Estimated incidence of MDR/RR-TB in 2015, for countries with at least 1000 incident cases

* MDR = multidrug-resistant; RR= rifampicin-resistant
MDR/RR-TB = RR-TB cases including MDR-TB cases

© WHO 2016. All rights reserved.
Coverage of BCG vaccination, 2015*

The target population of BCG coverage varies depending on national policy, but is typically for the number of live births in the year of reporting.

* BCG = Bacille-Calmette-Guérin


© WHO 2016. All rights reserved.
Cross of Lorraine

In 1902 the International Tuberculosis Congress decided that the prevalence and rapid spread of the disease required a concerted effort across the world to end tuberculosis, and likened this plan to a war.

The delegates designated the Cross of Lorraine, an historic battle standard associated with noble victory.

Many TB sanatoriums prominently displayed this battle standard.

Some claim a dual purpose was to ‘warn’ others to stay away from the area as people with deadly consumption were housed here.
Iowa State TB Sanatorium - Oakdale

Built in 1907, Oakdale Sanatorium was the oldest and largest public TB sanatorium in Iowa. Oakdale served thousands of TB patients until declining usage finally closed its doors in 1981.

In 2011, wrecking balls tore the main buildings down to pave the way for the modern State Hygienic Lab. The Nurses Cottage (pictured) remains.

Note the Cross of Lorraine, right upper corner of the building.
Taking The Cure

Patients were on a strict regimen of rest, relaxation and fresh air. Even during Iowa’s brutal winters, patients slept on the porch!

Antibiotics to treat TB were not discovered until 1944 (Streptomycin). Patients initially seemed cured, but they eventually failed treatment as a single drug was not effective at curing TB!

Timeline of the modern drugs used to treat TB: Isoniazid (1952), Pyrazinamide (1954), Ethambutol (1962) and Rifampin (1963).
Reported Tuberculosis (TB) Cases
United States, 1982 - 2015*

*As of June 9, 2016.
TB Case Rates,* United States, 2015

*Cases per 100,000 population; as of June 9, 2016.
Percentage of Foreign-Born Persons Among TB Cases, United States, *2005 and 2015

* As of June 9, 2016.
Countries of Birth Among Foreign-Born Persons Reported with TB, United States, 2015*

* As of June 9, 2016.
Trends in TB Cases Among Foreign-Born Persons, United States, 1993 - 2015*

* As of June 9, 2016.
Reported TB Cases, by Age Group, United States, 2015*

- ≥65 yrs (24%)
- 0–4 yrs (3%)
- 5–14 yrs (2%)
- 15–24 yrs (10%)
- 25–44 yrs (30%)
- 45–64 yrs (32%)

* As of June 9, 2016.
Reported TB Cases, by Race/Ethnicity,*
United States, 2015†

- Hispanic/Latino: 28%
- Asian: 33%
- Black/African American: 21%
- White: 13%
- Native Hawaiian/Other Pacific Islander: 1%
- American Indian/Alaska Native: 2%
- Multiple race: 2%
- Unknown race: 0.3%

* All races are non-Hispanic; multiple race indicates two or more races reported for a person, but does not include persons of Hispanic/Latino origin. Unknown race consisted of 0.3% and is not shown.
† As of June 9, 2016.
Completion of TB Treatment Therapy, United States, 1993 - 2013*

* As of June 9, 2016; data available through 2013 only.

Note: Includes persons alive at diagnosis, with initial drug regimen of one or more drugs prescribed, who did not die within one year of initiating treatment; excludes persons with initial rifampin-resistant isolate, patients with bone and joint disease, meningeal disease, or disease of the central nervous system, or pediatric patients (ages 0–14 years) with miliary disease or positive blood culture or a positive nucleic acid amplification test on a blood specimen, and those who moved out of the country within one year of initiating treatment.
Estimated HIV Coinfection Among Persons Reported with TB, United States, 1993 - 2015*

* As of June 9, 2016.

Note: Minimum estimates are based on reported HIV-positive status among all TB patients in the age group.

* Cases per 100,000 population; as of June 9, 2016.
TB Case Rates,* U.S.-Affiliated Pacific Islands, 2015

- United States overall: 3.0
- Hawaii: 8.9
- American Samoa: 7.4
- Guam: 47.0
- Northern Mariana Islands: 51.6
- Palau: 65.8
- Federated States of Micronesia: 97.9
- Marshall Islands: 189.8

* Cases per 100,000 population; as of June 9, 2016.
Note: Based on initial isolates from persons with no prior history of TB; multidrug-resistant TB (MDR-TB) is defined as resistance to at least isoniazid and rifampin.
XDR-TB* Case Count, Defined on Initial DST,† by Year, 1993 - 2015§

* XDR-TB, extensively drug-resistant TB.
† DST, drug susceptibility test.
§ As of June 9, 2016.

Note: XDR-TB is defined as resistance to isoniazid and rifampin, plus resistance to any fluoroquinolone and at least one of three injectable second-line anti-TB drugs.
National Tuberculosis Association

This organization, later to become the American Lung Association, led the war against TB in the U.S.

Christmas Seals were started to help fund the fledging sanatoriums and advance the fight against TB.
Stamp Out TB!

Every year, celebrities and public officials endorsed and embraced the Christmas Seals campaign.

Endorsements by Presidents beginning with Theodore Roosevelt, and stars like Bob Hope, John Wayne, Abbott & Costello and many others enabled the organization to fund medical research, create a massive public health education campaign, and provide TB screening services, including mobile X-Ray units.
In the late 1800’s/early 1900s, TB (aka consumption, the White Plague) was the leading cause of death in the United States and Europe.

Approximately 100,000 Americans died each year during the early 19th century when TB killed 50% of its victims.
Average Number of Iowa TB Cases Each Year - By Decade

<table>
<thead>
<tr>
<th>Decade</th>
<th>Number of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>1930-39</td>
<td>555</td>
</tr>
<tr>
<td>1940-49</td>
<td>757</td>
</tr>
<tr>
<td>1950-59</td>
<td>628</td>
</tr>
<tr>
<td>1960-69</td>
<td>255</td>
</tr>
<tr>
<td>1970-79</td>
<td>114</td>
</tr>
<tr>
<td>1980-89</td>
<td>66</td>
</tr>
<tr>
<td>1990-99</td>
<td>65</td>
</tr>
<tr>
<td>2000-09</td>
<td>43</td>
</tr>
<tr>
<td>2010-16</td>
<td>46</td>
</tr>
</tbody>
</table>
Completed TB Treatment
Iowa: 2005 - 2014

<table>
<thead>
<tr>
<th>Year</th>
<th>Completion Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>90%</td>
</tr>
<tr>
<td>2006</td>
<td>91%</td>
</tr>
<tr>
<td>2007</td>
<td>92%</td>
</tr>
<tr>
<td>2008</td>
<td>93%</td>
</tr>
<tr>
<td>2009</td>
<td>94%</td>
</tr>
<tr>
<td>2010</td>
<td>95%</td>
</tr>
<tr>
<td>2011</td>
<td>96%</td>
</tr>
<tr>
<td>2012</td>
<td>97%</td>
</tr>
<tr>
<td>2013</td>
<td>98%</td>
</tr>
<tr>
<td>2014</td>
<td>98%</td>
</tr>
</tbody>
</table>
Non U.S. Born TB Cases
Iowa: 2007 - 2016
Tuberculosis Cases By Gender
Iowa, 2005 - 2014
TB Cases by Classification
Iowa: 2010 - 2014

- Positive Culture: 70%
- Clinical: 24%
- Provider Dx: 4%
- Positive NAA: 2%
TB Cases by Site Of Disease
Iowa: 2006 - 2015
Latent Tuberculosis Infections*
Iowa: 2006 - 2015
TB Cases By U.S. vs. Non-U.S. Born
Iowa: 2006 - 2015

Total = 447 cases
TB Cases By Country of Origin
Iowa: 2007 - 2016
Tuberculosis Cases by County of Residence
Iowa, 2007 - 2016
Total Cases = 455

Source: Iowa Department of Public Health, TB Control Program
Tuberculosis Cases By Year
Iowa: 2007 - 2016

- 2007: 43
- 2008: 49
- 2009: 42
- 2010: 48
- 2011: 40
- 2012: 46
- 2013: 47
- 2014: 54
- 2015: 38
- 2016: 48
Life in the Sanatorium

The Colfax Sanatorium, and others like Sunny Crest in Dubuque and Broadlawns in Des Moines, were key to isolating infectious TB patients from the rest of the communities in Iowa.

People often lived in sanatoriums for one to two years. Life was often very strict and regimented. Patients often referred to themselves as inmates, the nurses as guards and the doctor as the warden.

Men, women and children were separated but ate meals together. In spite of the rules, a unique community developed within the walls of the sanatoriums, complete with marriage proposals, weddings, and babies.
In 1913, the Iowa Legislature authorized Polk County, among other counties, to care for tuberculosis patients who resided within the county and at the time were being cared for in tents at the County Farm.

The Iowa State Tuberculosis Association (now the American Lung Association of Iowa) led the movement to build Broadlawns.

The building opened in April 1924. The first buildings erected consisted of a 60-bed tuberculosis unit and a 30-bed nurse dormitory.

From The History of Broadlawns Medical Center