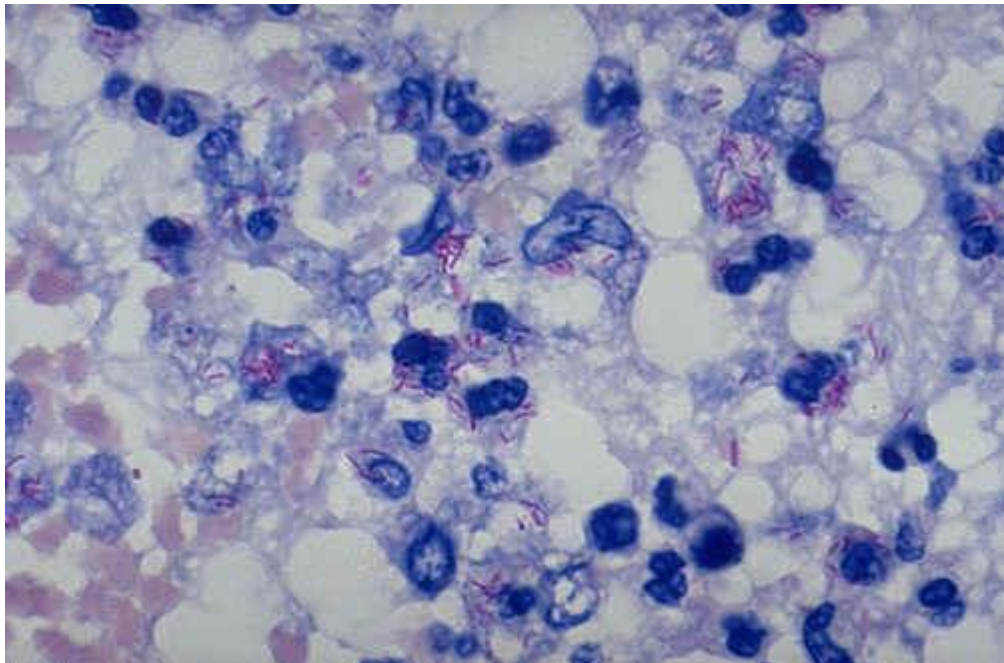


2009 ANNUAL TUBERCULOSIS MORBIDITY REPORT



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Mayor

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Commissioner



Front cover: Mycobacterium tuberculosis photomicrograph. Weblink:
<http://www.univie.ac.at/hygiene-aktuell/images.htm>

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Preface

This publication, 2009 Annual Tuberculosis (TB) Morbidity Report, presents summary data for TB cases reported to the Chicago Department of Public Health (CDPH).

This report is divided into three sections: 1) TB morbidity, 2) patient characteristics, and 3) clinical characteristics. The first section presents trends and overall TB case counts. The second and third sections present the overall TB case counts and case rates for Chicago by selected patient and clinical characteristics.

Thanks to the CDPH TB Control Program staff for providing comments and suggestions. This report is intended to gain a better understanding of TB, in an effort to evaluate and plan TB control activities within the city of Chicago. It is hoped that this will also raise awareness of TB in our city. For questions and concerns, please contact:

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A Message from the TB Controller for Chicago

The 202 cases of tuberculosis reported in Chicago in 2009 is the lowest annual number ever reported in Chicago, and continues the nationwide trend of a steady decrease in the incidence of TB since the most recent peak in 1993. The consistent reduction in TB rates in the US while TB remains the 7th leading cause of death worldwide must be attributed at least in part to intensive TB control efforts by the public health system. The two cornerstones of this effort are the high rates of complete TB treatment achieved through the use of Directly Observed Therapy (DOT) and the routine identification, evaluation and treatment of close contacts to active TB cases who themselves become infected with *Mycobacterium tuberculosis*. These resource-intensive public health interventions have been consistently applied in Chicago since 1993, and have been validated by the continuing drop in new TB cases. In particular, the 85% reduction of TB incidence in the African-American population of Chicago has driven the decrease in TB cases among US-born Chicago residents.

As TB becomes less and less common in Chicago and in the US, fewer clinicians have familiarity with the disease, and the public perception is that TB has disappeared in our communities. The danger is that TB control efforts become the victims of their own success, as scarce public health resources are diverted elsewhere. It will remain the challenge in coming years to maintain TB control efforts as other public health threats receive more attention. The marked rise in TB rates between 1988 and 1993 following the dismantling of public health TB control programs is a cautionary tale that despite low rates, TB is an ever present threat that can easily take advantage of a lack of vigilance.

Joshua D. Jones, MD
Medical Director
Tuberculosis Control Program

Executive Summary

Tuberculosis in Chicago

The decline in TB incidence that began after 1993 continued in 2009, with the 202 cases of active TB among Chicago residents being reported to CDPH (resulting in a TB incidence rate of 7.4 cases per 100,000 population).

Age

Diagnosed active TB disease in children remains relatively rare in Chicago (as with the US generally), with only 4.3% of cases occurring in children aged 0-4 years. The majority of active TB cases are diagnosed in persons aged 25-44 and 45-64 years.

Race and Ethnicity

The majority of TB cases in Chicago are still diagnosed in African-Americans (43% of cases in 2009). Though this percentage increased slightly in 2009, the TB incidence rate of 9.3 cases per 100,000 African-American residents of Chicago still represents a marked decrease in TB incidence in this community.

Country of Birth

The transmission of TB is still high among the general population of many countries of the world. As TB transmission in the US continues to decline, the percentage of TB cases that are diagnosed in Chicago residents born in other countries will continue to increase. In 2009, 55% of TB cases in Chicago occurred among foreign-born residents of Chicago, the highest percentage recorded to date.

Risk Factors for TB

HIV infection remains one of the highest risk factors for both becoming infected with M. tuberculosis, as well as developing active TB disease. The rate of HIV positivity among reported Chicago TB cases has remained between 5 and 10% for several years, with no clear trend either up or down. Homelessness remains a major risk factor for active TB, with 9.5% of Chicago TB cases reported as having no fixed address in 2009.

Technical Notes

Rates

Rates are expressed as the number of cases reported each calendar year per 100,000 population. Population denominators used in calculating TB rates were based population annual estimates from the U.S. Census Bureau, American Community Survey.

TB Case Definition

In 2009 the case definition was modified. TB cases are verified according to the following specified laboratory, clinical criteria, or provider diagnosis.¹

Reporting of HIV Status

HIV-infection status is not documented on all TB cases. CDC strongly encourages providers to document the HIV-infection status of all persons with TB, but testing is not always performed.¹

TB Risk Factor Reporting

Homelessness can be a subjective classification. The proportion of TB cases that are classified as homeless reflects the TB Program's best estimate of whether the person is homeless at the time of TB diagnosis, and may underestimate the proportion of TB cases who have recently experienced homelessness.

Site of TB Disease

Miliary TB could be classified as either an extrapulmonary or pulmonary form of TB (or both), depending on the identified anatomical site of disease (Tables 10).

Tuberculosis Morbidity

Table 1. TB Cases and Case Rates per 100,000 Population: United States, Illinois, and Chicago, 2005-2009

Year	United States ¹		Illinois ²		Chicago ³	
	Cases	Rates	Cases	Rates	Case	Rates
2005	14,067	4.8	596	4.8	329	11.8
2006	13,727	4.6	569	4.6	287	10.3
2007	13,288	4.4	521	4.1	259	9.4
2008	12,904	4.2	469	3.6	214	7.8
2009	11,540	3.8	418	3.2	202	7.4

¹ Centers for Disease Control and Prevention

² Case Rates based on the population estimates from the US Census Bureau.

³ Case Rates based on the population estimates from the American Community Survey

Figure 1. TB Case Rates per 100,000 Populations: Illinois, and Chicago, 2005-2009

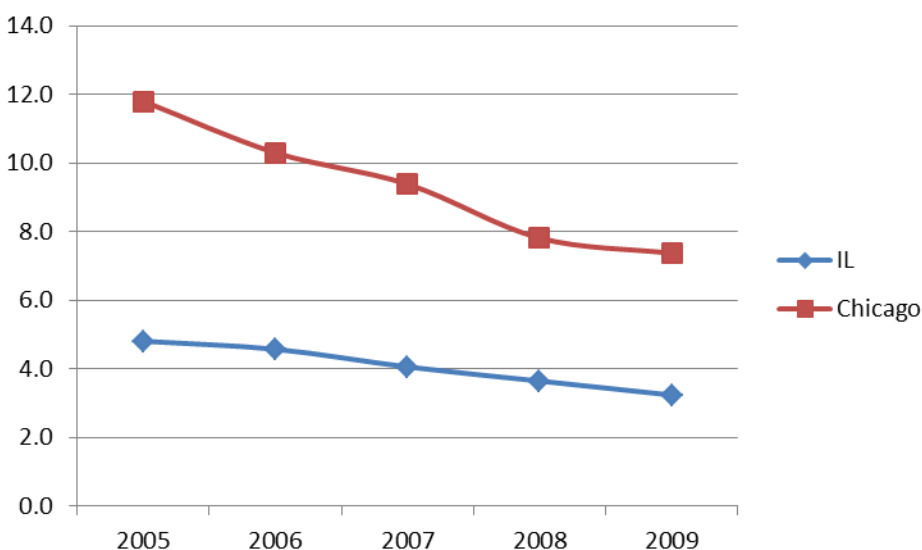
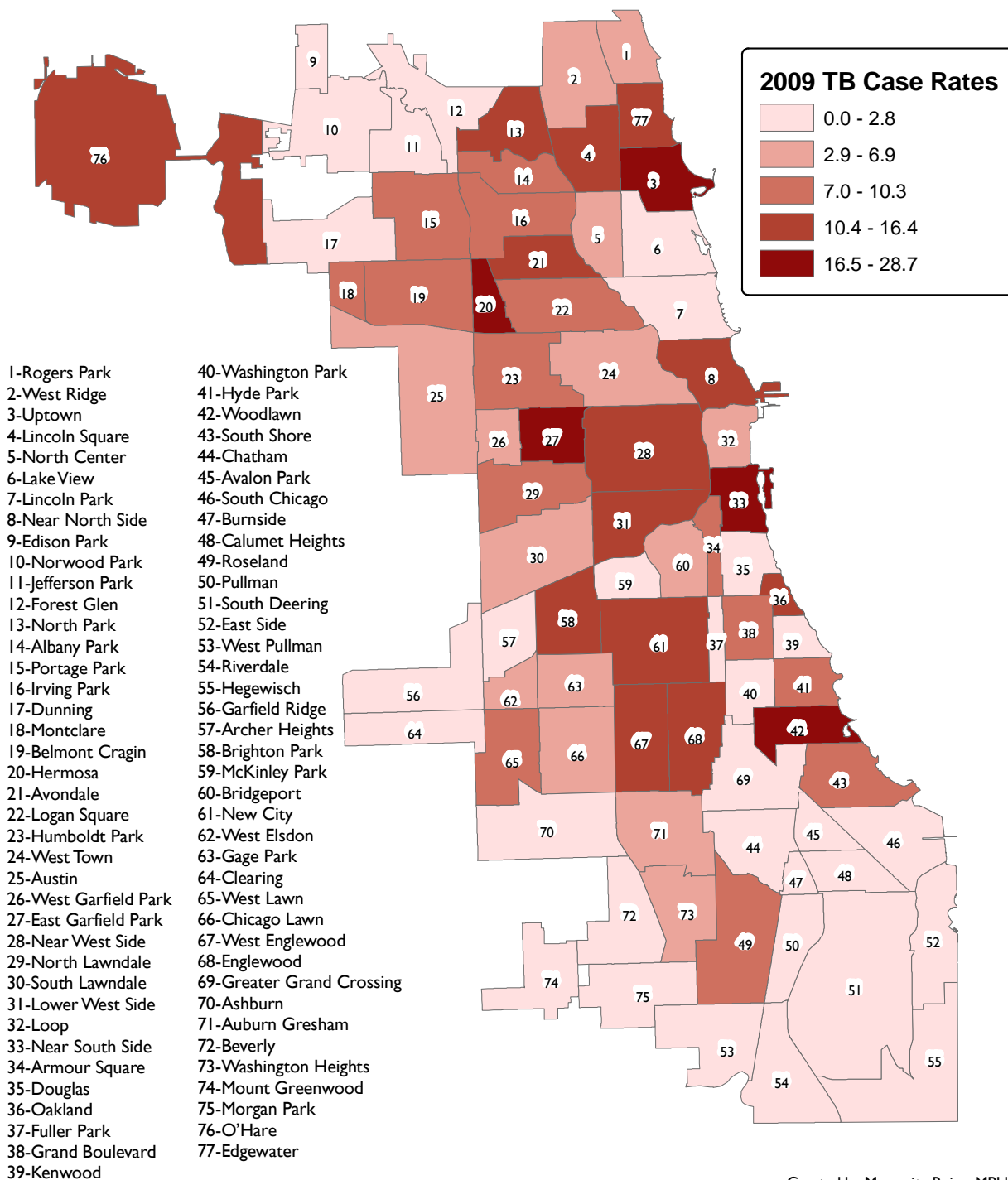


Figure 2. TB Case Rates by Community Area
Chicago, 2009 (N=202)



Created by Margarita Reina, MPH
March 23, 2009

Patient Characteristics

Race/Ethnicity

Table 2. TB Cases, Percentages, and Case Rates* by Race and Ethnicity: Chicago, 2005-2009

Year	Total Cases	Hispanic/Latino			Non-Hispanic											
					White			Black			Asian			Other/Unknown		
		No.	%	Rate	No.	%	Rate	No.	%	Rate	No.	%	Rate	No.	%	Rate
2005	329	79	24	10.6	25	8	3.0	170	52	17.4	50	15	40.1	5	2	**
2006	287	77	27	9.9	30	10	3.7	129	45	13.8	51	18	39.9	0	0	**
2007	259	68	26	8.8	23	9	2.7	125	48	13.3	43	17	33.7	0	0	**
2008	214	53	25	6.9	27	13	3.2	86	40	9.1	48	22	36.5	0	0	**
2009	202	49	24	6.4	21	10	2.4	87	43	9.3	45	22	33.9	0	0	**

Age Group

Table 3. TB Cases, Percentages, and Case Rates by Age Group: Chicago, 2005-2009

Year	Total Cases	0-4 years			5-14 years			15-24 years			25-44 years			45-64 years			65+ years		
		No.	(%)	Rate	No.	(%)	Rate	No.	(%)	Rate	No.	(%)	Rate	No.	(%)	Rate	No.	(%)	Rate
2005	329	14	4	6.5	17	5	4.2	34	10	9.2	106	32	12.0	108	33	18.6	50	15	18.4
2006	287	17	6	7.9	11	4	2.9	24	8	6.4	78	27	9.0	100	35	17.0	57	20	20.6
2007	259	3	1	1.4	4	2	1.1	20	8	4.9	83	32	9.5	94	36	15.4	55	21	19.5
2008	214	4	2	2.0	2	1	0.6	24	11	6.0	73	34	8.4	74	35	11.9	37	17	13.0
2009	202	9	4	4.4	1	0	0.3	25	12	6.1	67	33	7.7	69	34	11.2	31	15	10.7

Gender

Table 4. TB Cases, Percentages, and Case Rates by Gender: Chicago, 2005-2009

Year	Total Cases	Male			Female		
		No.	%	Rate	No.	%	Rate
2005	329	206	63	15.6	123	37	4.5
2006	383	287	75	22.1	96	25	3.6
2007	258	172	67	12.8	86	33	3.1
2008	214	124	58	9.2	90	42	3.3
2009	202	112	55	8.4	90	45	3.3

Country of Origin

Table 5. TB Cases, Percentages, and Case Rates by Country of Origin: Chicago, 2005-2009

Year	Total Cases	Foreign-Born			US-Born		
		No.	%	Rate	No.	%	Rate
2005	329	132	40	22.8	197	60	9.2
2006	288	131	45	22.2	157	55	7.4
2007	288	132	46	22.0	156	54	7.3
2008	242	116	48	19.6	126	52	5.9
2009	202	112	55	19.1	90	45	4.2
2010	161	92	57	15.6	68	42	3.0

Table 6. TB Cases, Percentages, and Case Rates by selected countries: Chicago, 2005-2009

Country of Origin	2005		2006		2007		2008		2009	
	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent
Mexico	47	35.6%	47	36.2%	49	38.3%	35	30.2%	35	31.3%
Philippines	11	8.3%	14	10.8%	14	10.9%	9	7.8%	10	8.9%
India	7	5.3%	5	3.8%	9	7.0%	16	13.8%	9	8.0%
Poland	10	7.6%	5	3.8%	6	4.7%	8	6.9%	6	5.4%
Vietnam	1	0.8%	5	3.8%	1	0.8%	5	4.3%	5	4.5%
Ethiopia	4	3.0%	5	3.8%	2	1.6%	6	5.2%	5	4.5%
Korea	3	2.3%	3	2.3%	3	2.3%	4	3.4%	4	3.6%
Ecuador	4	3.0%	2	1.5%	2	1.6%	3	2.6%	4	3.6%
China	11	8.3%	9	6.9%	9	7.0%	7	6.0%	3	2.7%
Guatemala	2	1.5%	4	3.1%	4	3.1%	1	0.9%	2	1.8%
Pakistan	3	2.3%	2	1.5%	2	1.6%	2	1.7%	2	1.8%
Total	132	78.0%	130	77.7%	128	78.9%	116	82.8%	112	75.9%

Table 7. TB Cases, Percentages, and Cases by Drug Susceptibility Patterns and Place of Birth: Chicago, 2005-2009*

Year	Total Cases	Foreign-Born			US-Born		
		Total	No.	%	Total	No.	%
2005	329	132	7	2	197	9	3
2006	288	130	10	3	158	8	3
2007	259	128	6	2	131	13	5
2008	214	116	11	5	98	6	3
2009	202	112	6	3	90	11	5

*Initial INH and Rifampin sensitivity

Clinical Characteristics

Table 8. TB Cases, Percentages, and Cases by HIV Status: Chicago, 2005-2009

Year	HIV Status No. (%)			Total
	Neg	Pos	Unknown	
2005	221 (61.6)	30 (8.4)	78 (21.7)	359
2006	204 (71.1)	17 (5.9)	66 (30.0)	287
2007	164 (63.3)	23 (8.9)	72 (27.8)	259
2008	168 (78.5)	20 (9.3)	26 (12.1)	214
2009	156 (77.2)	12 (5.9)	34 (16.8)	202

Table 9. TB Cases, Percentages, and Cases by High Risk Settings: Chicago, 2005-2009

Year	High Risk Setting No. (%)			Total
	Homeless	Corrections	Long term care	
2005	19 (5.3)	10 (2.8)	6 (1.7)	359
2006	23 (8.0)	15 (5.2)	7 (2.4)	287
2007	29 (11.2)	14 (5.4)	4 (1.5)	259
2008	15 (7.0)	5 (2.3)	8 (3.7)	214
2009	19 (9.4)	3 (1.5)	3 (1.5)	202

Table 10. TB Cases, Percentages, and Cases by Site of disease: Chicago, 2005-2009

Year	Site of Disease No. (%)			Total
	Pulmonary	Extra pulmonary	Both	
2005	258 (71.9)	61 (17.0)	10 (2.8)	359
2006	199 (69.3)	63 (22.0)	24 (8.4)	287
2007	197 (76.1)	50 (19.3)	12 (4.6)	259
2008	134 (62.6)	52 (24.3)	28 (13.1)	214
2009	141 (69.8)	41 (20.3)	20 (9.9)	202

References:

1. CDC Reported Tuberculosis in the United States, 2009. Atlanta, GA: US Department of Health and Human Services, CDC, September 2010.