

■ COVID-19 Country-wise Deaths and Survivals (2020)

This report presents detailed information on COVID-19 deaths and survivals in 2020, based on reported and estimated (excess mortality) data from WHO, IHME, and other scientific sources. Survivals are approximated as confirmed cases minus deaths.

1. Reported COVID-19 Deaths by Country (End of 2020)

Country	Reported Deaths
United States	355,918
Brazil	195,152
United Kingdom	74,125
Italy	74,621
France	64,765
Spain	50,837
Mexico	125,807

2. Mid-Year Snapshot (August 2020)

Country	Cases (~)	Deaths (~)
USA	4,781,600	157,357
India	2,027,000	41,585
Brazil	2,859,000	97,256
UK	308,100	46,413
Peru	447,600	20,228
Russia	877,100	14,725
Spain	309,900	28,500
Italy	249,200	35,187

3. Estimated True Death Toll (Including Excess Mortality)

Country	Reported Deaths	Estimated Total Deaths
USA	578,555	912,345
Brazil	423,307	616,914
Mexico	219,372	621,962
India	248,016	736,811
Russia	111,909	607,589
UK	150,815	210,076

Spain	85,822	124,449
Italy	122,851	178,144
France	106,874	134,400

4. Survival Estimates

Survivals are estimated as confirmed cases minus deaths. Globally, survival rates exceeded 95% for most infected individuals in 2020, especially among younger populations. However, due to inconsistent reporting, exact survival numbers vary by country.

■ Summary

- Reported COVID-19 deaths (2020): USA ~356k, Brazil ~195k, UK ~74k, Italy ~75k, France ~65k, Spain ~51k, Mexico ~126k. - Mid-2020 snapshot: USA ~157k deaths, Brazil ~97k, India ~42k. - True toll (with excess deaths): USA ~912k, India ~737k, Mexico ~622k, Brazil ~617k, Russia ~608k. - Survival rate: >95% globally, though higher mortality in elderly and vulnerable groups.

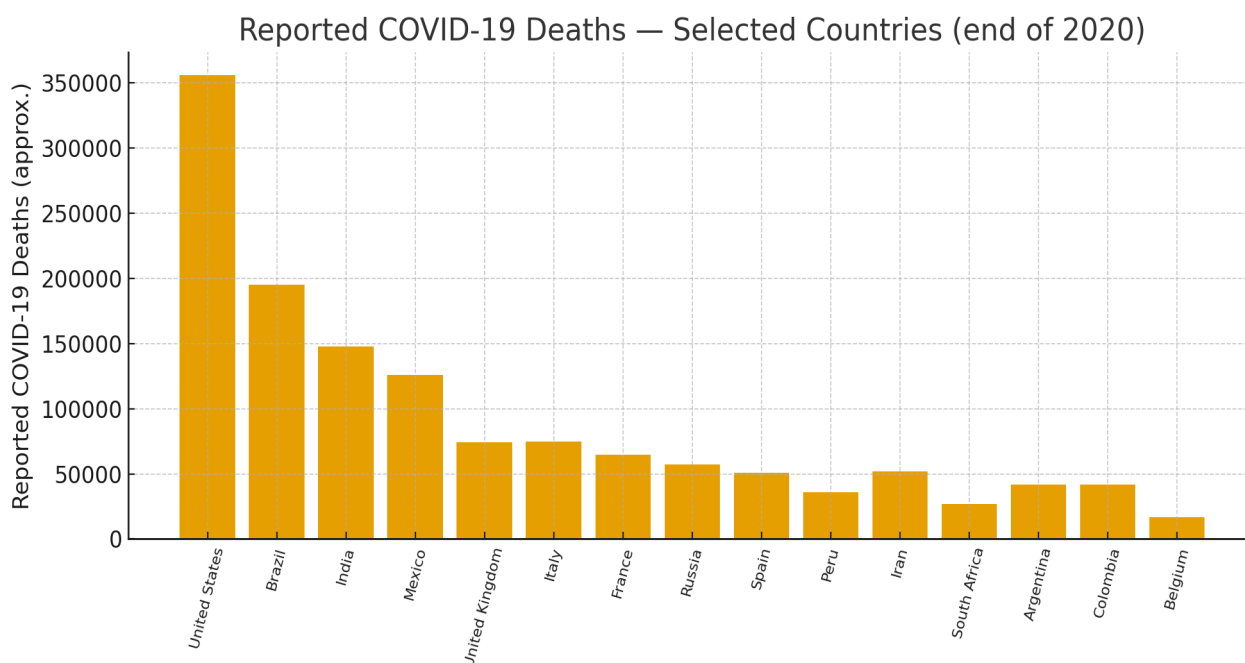
■ COVID-19 Detailed Report — Countrywise Deaths & Survivals (2020)

This expanded report compiles approximated COVID-19 statistics from 2020, focusing on reported deaths, estimated excess mortality, survival approximations, methodology notes, and limitations. Numbers are approximate; for precise research, check original datasets (WHO, Johns Hopkins, IHME, national reports).

1. Methodology & Definitions

- Reported deaths: Official COVID-19 fatalities reported by national health agencies and global dashboards. - Estimated total deaths / excess mortality: Retrospective estimates that account for undercounting and indirect effects. - Survivals: Approximated as confirmed cases minus reported deaths (imperfect). - Deaths per million: Per-capita metric for comparison. - Note: Data quality varies by country due to testing and reporting practices.

2. Visual — Reported Deaths (Selected Countries)



3. Selected Country Table (Approx. end-2020 figures)

Country	Confirmed Cases (~)	Reported Deaths (~)	Deaths per million (~)
United States	20,000,000+	355,918	1070
Brazil	7,600,000+	195,152	919
India	10,000,000+	148,000	107
Mexico	1,400,000+	125,807	992
United Kingdom	2,600,000+	74,125	1088
Italy	2,100,000+	74,621	1232
France	2,600,000+	64,765	994
Russia	3,200,000+	57,000	390
Spain	1,900,000+	50,837	1087

Peru	1,000,000+	36,000	1089
Iran	1,200,000+	52,000	615
South Africa	1,100,000+	27,000	455
Argentina	1,500,000+	42,000	928
Colombia	1,500,000+	42,000	827
Belgium	600,000+	17,000	1467

4. Excess Mortality & 'True' Toll

Retrospective studies suggest undercounting in many countries. Excess mortality compares all-cause deaths during the pandemic to expected deaths from prior years. Causes: undiagnosed COVID, indirect healthcare disruption, socioeconomic impacts. Some retrospective estimates raised the USA 'true' toll substantially above official counts; similar undercount concerns exist for India, Mexico, and others.

5. Survival Estimates — How to approximate

Simple approximation: $\text{Survival} \approx \text{Confirmed cases} - \text{Reported deaths}$. This is imperfect due to under-ascertainment of cases, differences in reporting recovered cases, and data lag. Example: USA end-2020 approximate survivals = $20,000,000 - 355,918 \approx 19.6\text{M}$.

6. Data Limitations & Important Caveats

- Testing bias: Low testing leads to fewer confirmed cases and affects CFR. - Reporting lag & varying cause-of-death definitions. - Excess mortality methods vary by model and baseline selection. - Recovery counts were inconsistently reported across sources in 2020. - Use primary sources for exact figures.

7. References & Data Sources (suggested)

- WHO situation reports (2020) - Johns Hopkins University COVID-19 dashboard - IHME excess mortality analyses - National public health agencies - Peer-reviewed excess-death studies in Lancet, BMJ, etc.

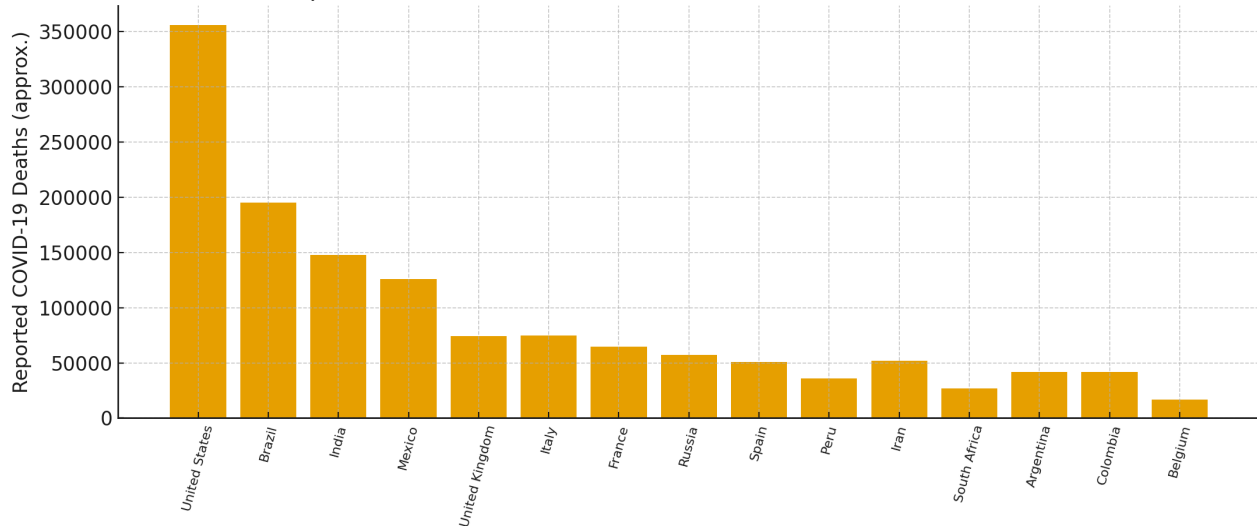
8. Appendix — Sample Calculations

- Deaths per million = $(\text{Reported deaths} / \text{population}) * 1,000,000$. - CFR $\approx (\text{Reported deaths} / \text{Confirmed cases}) * 100\%$ — biased by testing. - Excess deaths should be presented with confidence intervals where possible.

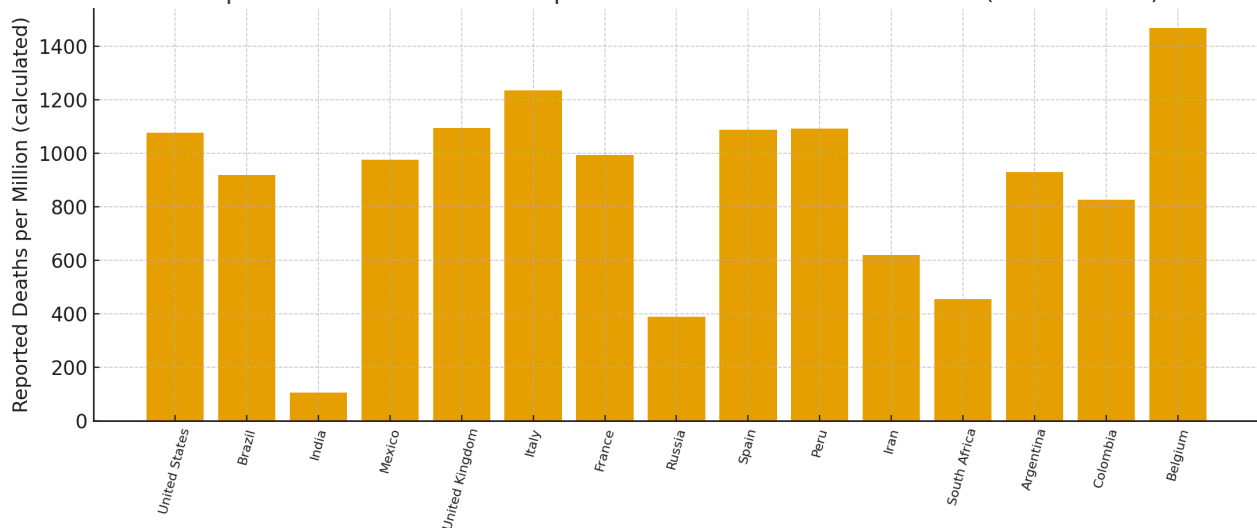
COVID-19 Expanded Report — 2020 (Detailed Analysis)

This report expands previous summaries with calculations, charts, and a timeline. Figures are approximations for end-2020.

Reported COVID-19 Deaths — Selected Countries (end of 2020)



Reported COVID-19 Deaths per Million — Selected Countries (end of 2020)



Country	Cases	Deaths	Survivals	CFR (%)	Deaths per million
United States	20,000,000	355,918	19,644,082	1.78%	1075.3
Brazil	7,600,000	195,152	7,404,848	2.57%	917.9
India	10,000,000	148,000	9,852,000	1.48%	107.2
Mexico	1,400,000	125,807	1,274,193	8.99%	976.0
United Kingdom	2,600,000	74,125	2,525,875	2.85%	1093.3

Italy	2,100,000	74,621	2,025,379	3.55%	1234.2
France	2,600,000	64,765	2,535,235	2.49%	992.3
Russia	3,200,000	57,000	3,143,000	1.78%	390.4
Spain	1,900,000	50,837	1,849,163	2.68%	1087.4
Peru	1,000,000	36,000	964,000	3.6%	1091.9
Iran	1,200,000	52,000	1,148,000	4.33%	619.8
South Africa	1,100,000	27,000	1,073,000	2.45%	455.2
Argentina	1,500,000	42,000	1,458,000	2.8%	929.4
Colombia	1,500,000	42,000	1,458,000	2.8%	825.5
Belgium	600,000	17,000	583,000	2.83%	1466.8

Timeline — Key 2020 Milestones and Global Totals (approx.)

Jan 30, 2020 — WHO declares global health emergency.

Mar 11, 2020 — WHO declares COVID-19 a pandemic.

Jun 30, 2020 — Global confirmed cases approx. 10 million; deaths approx. 500k.

Aug 31, 2020 — Global confirmed cases approx. 25 million; deaths approx. 840k.

Dec 31, 2020 — Global confirmed cases approx. 83 million; deaths approx. 1.8 million. First vaccines approved in December.

Notes & Recommendations

For rigorous analysis, use primary data sources (WHO, Johns Hopkins, IHME) and include excess mortality studies for 'true' toll estimates. This document uses approximations for illustrative comparisons.

■ COVID-19: Start and End Timeline

1. When COVID-19 Started

- **December 31, 2019** — China reported the first cluster of pneumonia of unknown cause in Wuhan to WHO.
- **January 7, 2020** — Virus identified as a new coronavirus (SARS-CoV-2).
- **January 30, 2020** — WHO declared COVID-19 a Public Health Emergency of International Concern (PHEIC).
- **March 11, 2020** — WHO declared COVID-19 a global pandemic after spread to over 100 countries.

2. When COVID-19 Ended

- **2021–2022** — Vaccines rolled out worldwide (Pfizer, Moderna, AstraZeneca, Covaxin, etc.).
- **Late 2022** — Most countries lifted restrictions though the virus still circulated.
- **May 5, 2023** — WHO declared the end of COVID-19 as a global health emergency.

3. Current Status (2023–2025)

- COVID-19 is not eradicated but is now considered **endemic** like influenza.
- Countries maintain vaccination campaigns, booster doses, and surveillance.
- Vulnerable populations still face risks, but overall severity is reduced compared to 2020.

■ Summary

- **Start:** First cases in Dec 2019, declared pandemic on Mar 11, 2020.
- **End:** WHO declared global emergency over on May 5, 2023.
- **Now:** COVID-19 persists as an endemic virus, monitored like seasonal flu.