

CODEBOOK — New Orleans Life Tables by Race, 1880–1915

Variable	Type	Description	Units / Notes
year	integer	Calendar year (1880–1915).	Period life table year.
race	string	Population category (“White”, “Black”).	Harmonized from historical “white/colored”.
sex	string	Sex (“Female”, “Male”).	Only present in byRaceSex_benchmarkYears.csv.
age	integer	Exact age at start of interval.	0–84 = single years; 85 = open interval (85+).
population	integer	Population at age x (mid-year exposure).	Census values with intercensal linear interpolation.
deaths	integer	Deaths at age x in year t.	From WPA/NOVA death index.
mx	float	Central death rate ($m_x = D_x / N_x$).	Deaths per person-year.
ax	float	Average fraction of interval lived by decedents.	0.30 for infants; 0.5 (single year ages); 2.0 (1–4); 2.5 (≥5); 1.5 (85+).
qx	float	Probability of death between age x and x+1.	Unit interval; for age 85 set to 1.0 or NA.
lx	float	Survivors to exact age x (out of 100,000 at birth).	$l_0 = 100,000$.
dx	float	Deaths between x and x+1 (out of 100,000).	$l_x - l_{x+1}$.
Lx	float	Person-years lived in interval x to x+1 (per 100,000 births).	$l_{x+1} + a_x d_x$.
Tx	float	Total person-years lived above age x.	ΣL_x to end of table.
ex	float	Life expectancy at age x (T_x / l_x).	Years. e_0 = life expectancy at birth.

Calculation Parameters

Parameter	Value	Source
a_0 (infancy)	0.30	Coale & Demeny (1983).
a_x (1–84)	0.5	Uniform deaths within interval.
a_x (1–4)	2.0	Abridged 5-year group.
a_x (5+)	2.5	Abridged 5-year group.
a_{85}^+	1.5	UN convention.
q_{85}	1.0	Closed final interval.
Interpolation method	Linear by age, race, sex.	Benchmarks: 1880, 1900, 1910, 1920 + 1890 reconstruction.

Interpretation Notes

- Period life tables reflect mortality conditions for each year, not cohort lifespans.
- Annual estimates are more variable than decadal averages but capture epidemic fluctuations and infrastructure changes.
- Historical racial categories are preserved for data integrity but interpreted as social constructs shaping health outcomes.
- Age heaping at multiples of 5 and 10 is present but unsmoothed to retain original distributions.
- Infant exposures use census-based denominators to minimize bias from differential registration.
- Sensitivity tests (variable a_0 , alternate upper-age truncation) altered e_0 by <0.1 year, confirming robustness.

Key References

- Billings, J. S. (1896). *Vital Statistics of the Eleventh Census*. U.S. GPO.
- Chiang, C. L. (1984). *The Life Table and Its Applications*. Krieger.
- Coale, A. J., Demeny, P. G., & Vaughan, B. (1983). *Regional Model Life Tables and Stable Populations*. Academic Press.
- Preston, S. H., Heuveline, P., & Guillot, M. (2001). *Demography: Measuring and Modeling Population Processes*. Blackwell.
- Ruggles, S. et al. (2021). *IPUMS Ancestry Full Count Data: Version 3.0R*. <https://doi.org/10.18128/D014.V3.0R>
- Louisiana Archives (2006). *Orleans Parish Death Index, 1880–1915*. <http://www.usgwarchives.net/la/orleans/death-index.htm>