Mortality analysis in Argentina: trends and patterns during the period 2015-2021

CREATED BY: ESTEBAN R.
Data provided by the Argentine Ministry of Health

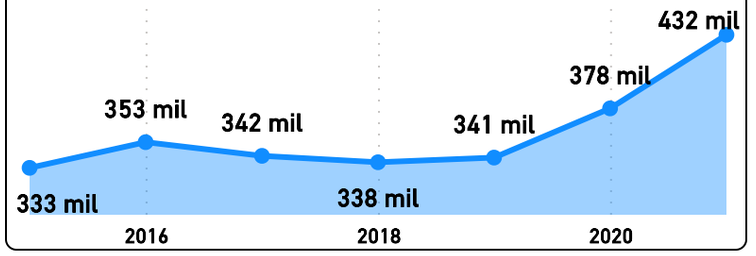
DATE
01/01/2015 01/12/2021

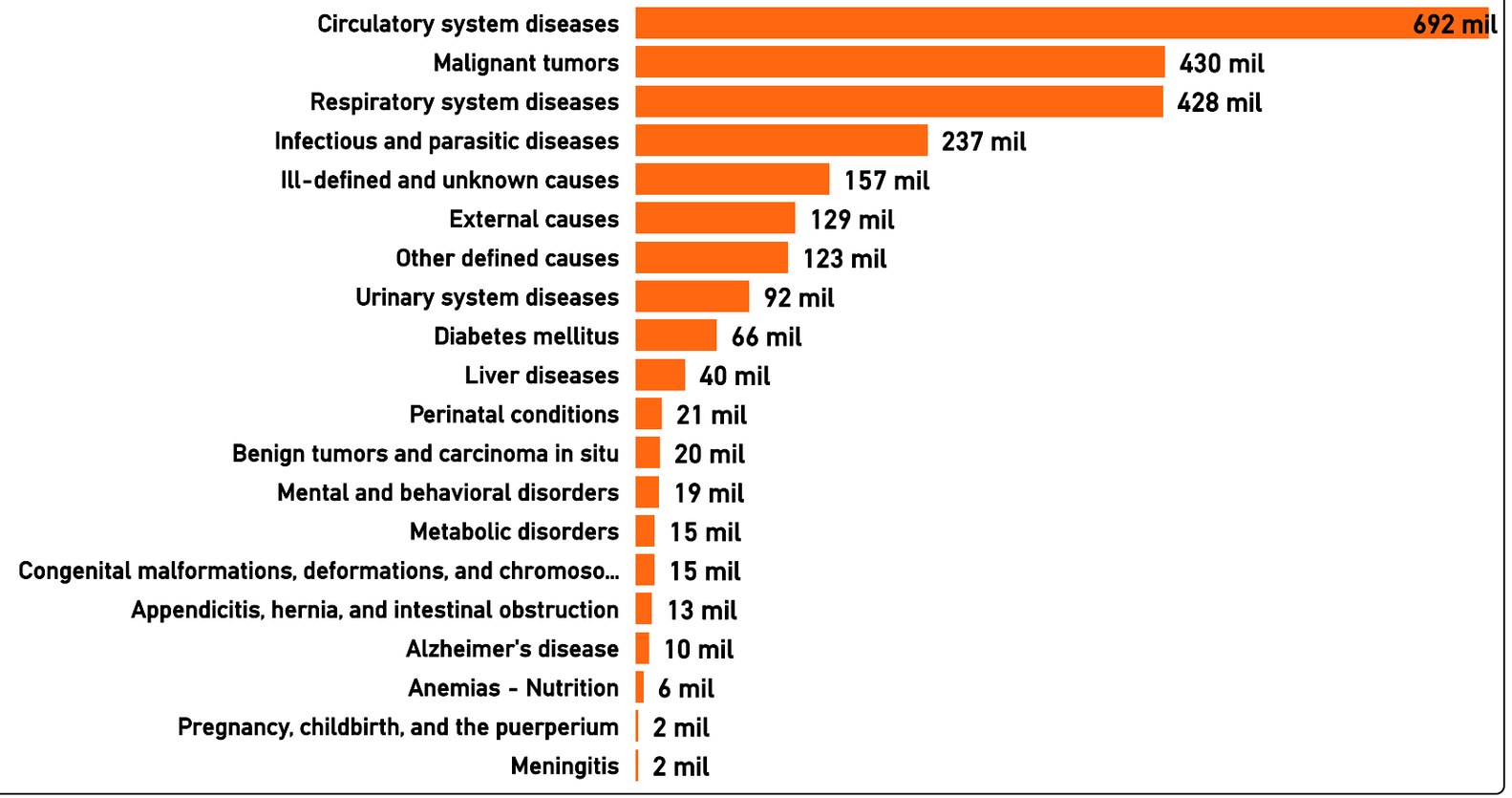
AGE GROUP
Todas

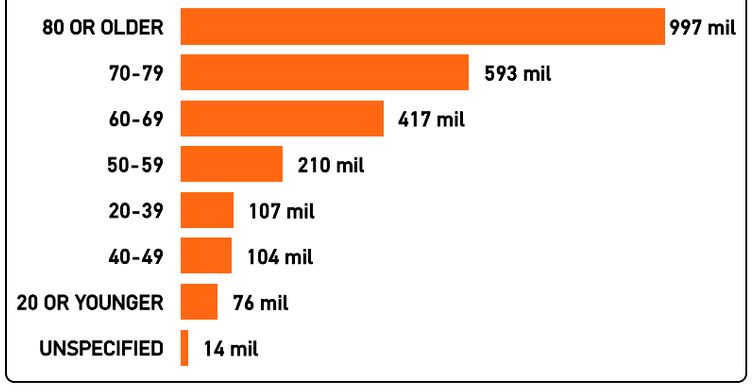
REGION
Todas

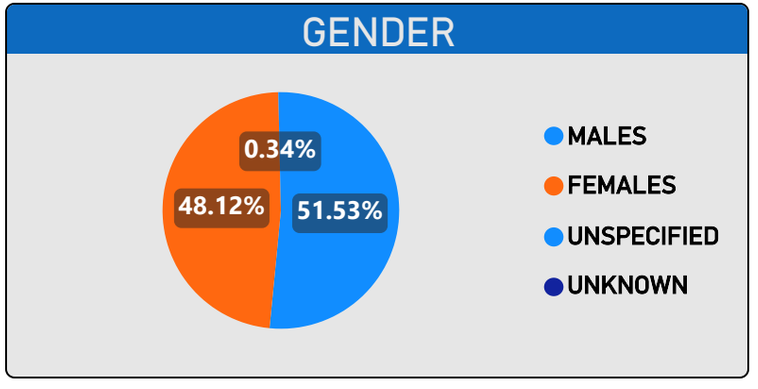
TOTAL
2.517 mill.

MORTALITY RATE
54.66

YEAR


CAUSES


AGE GROUP


GENDER


ABOUT THIS PROJECT

This project was carried out as **part of a final capstone project in the Data Analyst course, provided by Coursera in collaboration with Google**. The purpose of the project is to apply all the skills learned during the course within the ask, prepare, process, analyze, share, and act methodology.

Project duration: 1 week.

METHOD

The public dataset provided by the Argentine Ministry of Health available on the Argentine public data website was used.

The tools used for data cleaning, extraction, preparation, and analysis were:

1. **SQL server:** Due to the size of the dataset, which consists of more than 2 million data points, queries were used to extract, sort, and filter the information in order to reduce its size and allow it to be used in an environment such as Excel.
2. **Excel:** Data cleaning was performed using Excel, as well as preliminary analysis using pivot tables and charts. The table created was later used in Power BI
3. **R:** Like SQL, the R programming language was used to filter, sort, and validate the data to ensure its accuracy.

DATA TABLE AND DETAILS ABOUT THE DATASET AND PROJECT

The nomenclature for causes of death corresponds to those defined in the ICD-10 by the WHO and followed by the Argentine Ministry of Health.

The following formula was used to calculate the mortality rate:

(Total number of deaths in a given year / Estimated total population in a given year) * 1000 inhabitants

This should be understood as the crude mortality rate and not confused with other mortality rates.

Año	AGE_GROUP	SEX	TOTAL	CAUSE_OF_DEATH
2015	20 OR YOUNGER	FEMALES	12	Anemias - Nutrition
2015	20 OR YOUNGER	FEMALES	9	Appendicitis, hernia, and intestinal c
2015	20 OR YOUNGER	FEMALES	40	Benign tumors and carcinoma in sit
2015	20 OR YOUNGER	FEMALES	118	Circulatory system diseases
2015	20 OR YOUNGER	FEMALES	1132	Congenital malformations, deforma
2015	20 OR YOUNGER	FEMALES	6	Diabetes mellitus
2015	20 OR YOUNGER	FEMALES	731	External causes
2015	20 OR YOUNGER	FEMALES	256	Ill-defined and unknown causes
2015	20 OR YOUNGER	FEMALES	196	Infectious and parasitic diseases
2015	20 OR YOUNGER	FEMALES	26	Liver diseases
2015	20 OR YOUNGER	FEMALES	214	Malignant tumors

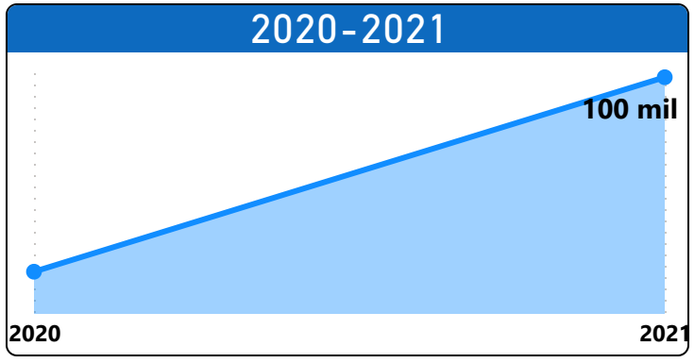
Año	TOTAL	MORTALITY RATE
2021	432242	9.39
2020	377592	8.20
2016	352506	7.66
2017	342344	7.44
2019	341057	7.41
2018	337600	7.33
2015	333443	7.24

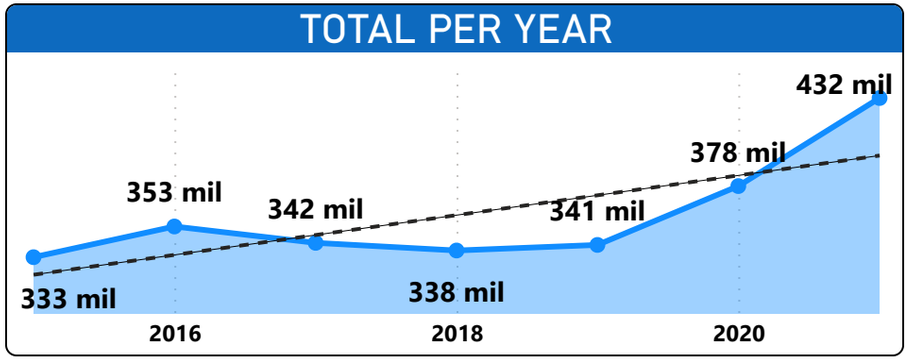
ABOUT THE DATA:

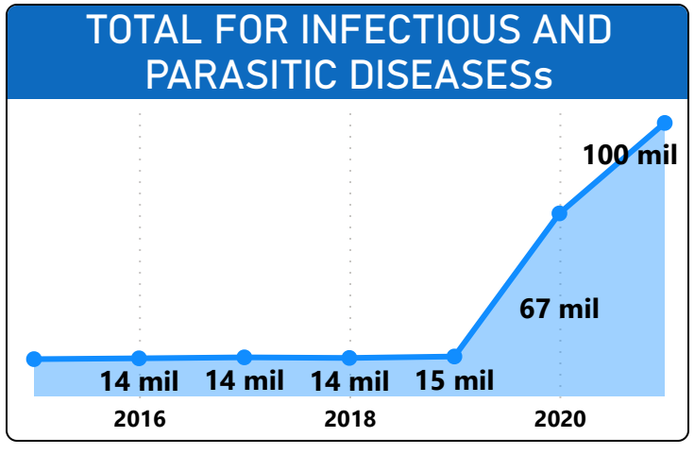
The aforementioned dataset contains deaths that occurred in Argentina from 2015 to 2021. These data are provided by various agencies in the Argentine provinces, which are subsequently collected by the Ministry of Health. Therefore, the dataset contains a total of 2,516,784 rows and 11 columns.

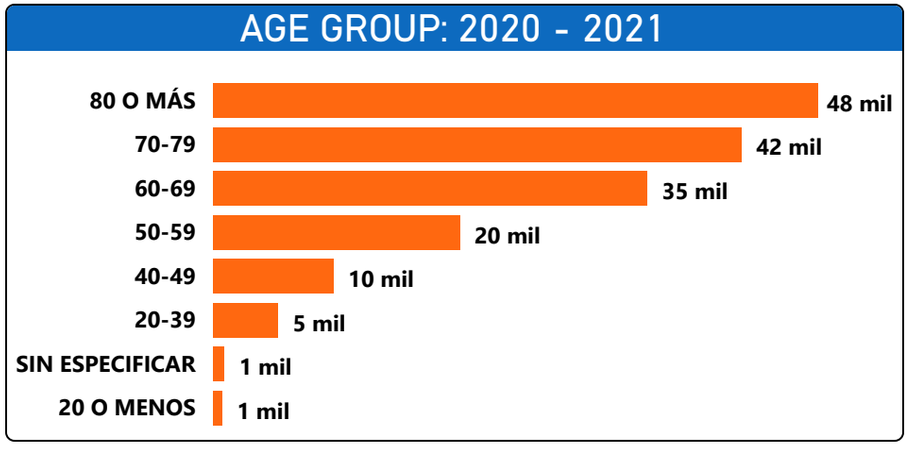
SOME ANALYSES EXTRACTED FROM THIS PROJECT:

The impact of **COVID-19 during the years 2020 and 2021 was analyzed.**



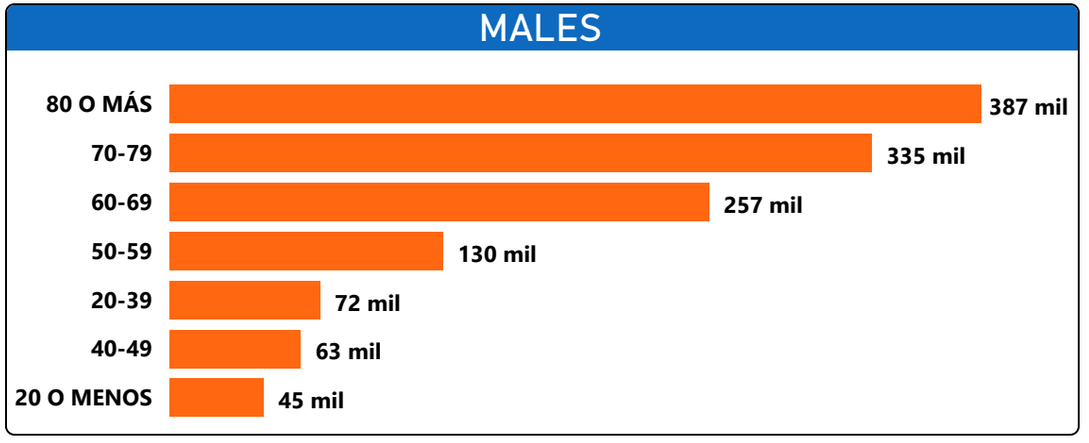


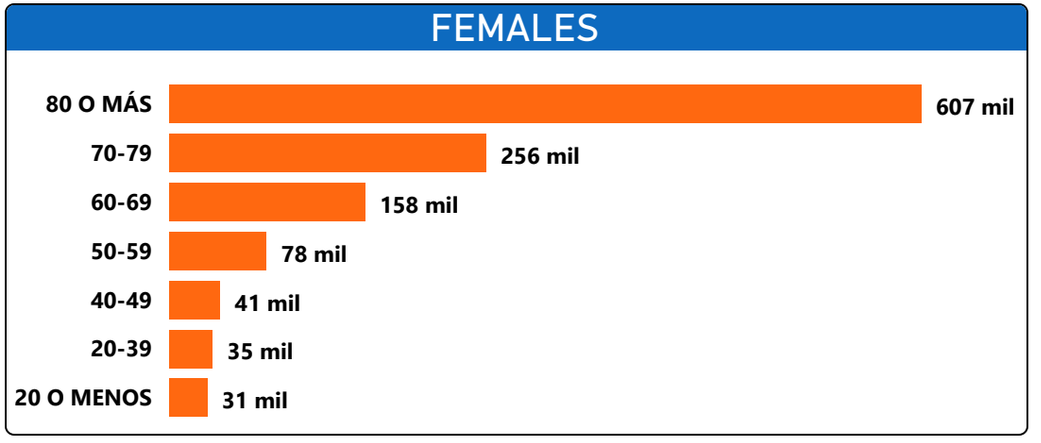


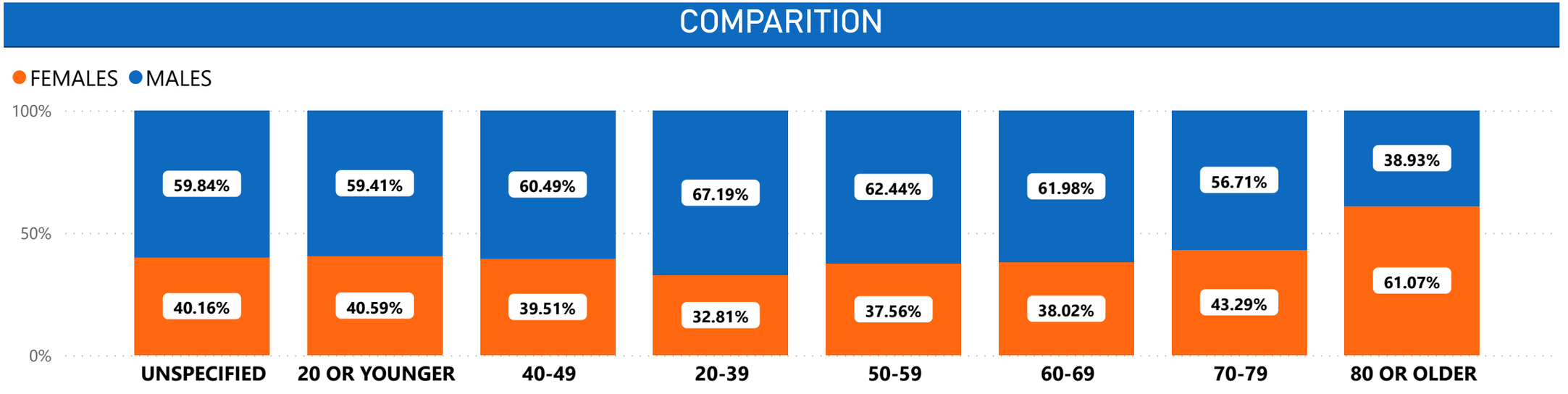


LONGEVITY BETWEEN WOMEN AND MEN

Women have a higher longevity, with the majority of female deaths occurring after the age of 80. In the case of men, deaths of men predominate in the remaining age groups.



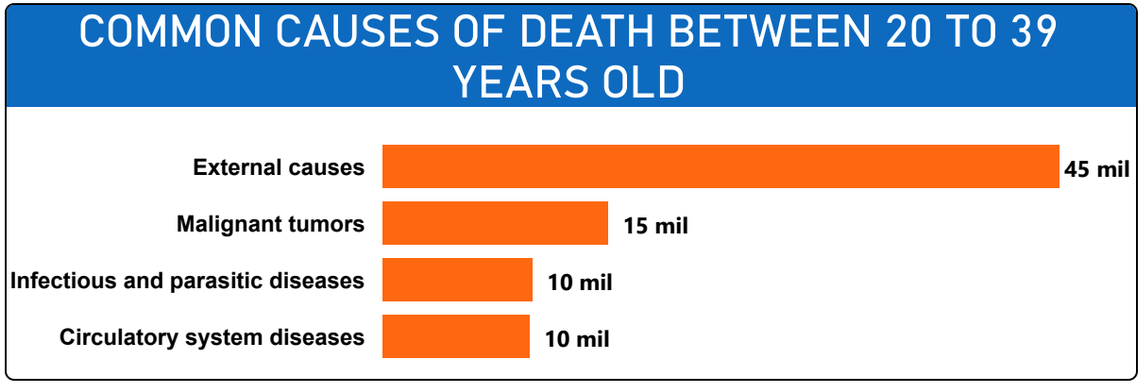


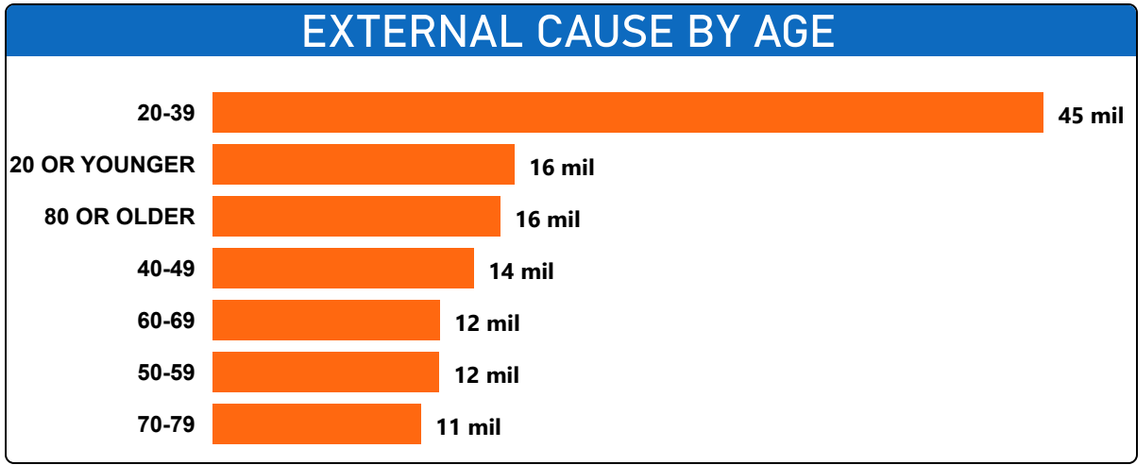


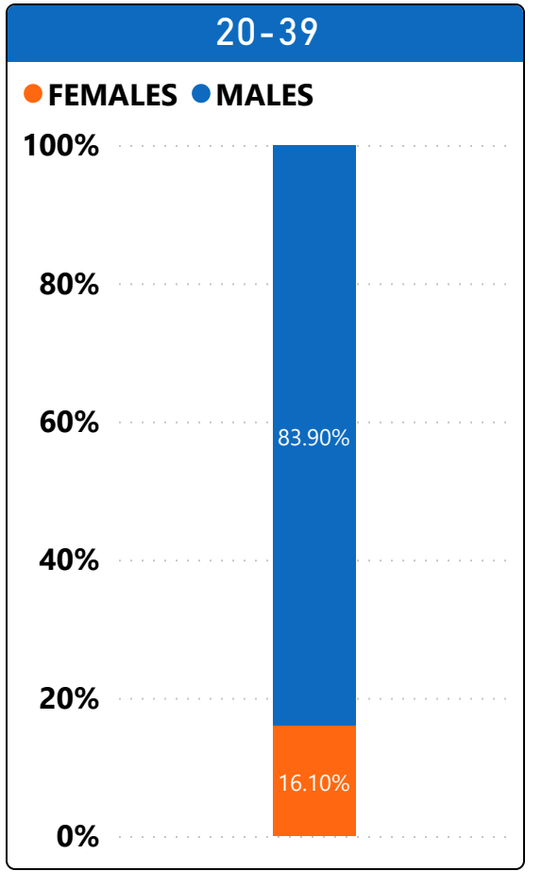
External causes deaths (2015-2021)

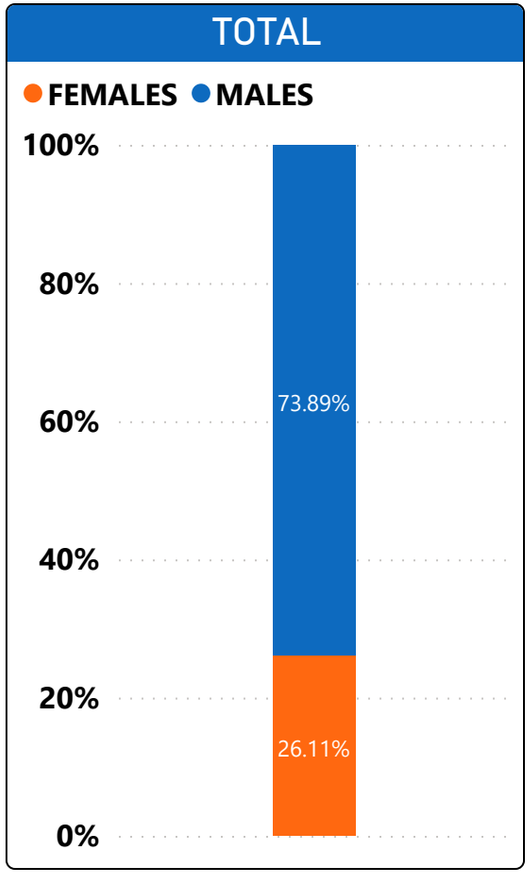
By external causes, we mean those sudden deaths caused by exposure to an external force that results in death, such as self-inflicted (suicides), interpersonal (homicides), traffic accidents, etc. Thus, our results showed firstly that it is the leading cause of death in young adults.

Secondly, the majority of subjects are male, showing one of the largest gender gaps in causes of death among all age groups studied.



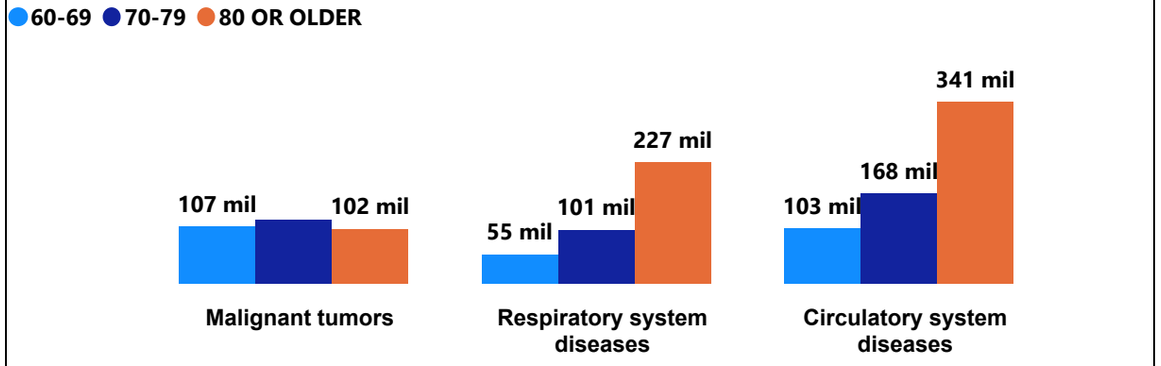




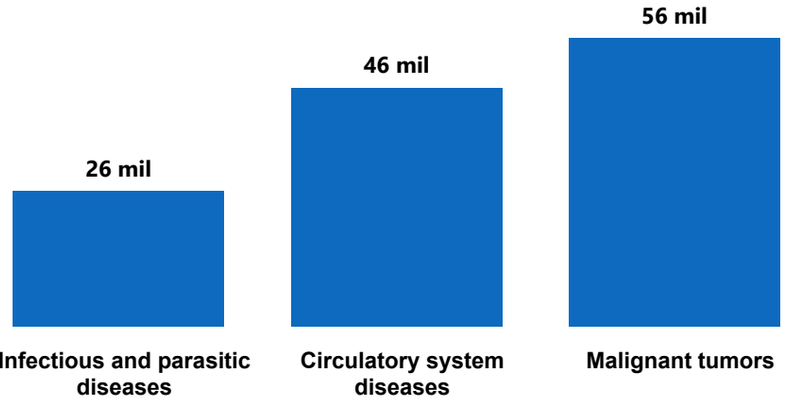


COMMON CAUSES OF DEATH IN OTHER AGE GROUPS

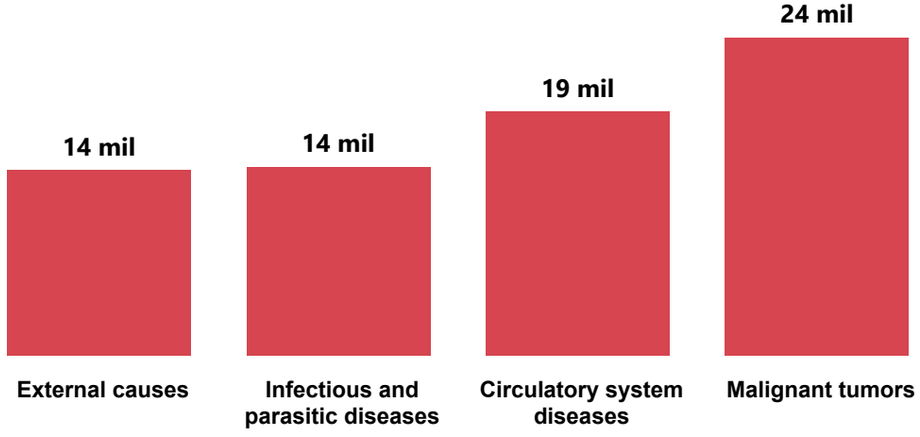
COMMON CAUSES OF DEATH BETWEEN 60 AND 80+ YEARS OLD



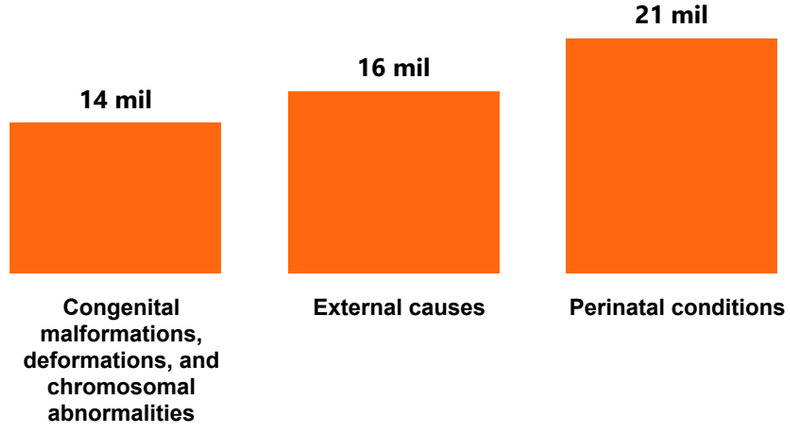
50-59 YEARS



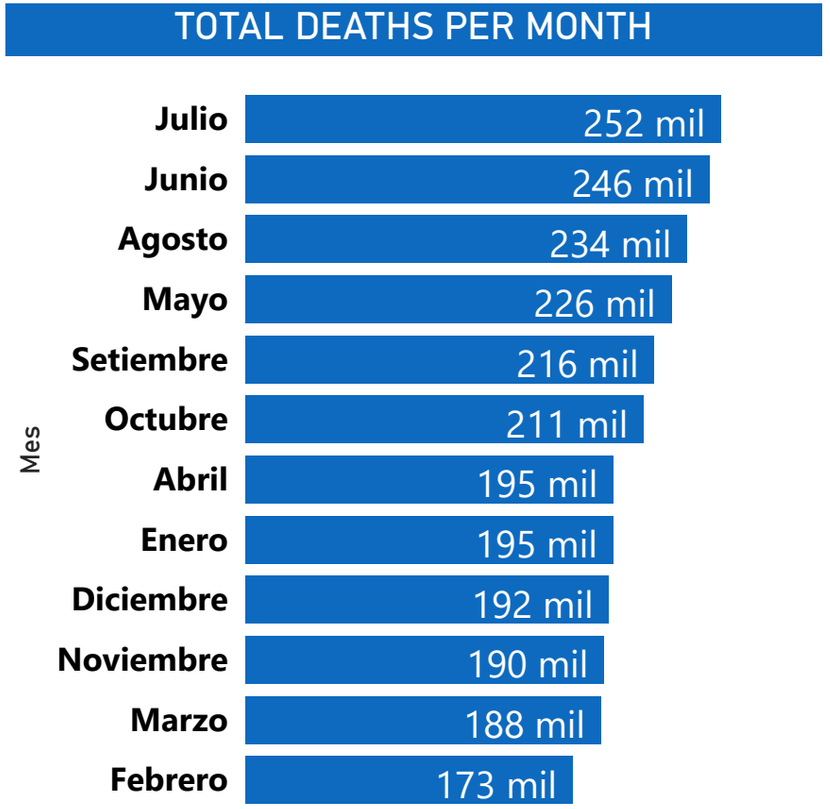
40-49 YEARS

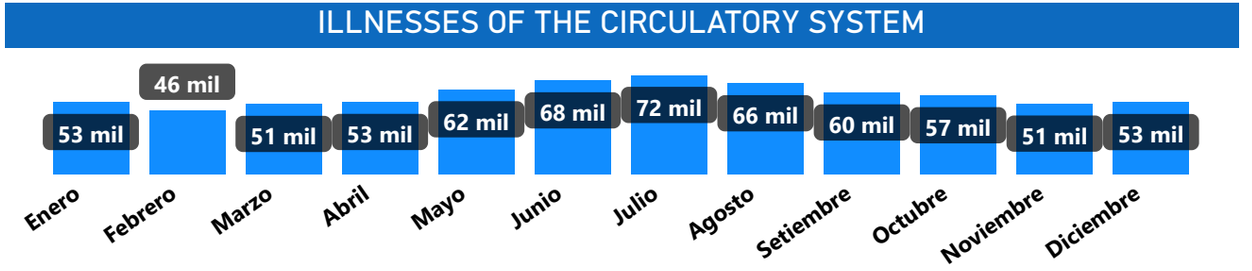


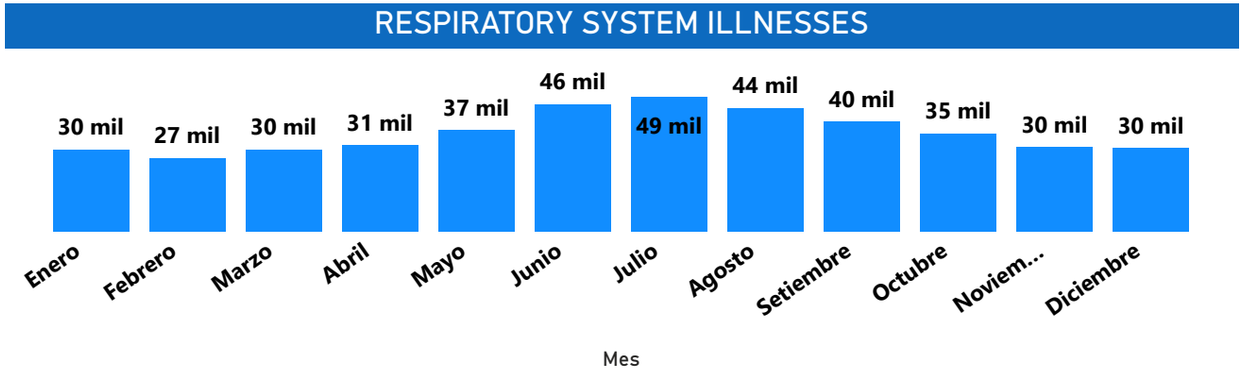
UNDER 20 YEARS OLD

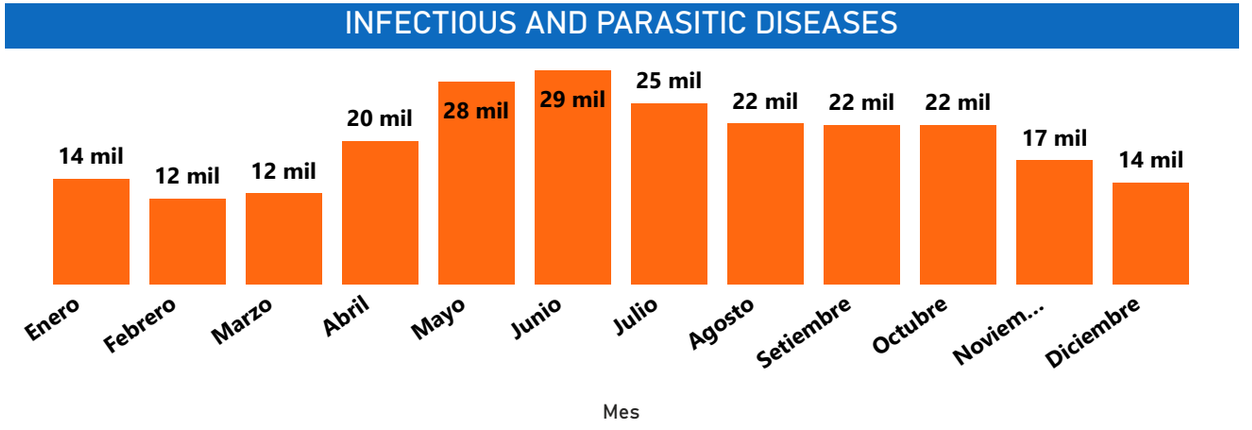


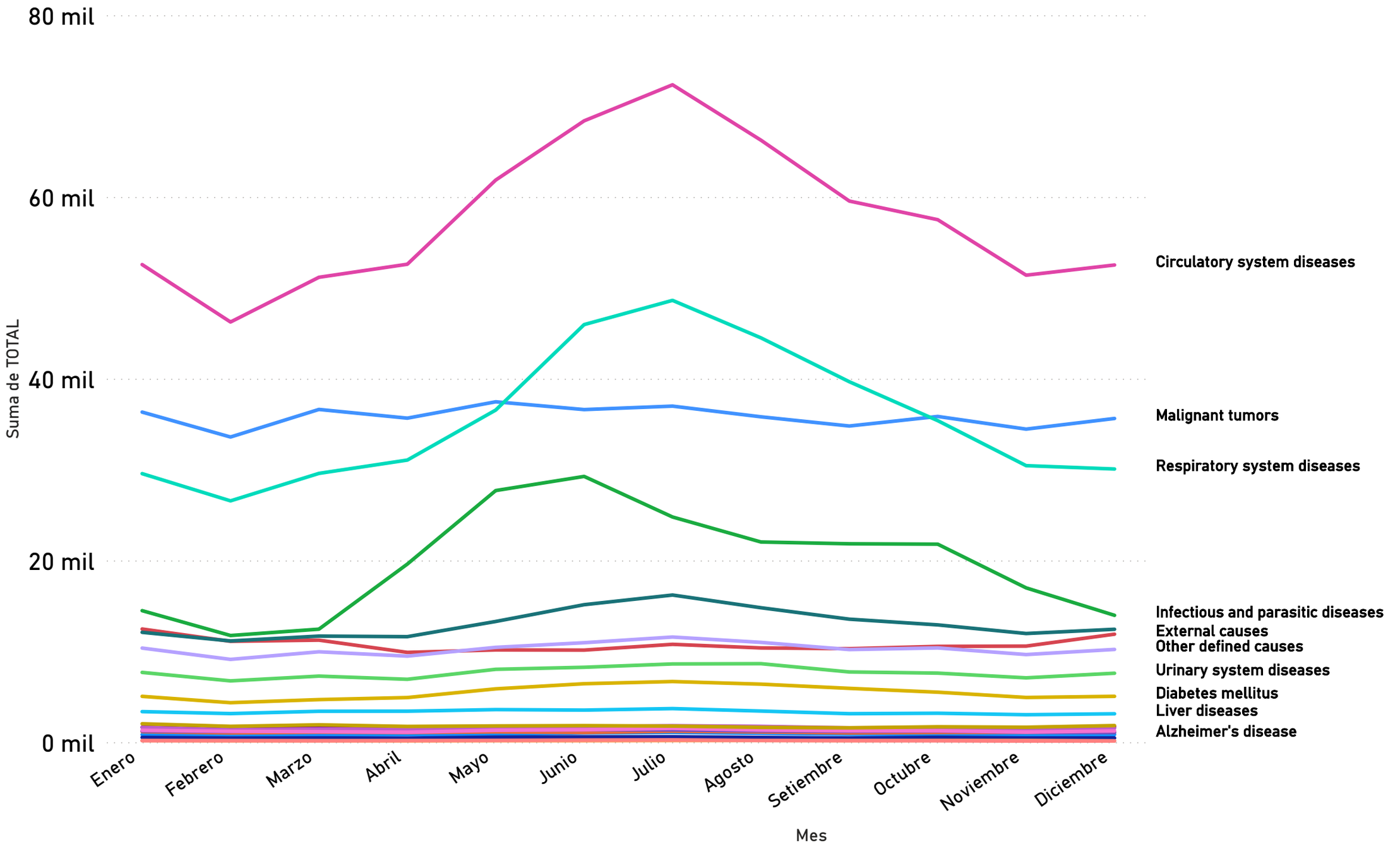
DEATH PATTERNS THROUGHOUT THE YEAR










80 mil
60 mil
40 mil
20 mil
0 mil
Suma de TOTAL
Enero
Febrero
Marzo
Abril
Mayo
Junio
Julio
Agosto
Setiembre
Octubre
Noviembre
Diciembre
Mes
Circulatory system diseases
Malignant tumors
Respiratory system diseases
Infectious and parasitic diseases
External causes
Other defined causes
Urinary system diseases
Diabetes mellitus
Liver diseases
Alzheimer's disease