

Ciência de Dados Aplicada à Saúde

Código: IAA019

Visualização Interativa de Dados em Saúde (parte 1)

Mauro Castro

Visualização Interativa

- A visualização interativa envolve representações gráficas de dados com o objetivo de melhorar a maneira como interagimos com informações.
- Visualização interativa também se refere a exibições gráficas usadas por ferramentas de análise (*e.g. Business Intelligence*).
- Na maioria das vezes, essas visualizações são usadas na forma de painéis interativos (*dashboard*), que fornecem um formato amigável para auxiliar na leitura de dados que podem mudar rapidamente.
- Para que um formato de visualização seja considerado interativo, deve ter o aspecto da participação humana (*input*) - clicar em um botão, mover um controle deslizante - bem como um tempo de resposta rápido o suficiente para mostrar uma relação real entre a entrada de dados e a saída visual.

<https://gco.iarc.fr/>

International Agency for Research on Cancer



World Health Organization



GLOBAL CANCER OBSERVATORY

HOME

ABOUT THE GCO

PROJECTS

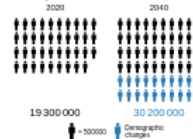
ABOUT US

HELP

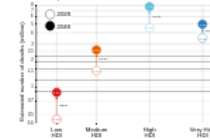
Predict the future cancer incidence and mortality burden worldwide up until 2040.

CANCER TOMORROW

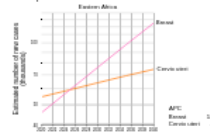
Explore the future of cancer burden



Explore the future of cancer burden



Explore the future of cancer burden



CANCER TODAY

CANCER OVER TIME

CANCER TOMORROW

CANCER CAUSES

CANCER SURVIVAL

CANCER @CSU

Latest publications



25 Apr 2022

Current and projected number of years of life

Tweets by @GLOBOCAN_GCO



Global Cancer Observatory (GCO)
Retweeted

Latest CSU branch updates

24 November 2021

Launch of Cancer Over Time on IARC Global

<https://gco.iarc.fr/>

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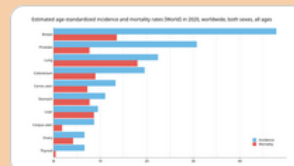
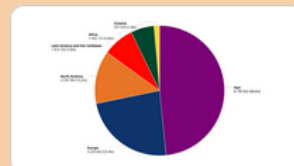
PROJECTS

ABOUT US

HELP

Explore national incidence, mortality, and prevalence for 36 cancer types in 185 countries.

CANCER TODAY



Cancer type	Estimated number of new cancer cases in 2020, worldwide
Lung cancer	1,199,000
Breast cancer	1,199,000
Colorectal cancer	1,199,000
Prostate cancer	1,199,000
Stomach cancer	1,199,000
Esophagus cancer	1,199,000
Bladder cancer	1,199,000
Uterus cancer	1,199,000
Testis cancer	1,199,000
Other	1,199,000

CANCER TODAY

CANCER OVER TIME

CANCER TOMORROW

CANCER CAUSES

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Display Scale Sort

Add trend

Explore by

Population

Statistics

Absolute numbers

Incidence

Mortality

Both

Males

Females

Bars mode

Grouped

Stacked

Cancer type(s) (1)

Grouped

All cancers

Predefined regions

Pick a predefined region

Population(s) (6)

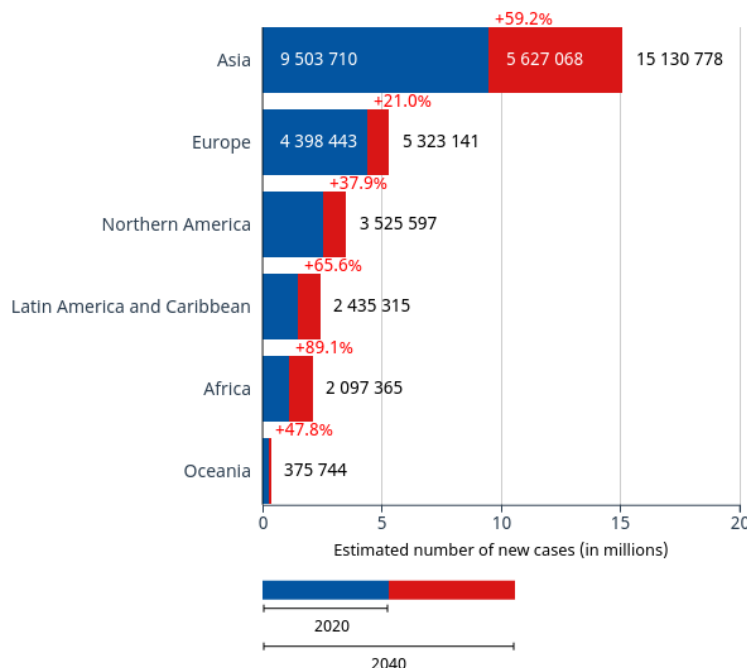
Grouped

Africa

Latin America and ...

Age groups

Estimated number of new cases from 2020 to 2040, Both sexes, age [0-85+] All cancers



CANCERTOMORROW | IARC - All Rights Reserved 2022 - Data version: 2020

Display

Scale

Add trend

Incidence

Mortality

Both

Males

Females

Cancer type(s) (1)

Grouped



All cancers

Predefined regions

Pick a predefined region

Population(s) (6)

Grouped



Africa



Latin America and ...



Age groups

0

85+

2040

Reset

Estimated number of new cases from 2020 to 2040, Both sexes, age [0-85+]

All cancers

Africa + Latin America and Caribbean + Northern America + Europe + Oceania + Asia

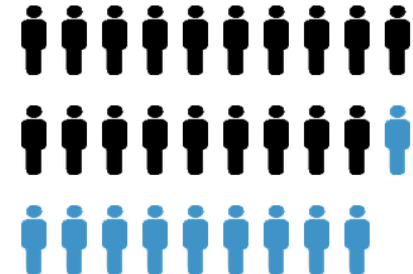


2020



19.3M

2040



28.9M



= 1 000 000



Demographic changes

Display Add trend

Explore by

Population

Incidence Mortality

Both Males Females

Cancer type(s) (1) Grouped

All cancers

Predefined regions

Pick a predefined region

Population(s) (6) Grouped

Africa

Latin America and ...

Age groups

0 85+

2040

Reset

Estimated number of new cases from 2020 to 2040, Incidence, Both sexes, age [0-85+] All cancers

Numbers

Population	Annual population		Number of new cases		Change in number of cases	Change in number of cases due to population	Change in number of cases due to risk
	2020	2040	2020	2040			
Africa	1 340 598 085	2 076 749 596	1 109 209	2 097 365	+89.1%	+89.1%	-
Asia	4 639 847 461	5 187 624 848	9 503 710	15 130 778	+59.2%	+59.2%	-
Europe	748 843 406	729 134 396	4 398 443	5 323 141	+21.0%	+21.0%	-
Latin America and Caribbean	653 962 332	742 347 832	1 470 274	2 435 315	+65.6%	+65.6%	-
Northern America	368 869 644	410 177 116	2 556 862	3 525 597	+37.9%	+37.9%	-
Oceania	42 677 809	52 813 578	254 291	375 744	+47.8%	+47.8%	-
Total(s)	7 794 798 737	9 198 847 366	19 292 789	28 887 940	+49.7%	+49.7%	-

Display Scale Sort

Add trend

Explore by

Population

Incidence Mortality

By sex Both sexes

Cancer type(s) (1) Grouped

All cancers

Predefined regions

Pick a predefined region

Population(s) (6) Grouped

Africa

Latin America and ...

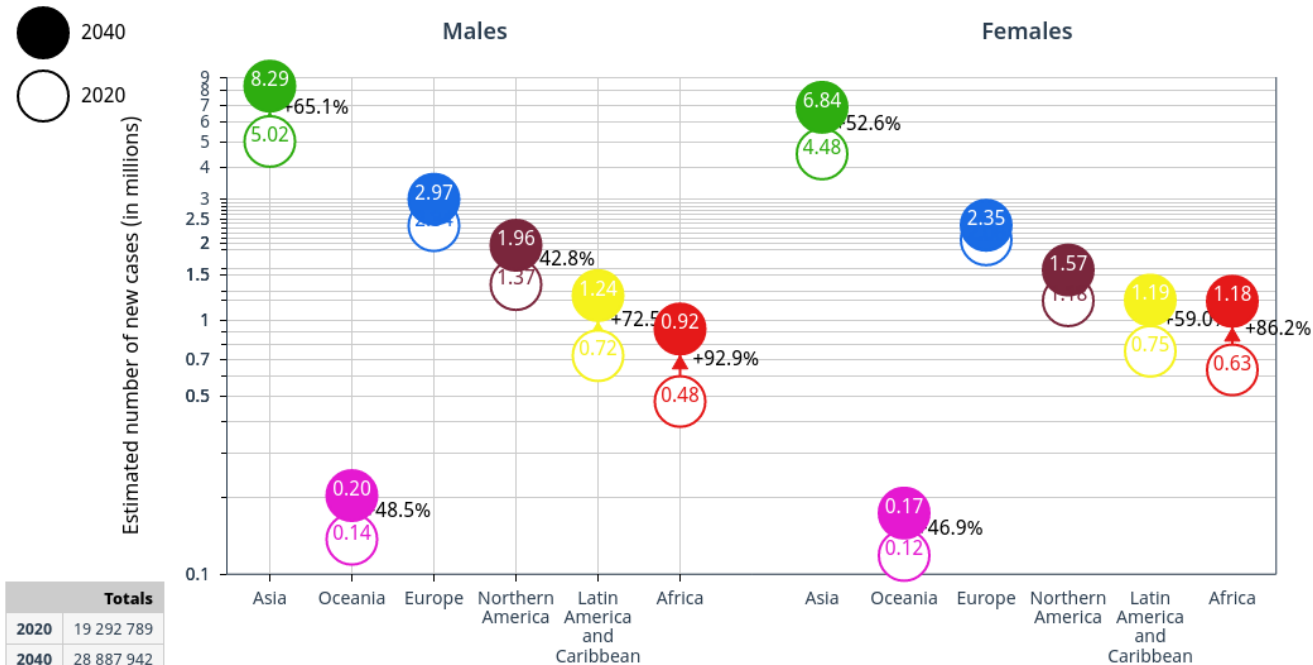
Age groups

0 85+

2040

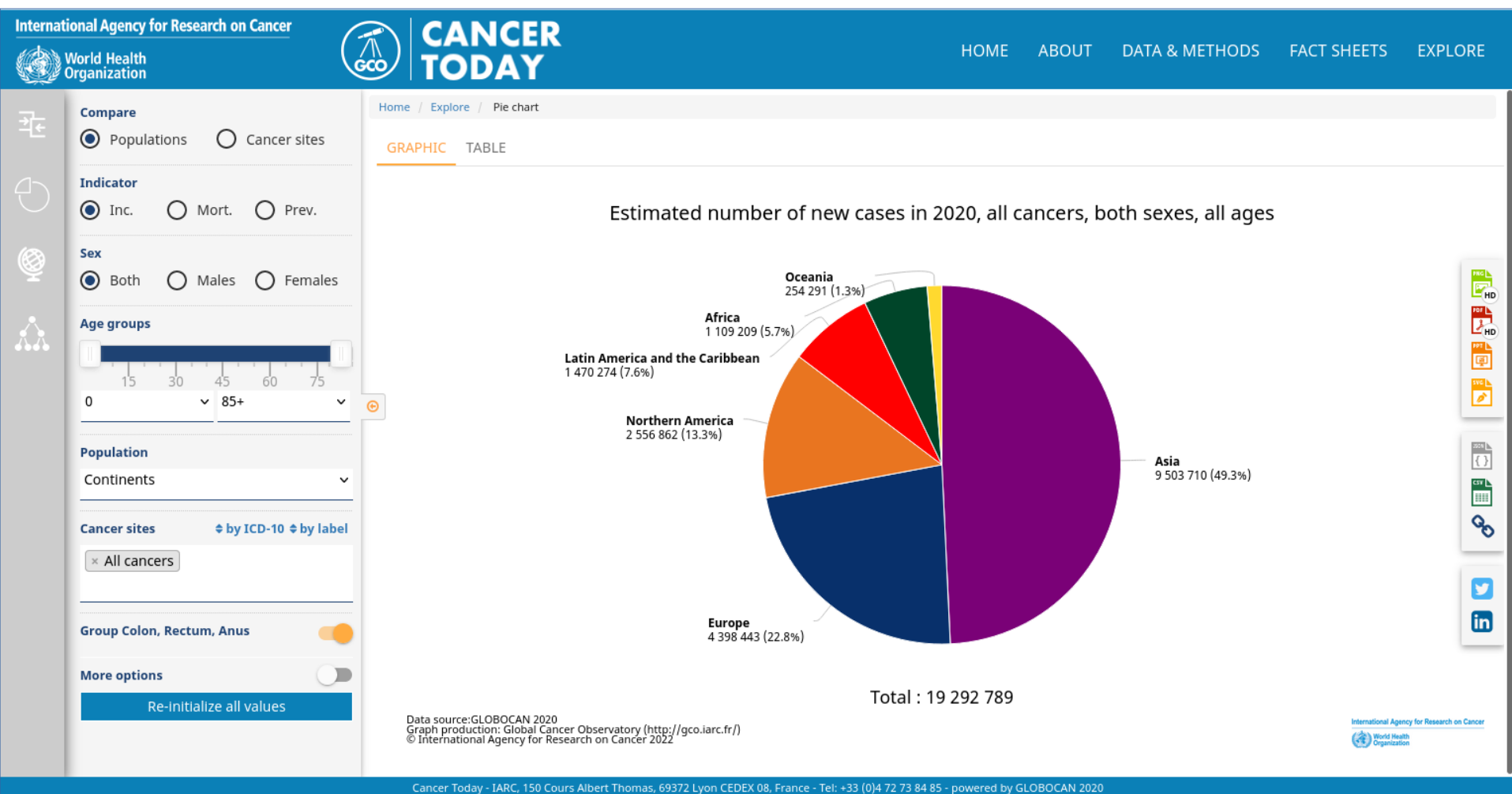
Reset

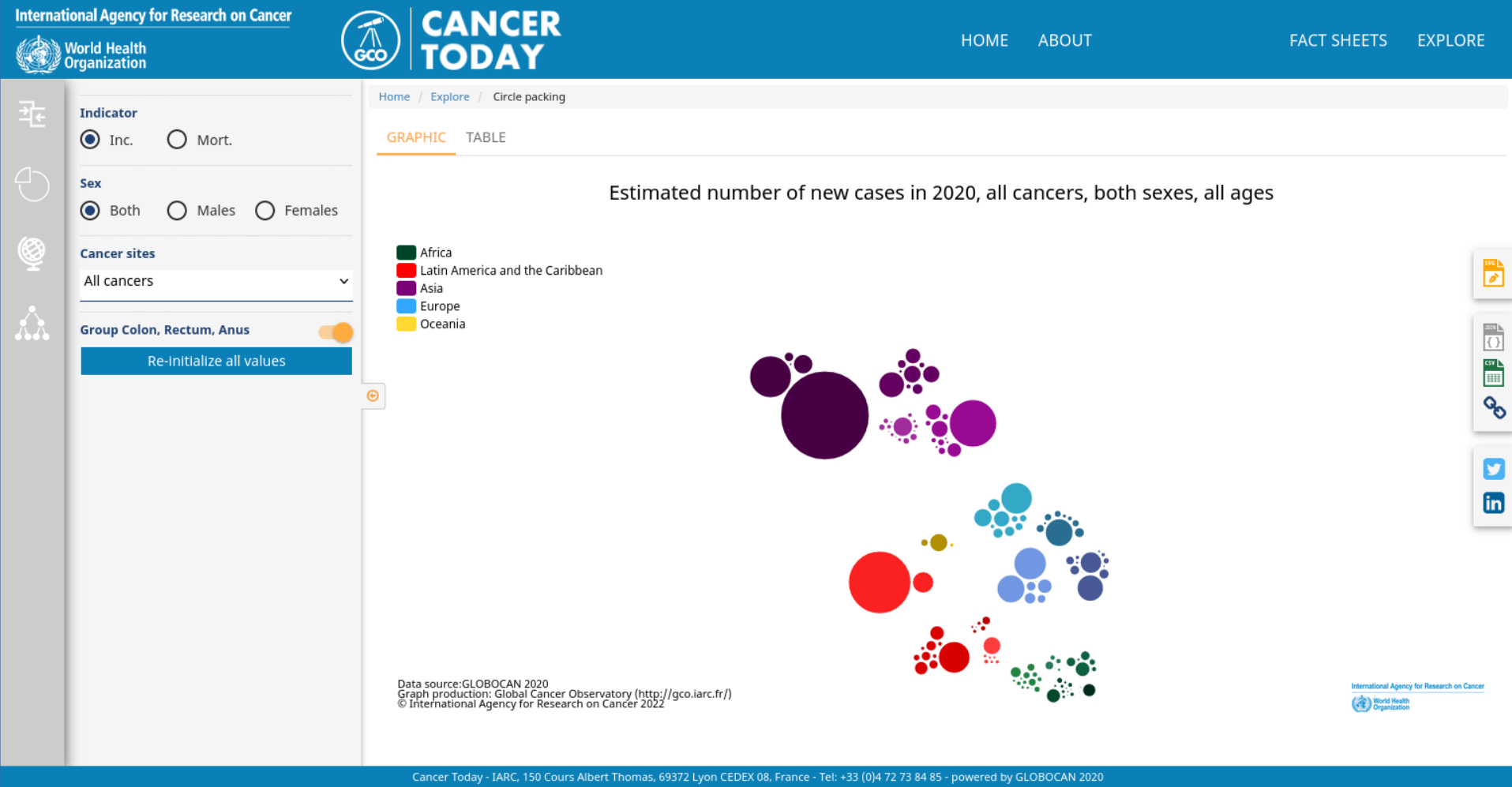
Estimated number of new cases from 2020 to 2040, Males and Females, age [0-85+]
All cancers



Totals	
2020	19 292 789
2040	28 887 942

CANCERTOMORROW | IARC - All Rights Reserved 2022 - Data version: 2020





International Agency for Research on Cancer



CANCERS ATTRIBUTABLE TO INFECTIONS



ABOUT

DATA SOURCES & METHODS

ANALYSIS TOOLS

ACKNOWLEDGEMENTS

HELP

PIE CHARTS

BAR CHARTS

MULTIBAR CHARTS

MAPS

SUNBURST CHARTS

Display by

Age-standardized rate

Continent

The world

Per agent

All agents

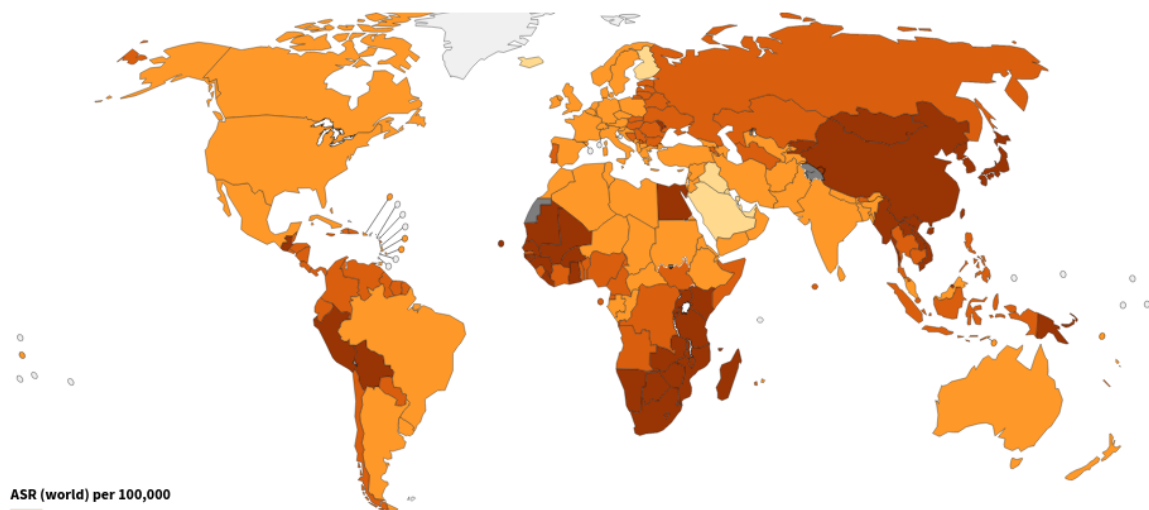
Sex

Both

Scale

Threshold

Age-standardized rates (worldwide) per 100 000 individual in 2018 attributable to infections (all infectious agents), by country



The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or

Data source:
de Martel C, Georges D, Bray F, Ferlay J,
Clifford GM (2020)



International Agency for Research on Cancer



CANCERS ATTRIBUTABLE TO UV RADIATION



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PIE CHARTS

BAR CHARTS

DUAL BAR CHARTS

MULTIBAR CHARTS

MAPS

TREEMAPS

SUNBURST CHARTS

Display by

PAF (melanoma)

Continent

The world

Sex

Men and women

Age group

All ages (30+ years)

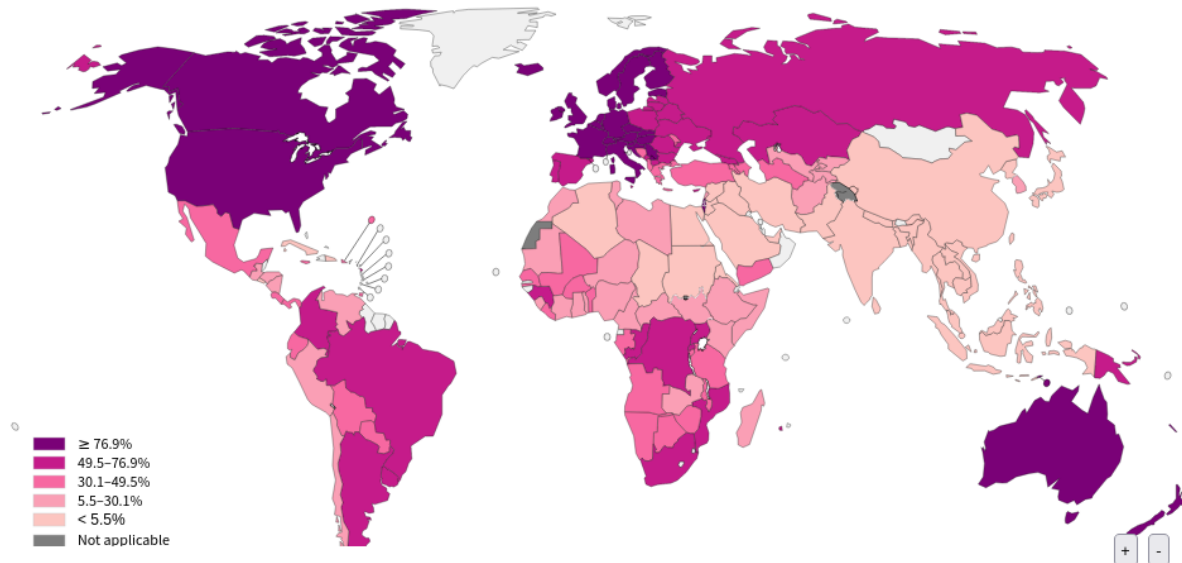
Scale

Ranked

Colour palette



Population attributable fraction (PAF) of melanoma cases worldwide in 2012, among men and women of all ages (30+ years), attributable to ultraviolet (UV) radiation exposure, by country



PAF (World): 75.7%

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or

Data source:

Arnold M et al. (2018)

Map production: IARC



World Health Organization



Search by Country, Territory, or Area

Covid-19 Response Fund



Donate

WHO Coronavirus (COVID-19) Dashboard

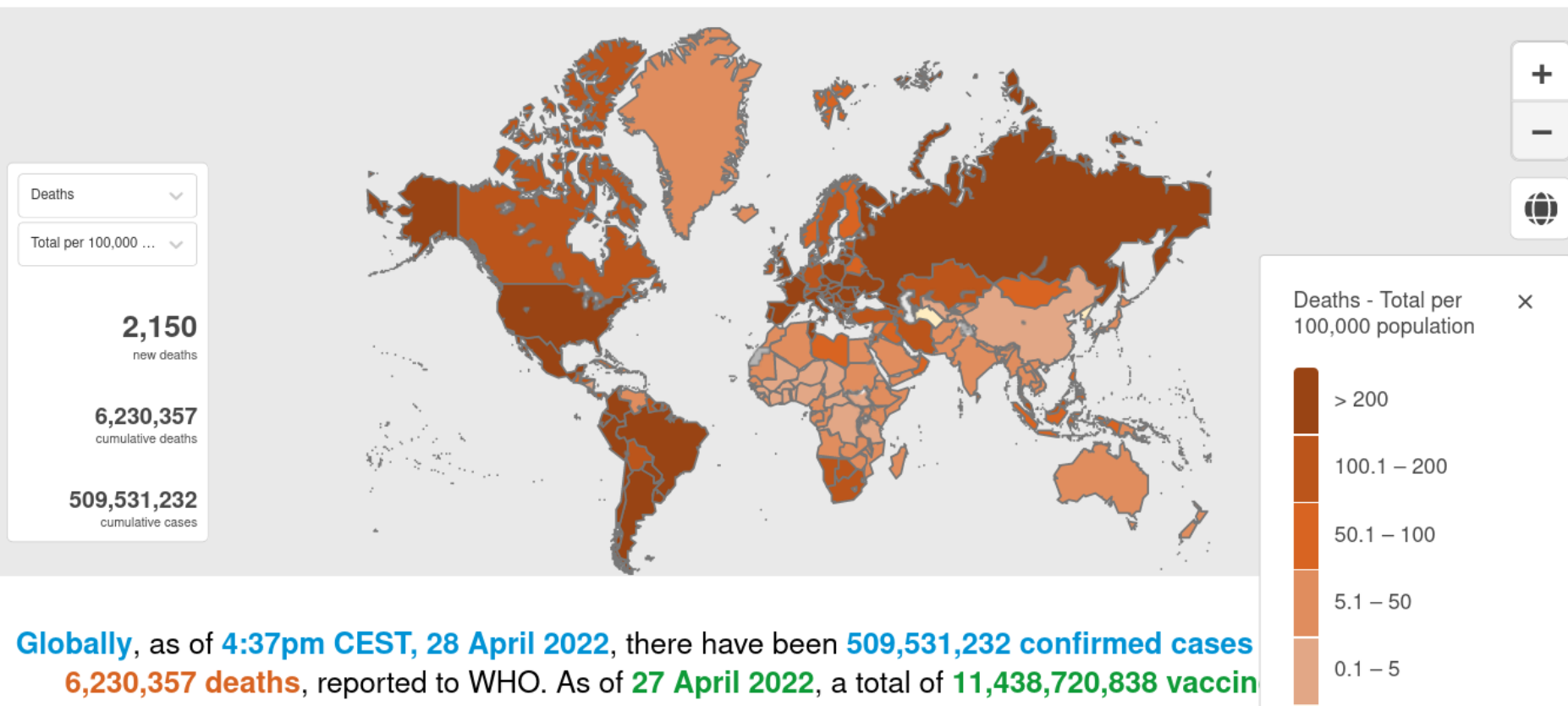
Overview

Measures

Table View

Data

More Resources





COVID-19 Dashboard by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University (JHU)

Last Updated at (M/D/YYYY)

4/28/2022, 4:20 PM

Total Cases

512,163,080

Total Deaths

6,230,575

Total Vaccine Doses Administered

11,325,911,005

Cases | Deaths by

Country/Region/Sovereignty

Korea, South

28-Day: 3,990,995 | 6,236

Totals: 17,144,065 | 22,588

Germany

28-Day: 3,466,942 | 5,673

Totals: 24,609,159 | 135,078

France

28-Day: 3,039,935 | 3,448

Totals: 28,733,187 | 146,748

Italy

28-Day: 1,711,764 | 3,889

28-Day Cases

25,216,007

28-Day Deaths

90,187

28-Day Vaccine Doses Administered

396,433,835



Weekly Cases

Weekly Deaths

Administere

Dados até 27/04/2022



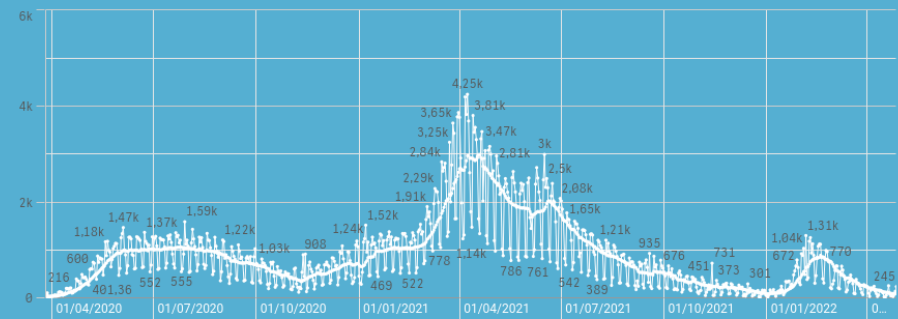
Reg.Metropolitana/Interior

Em acompanhamento (Brasil)

254.895

Óbitos Acumulados 100mi

316





Uma lista não exaustiva de *dashboard softwares* (código aberto e proprietário):

Tableau, IBM Cognos, Google Data Studio,
Microsoft Power BI, Seal Report, ReportServer,
Community Edition, Metabase, **Shiny**, Cyfe,
QlikView, Databox, Cluvio, Kyubit, Bilbeo, Arcadia,
Sisense, iDashboard, SAP, GoodData, Datapine BI,
MicroStrategy, JReport, Izenda, InetSoft, Periscope
Data, ClicData, DataHero, Dundas BI, Dasheroo,
Zoho, Looker, TIBCO, Domo, ..., etc.