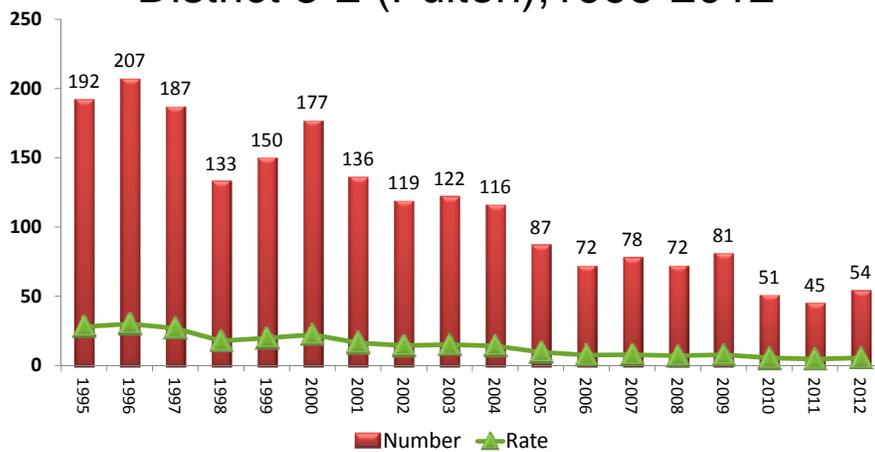
## TB Case Numbers and Rates District 3-1 (Cobb), 1995-2012



Rates are per 100,000 population  
Source: GA TB surveillance database



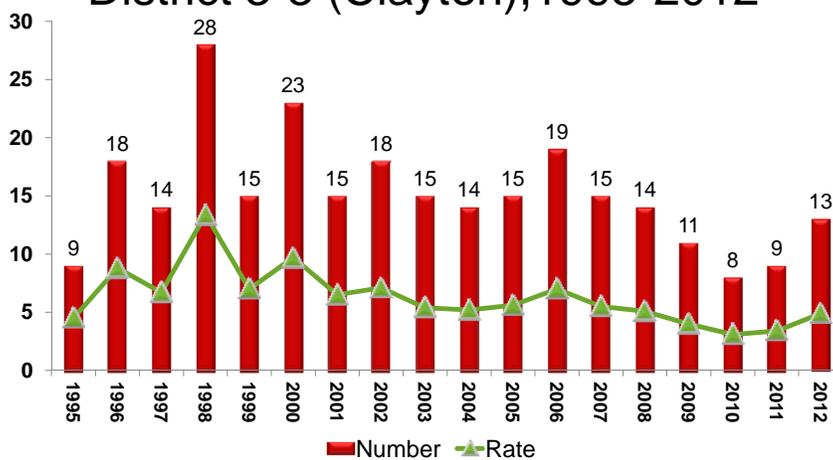
## TB Case Numbers and Rates District 3-2 (Fulton), 1995-2012



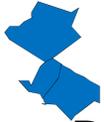
Rates are per 100,000 population  
Source: GA TB surveillance database



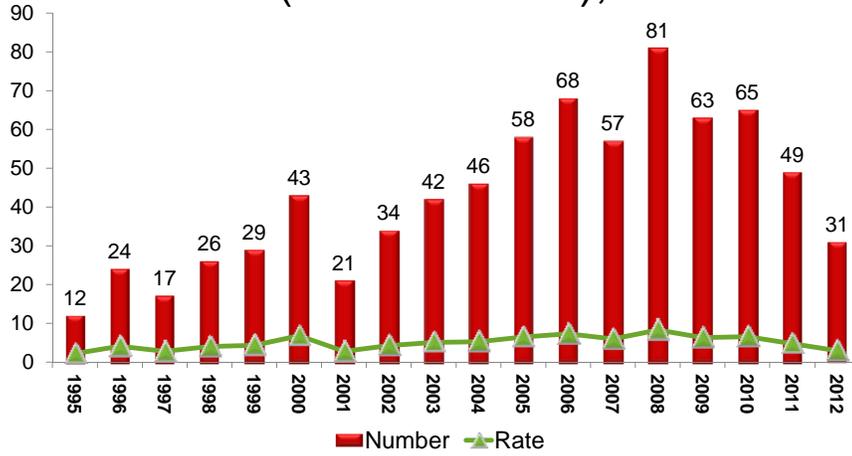
## TB Case Numbers and Rates District 3-3 (Clayton), 1995-2012



Rates are per 100,000 population  
Source: GA TB surveillance database



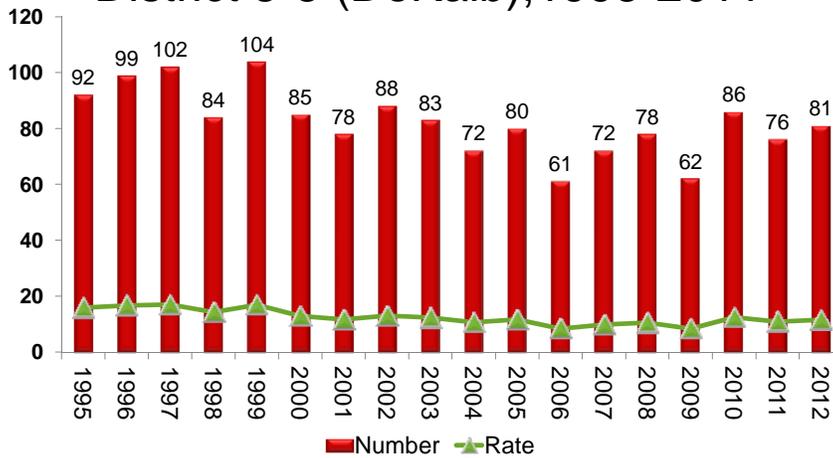
## TB Case Numbers and Rates District 3-4 (Lawrenceville), 1995-2012



Rates are per 100,000 population  
Source: GA TB surveillance database



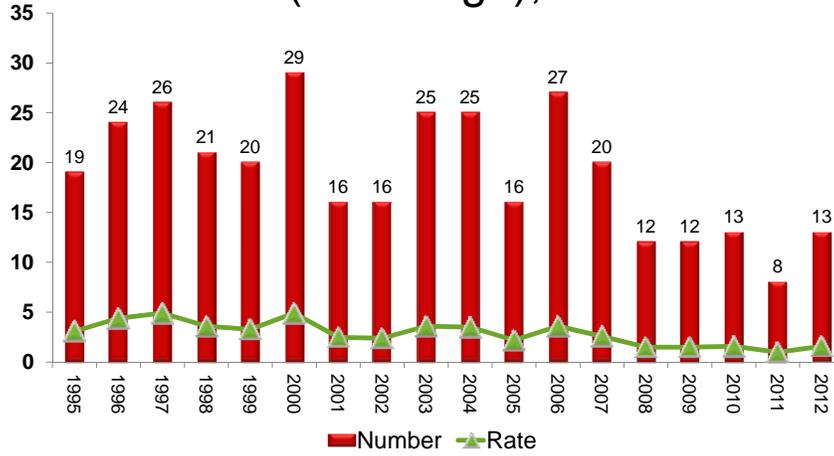
## TB Case Numbers and Rates District 3-5 (DeKalb), 1995-2011



Rates are per 100,000 population  
Source: GA TB surveillance database



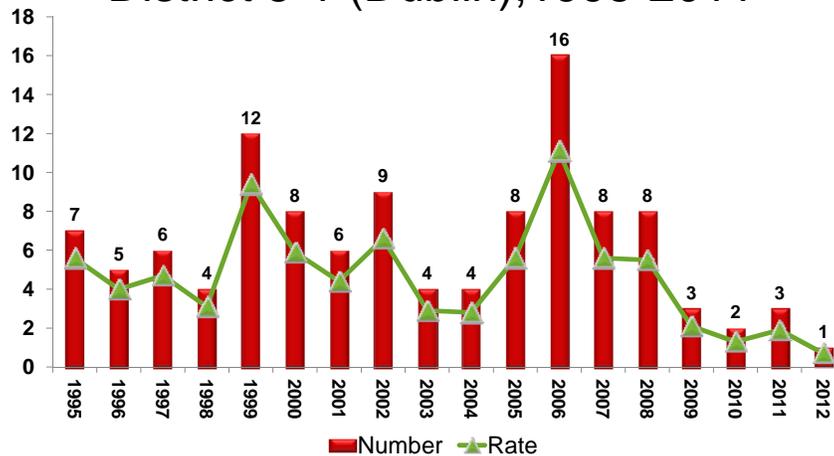
## TB Case Numbers and Rates District 4 (LaGrange), 1995-2011



Rates are per 100,000 population  
Source: GA TB surveillance database



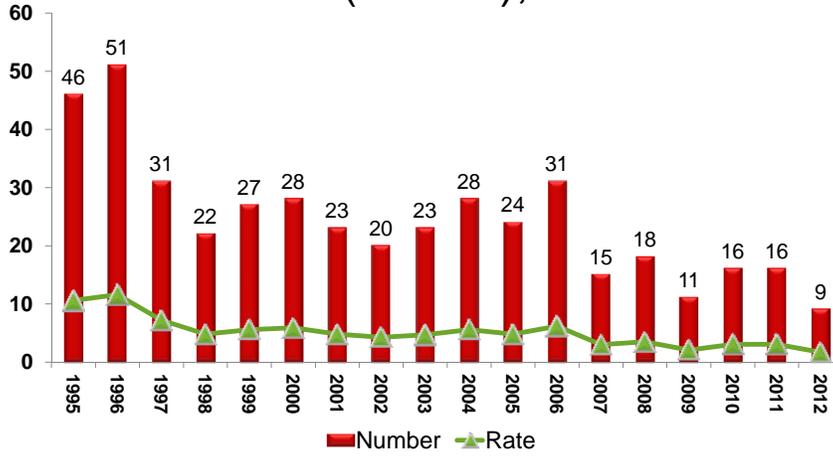
## TB Case Numbers and Rates District 5-1 (Dublin), 1995-2011



Rates are per 100,000 population  
Source: GA TB surveillance database



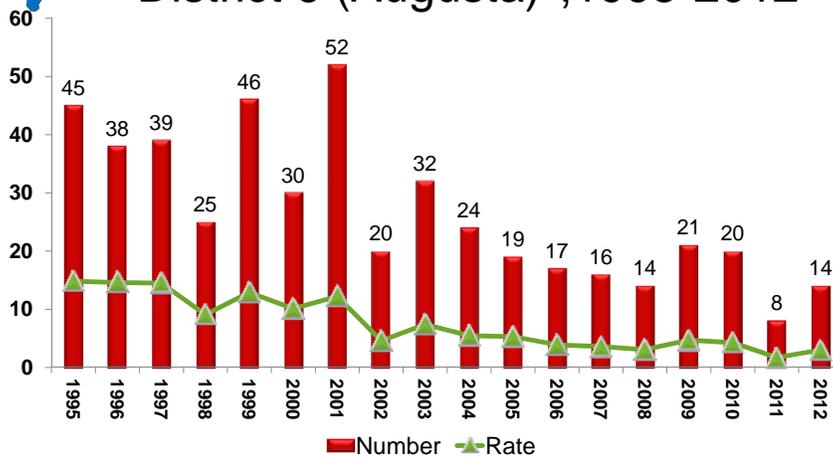
## TB Case Numbers and Rates District 5-2 (Macon), 1995-2012



Rates are per 100,000 population  
Source: GA TB surveillance database



## TB Case Numbers and Rates District 6 (Augusta)\*, 1995-2012

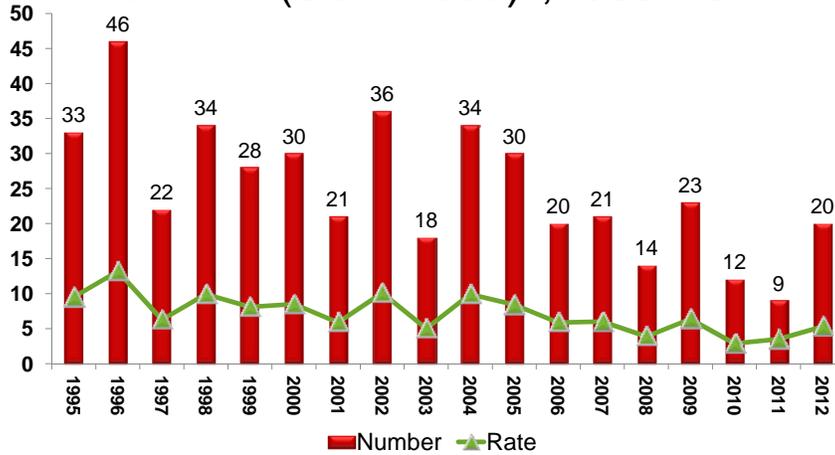


Rates are per 100,000 population  
Source: GA TB surveillance database

\*Augusta State Medical Prison cases not included



## TB Case Numbers and Rates District 7 (Columbus)\*, 1995-2012

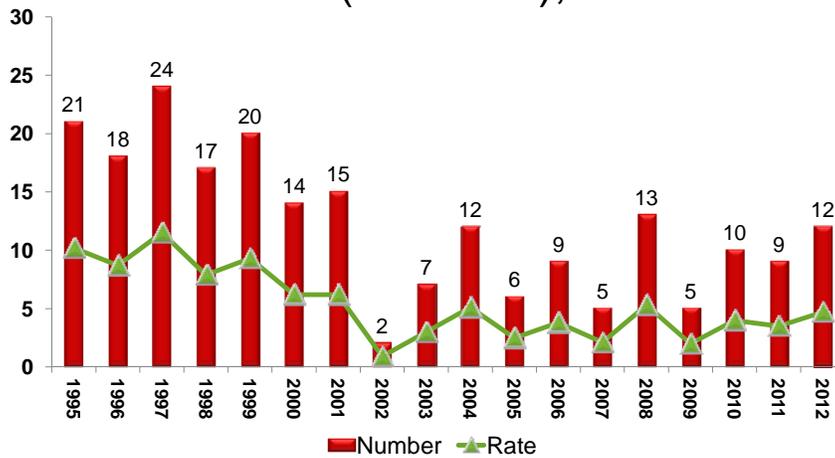


Rates are per 100,000 population  
Source: GA TB surveillance database

\*ICE Detention Center cases not included



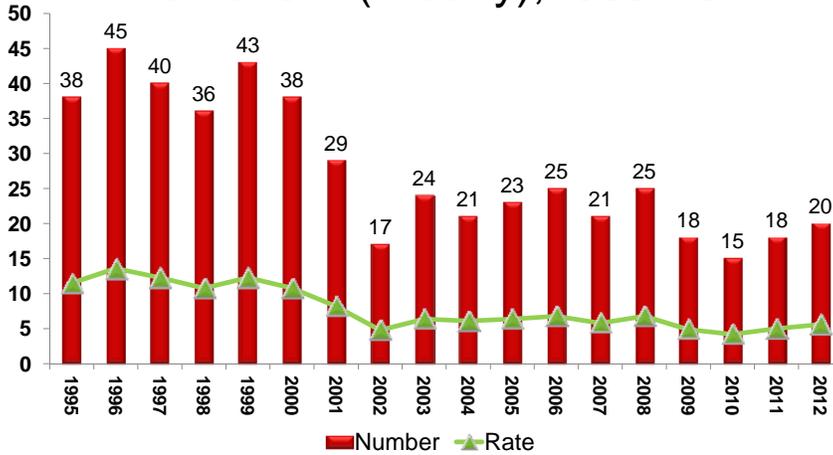
## TB Case Numbers and Rates District 8-1 (Valdosta), 1995-2012



Rates are per 100,000 population  
Source: GA TB surveillance database



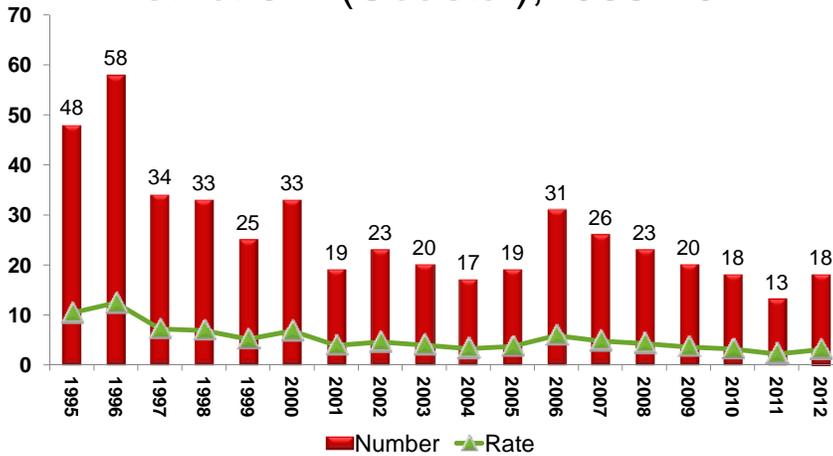
## TB Case Numbers and Rates District 8-2 (Albany), 1995-2012



Rates are per 100,000 population  
Source: GA TB surveillance database



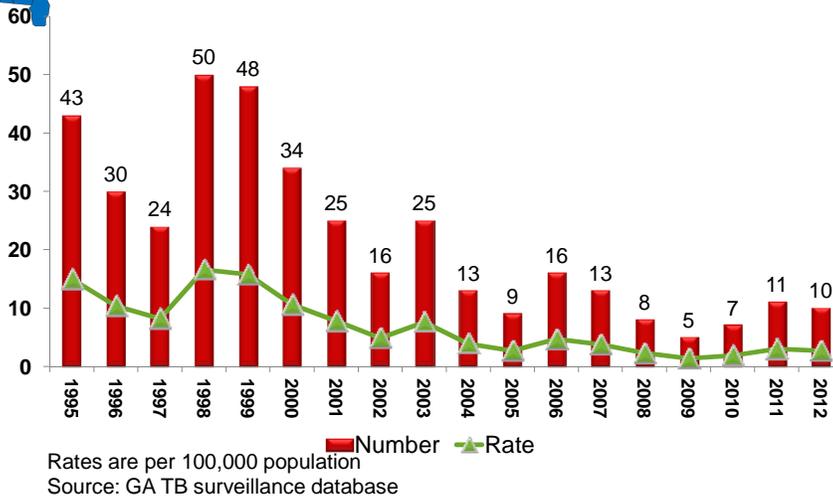
## TB Case Numbers and Rates District 9-1 (Coastal), 1995-2012



Rates are per 100,000 population  
Source: GA TB surveillance database



## TB Case Numbers and Rates District 9-2 (Waycross), 1995-2012



## TB Case Numbers and Rates District 10 (Athens), 1995-2012

