

# Session 6.2: Dr. Maria Midea Kabamalan

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- ◆ University of the Philippines Population Institute
- ◆ The Philippines
- ◆ BIO
- ◆ Abstract
- ◆ Paper



# Male-Female Disparities in Potential Years of Life Lost Due to Premature Mortality in the Philippines

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# 1

## Introduction

The Philippine context

# Ranking of Causes of Death: Philippines 2010 to 2020

Causes of Death	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Cardiovascular disease	1	1	1	1	1	1	1	1	1	1	1
Cancer	2	2	2	2	2	2	2	2	2	2	2
Diabetes	4	4	4	3	3	3	3	3	3	3	3
Chronic respiratory disease	6	6	5	5	5	5	6	6	6	6	6
Land transport accidents	7	7	7	7	7	7	7	7	5	5	7
Intentional self-harm	9	9	9	9	9	9	9	9	9	9	>10
Mental and Behavioral disorders	10	10	10	10	10	10	10	10	10	>10	>10
Respiratory tuberculosis	3	3	3	4	4	4	4	4	4	4	5
Human immunodeficiency virus (HIV)	>10	>10	>10	>10	>10	>10	>10	>10	>10	10	>10
Diseases of the liver	8	8	8	8	8	8	8	8	8	8	8
Assault	5	5	6	6	6	6	5	5	7	7	9
COVID-19, virus identified											10
COVID-19, virus not identified											4



# POTENTIAL YEARS OF LIFE LOST

is a measure of the **years of life not lived** due to premature mortality or the number of years that the person would have lived had they reached a specified age

provides insight on **what causes of death can be prevented** in order to maximize a person's or a population's contribution to society

# 2

## Study objectives

## Objectives of the study

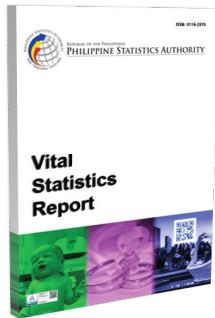
- produce estimates on sex-specific Potential Years of Life Lost (PYLL) due to premature deaths from NCDs, external causes, and other leading causes of deaths
- aims to estimate, by male and female, and compare the PYLL due to each of the said causes at the national level for the period 2010–2020, and at the regional level for 2020

# 3

## Data and methods

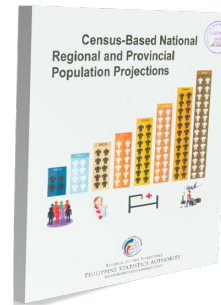


## Data used



### Deaths by age, sex, and causes

from Vital Statistics Division of the Civil Registration Service of the Philippine Statistics Authority (PSA)



### Mid-year population

from PSA's census counts and official population projections

Image Sources: [https://psa.gov.ph/sites/default/files/vital\\_stat\\_2019\\_02232023\\_rev\\_0.PNG](https://psa.gov.ph/sites/default/files/vital_stat_2019_02232023_rev_0.PNG); <https://psa.gov.ph/sites/default/files/2010%20Census%20of%20Pop%20Proj.png>

# Methodology

PYLL is computed using the formula:

$$PYLL_{COD_{tg}} = \sum_{a=0}^{l-1} (l - a) \left( \frac{d_{at}}{p_{at}} \right) \left( \frac{P_a}{P_n} \right) * 100,000$$

where COD = cause of death  
t = time  
g = gender/sex  
a = age  
l = upper age limit based on life expectancy  
 $d_{at}$  = number of deaths at age  $a$   
 $p_{at}$  = number of persons aged  $a$  at time  $t$   
 $p_a$  = number of persons aged  $a$  in reference population  
 $p_a$  = number of persons aged  $a$  in reference population

Notes.

- Used age 70 as the cut-off
- For the regional estimates, the PYLLs were standardized for each sex using the Philippines age structure

# Classification of selected CODs



## Non-communicable Diseases

Cardiovascular diseases, cancer, diabetes, chronic respiratory diseases, and mental and behavioral disorders



## External causes

Land transport accidents, intentional self-harm, and assault (homicide, injuries inflicted by another person with intent to injure or kill, by any means)



## Communicable or infectious diseases

Respiratory tuberculosis, HIV, COVID-19



## Diseases of the liver

## Limitations and delimitations of the study

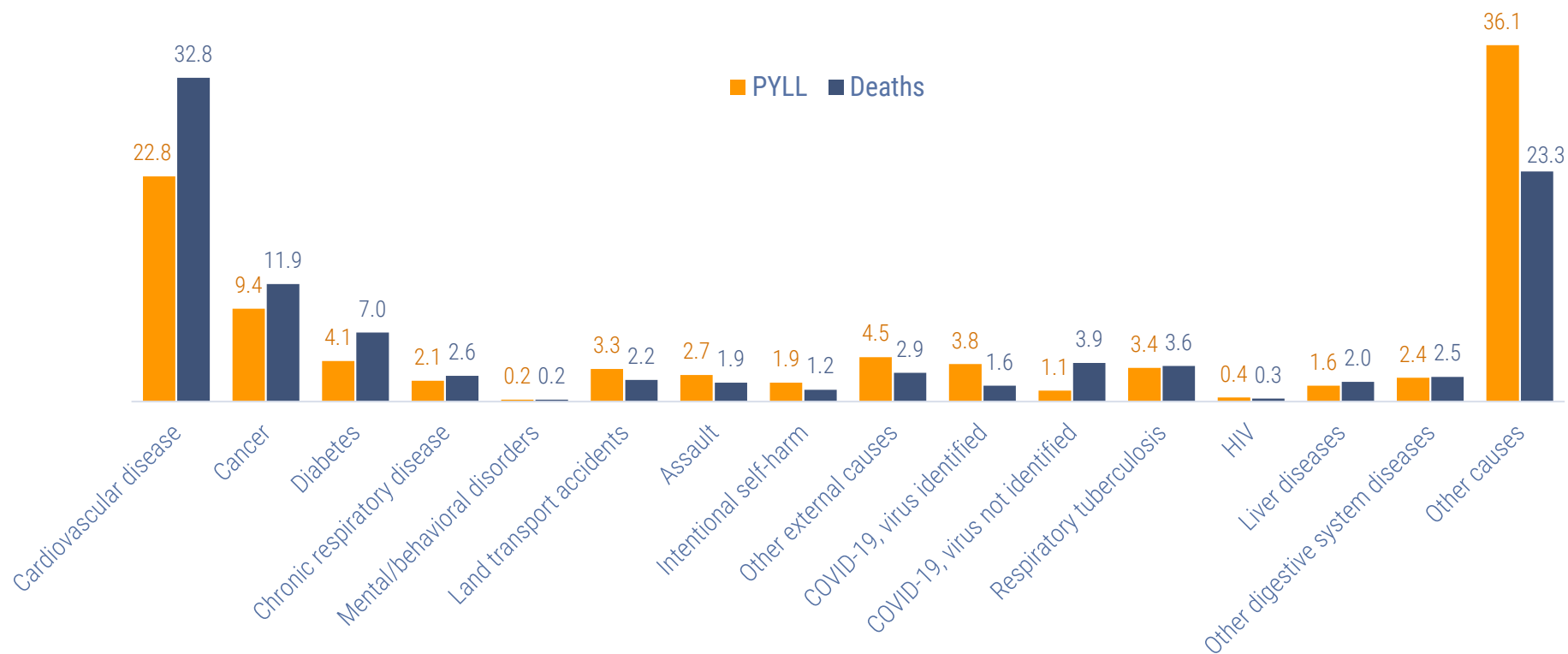
- Not adjusted for under registration
- Estimates for BARMM are included in the tables and charts but not included in the analysis by region
- Foreign nationals who died in the country and Filipinos who died outside the country are not included in the analysis. Persons who died with no information on age or sex are also excluded in the analysis



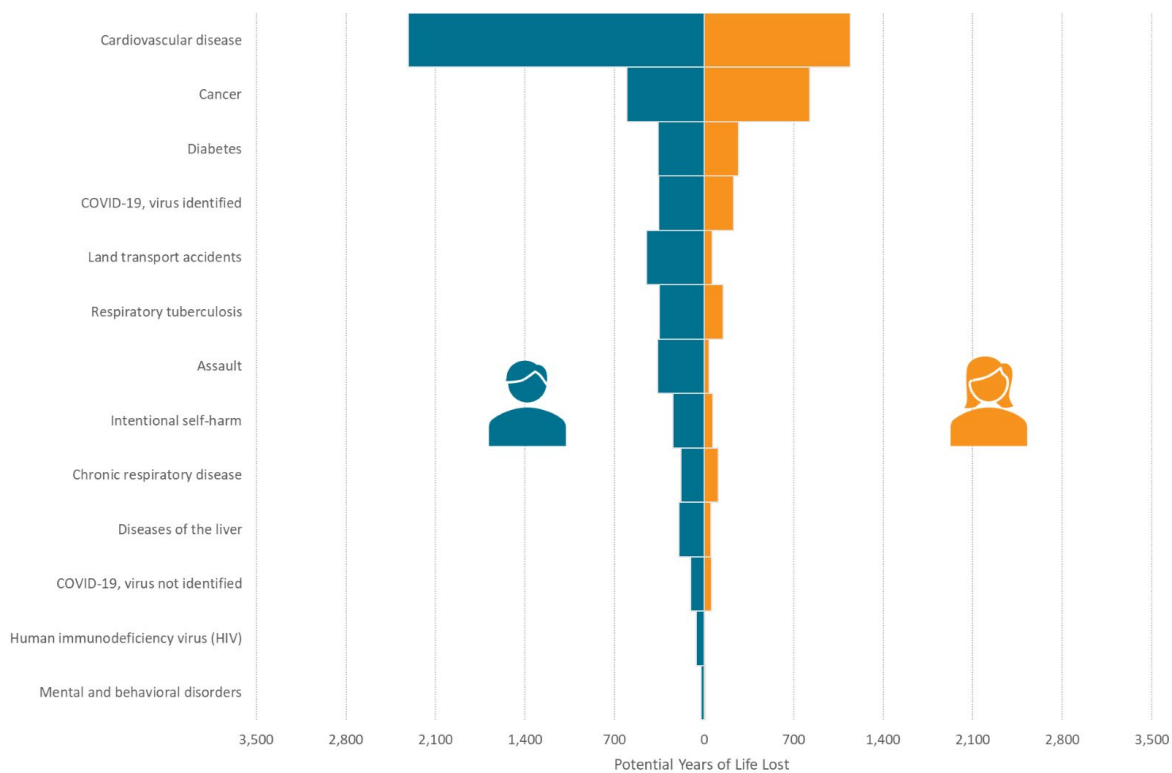
**4**

**Results**

## Potential years of life lost and deaths under 70 by selected causes by sex, as percentage of total: Philippines, 2020

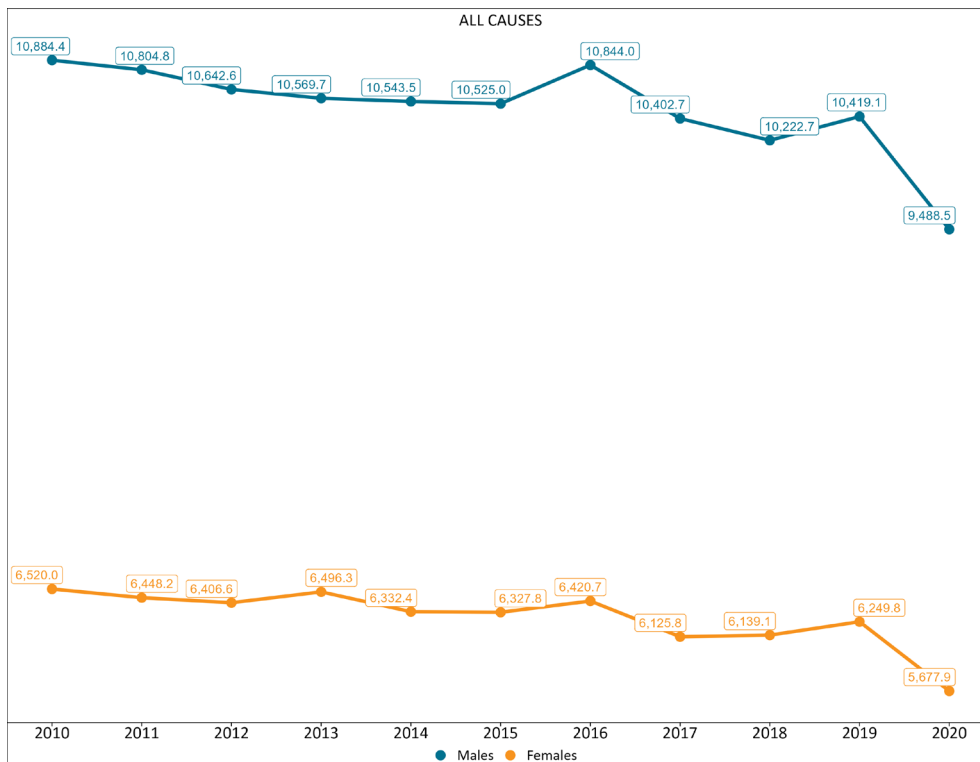


# Gender differences in national level PYLL, 2020



Distribution of PYLL due to mortality before age 70 by selected causes of death by sex: Philippines, 2020

# PYLL by cause of death from 2010 to 2020



PYLLs dropped from 2010 to 2020:

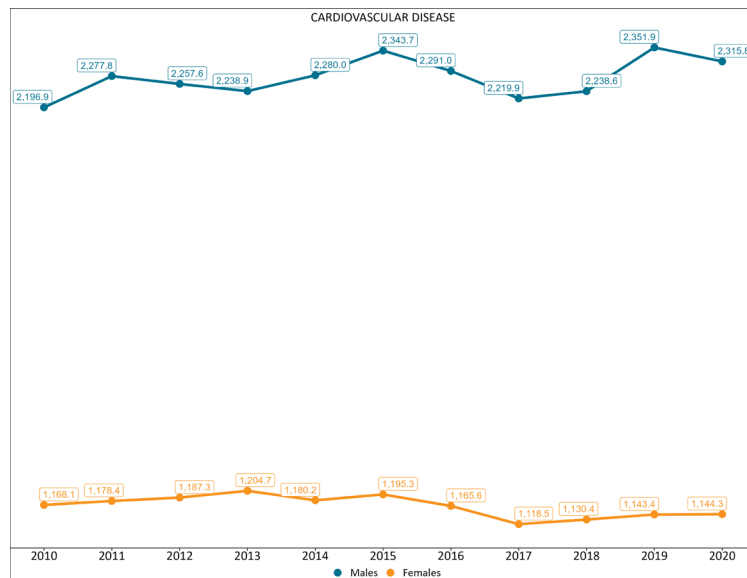
■ For **male** pop: from 10,884 to 9,488 per 100,000

■ For **female** pop: from 6,520 down to 5,678 per 100,000



# PYLL by cause of death from 2010 to 2020

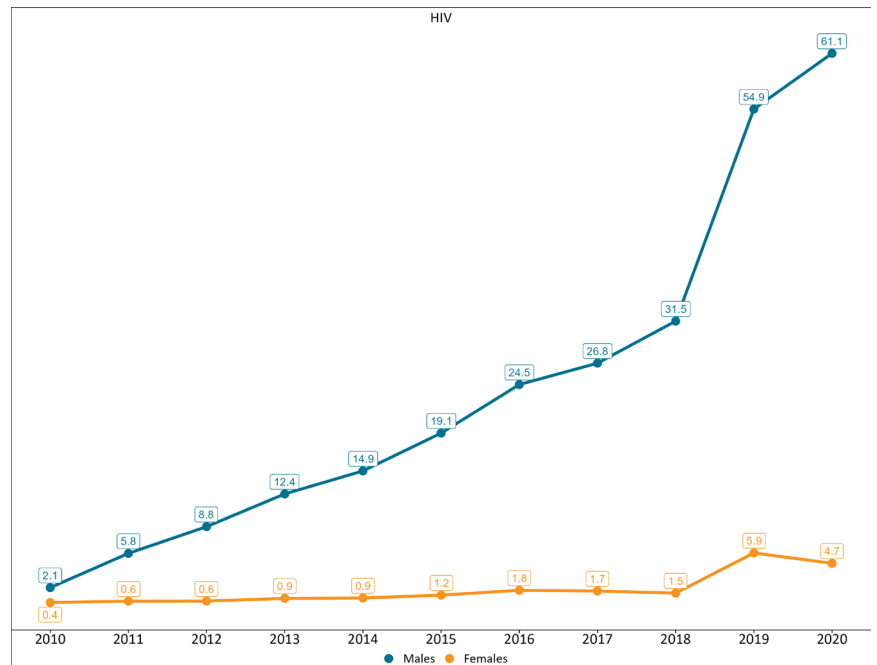
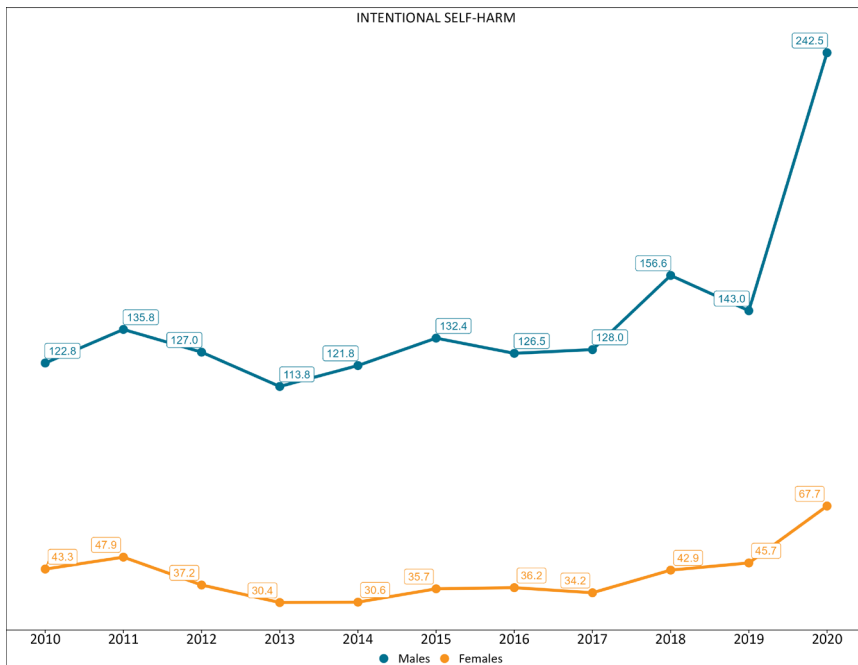
PYLL for some causes of death did not necessarily improve for both males and females



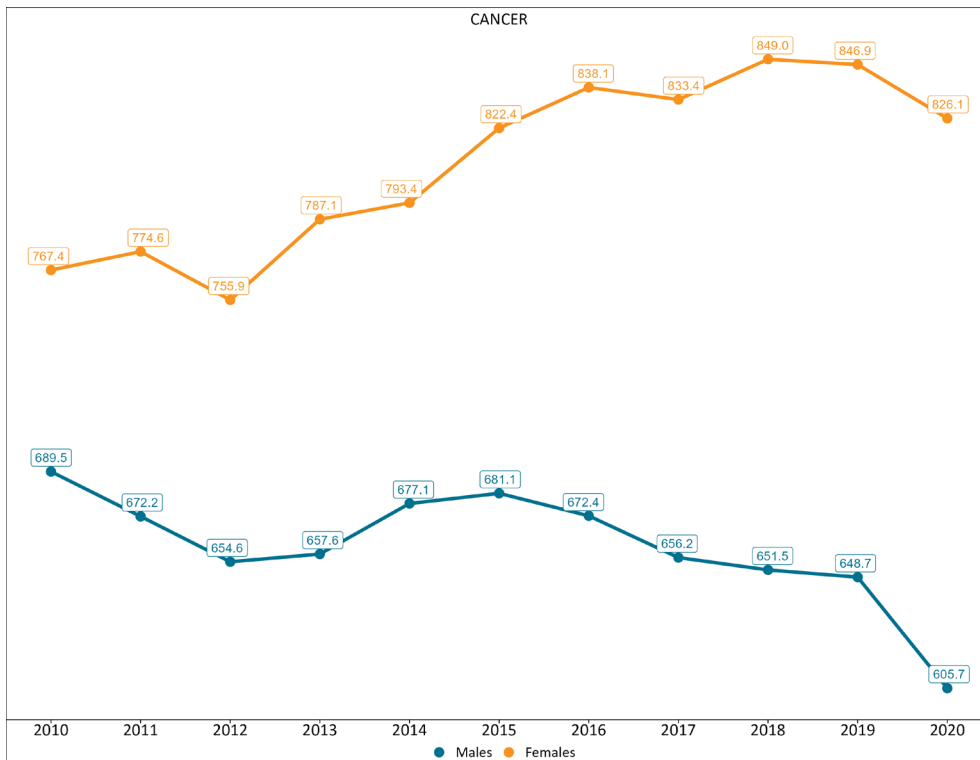
PYLL for **cardiovascular diseases** for both males and females **hardly declined** over the last decade

# PYLL by cause of death from 2010 to 2020

For some causes of death, PYLL remarkably increased for males



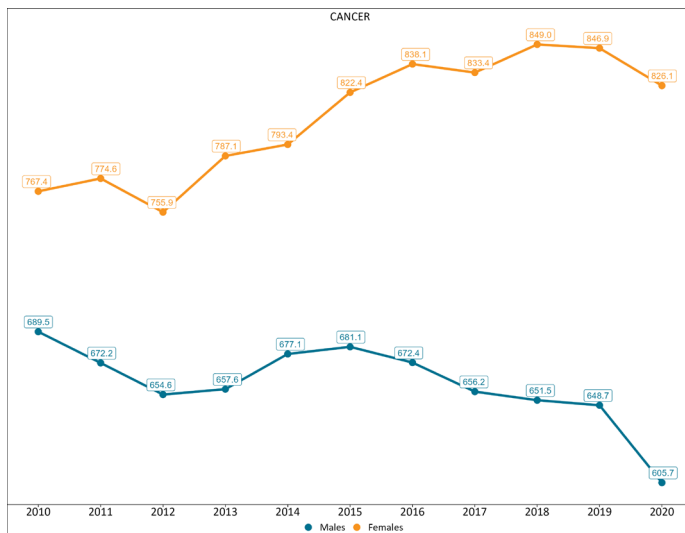
# PYLL by cause of death from 2010 to 2020



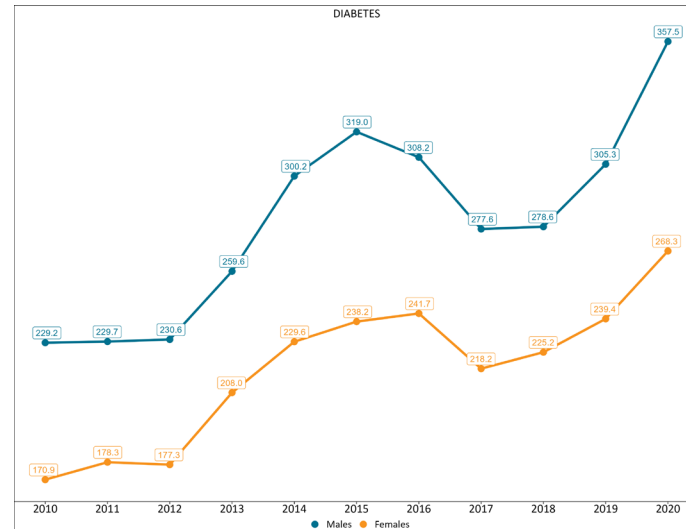
■ **higher losses** of potential years of life among the **females** than the males for **cancer**

# PYLL by cause of death from 2010 to 2020

Gaps either diverge or narrow for specific causes of death



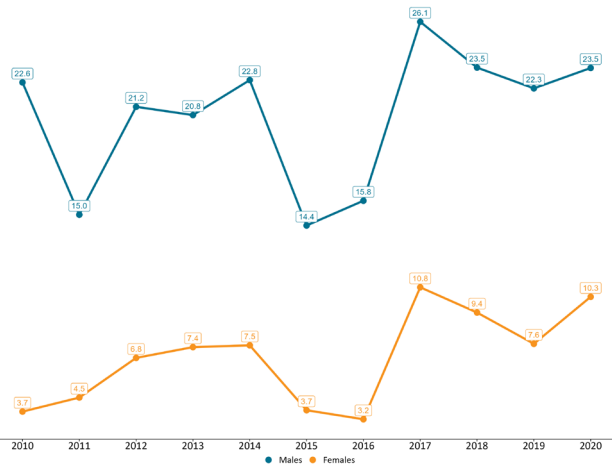
**diverging** from 2013;  
**female** PYLL increasing and male PYLL decreasing



both **follow the same ups and downs** (except 2019-2020) where the increase is **higher for males**

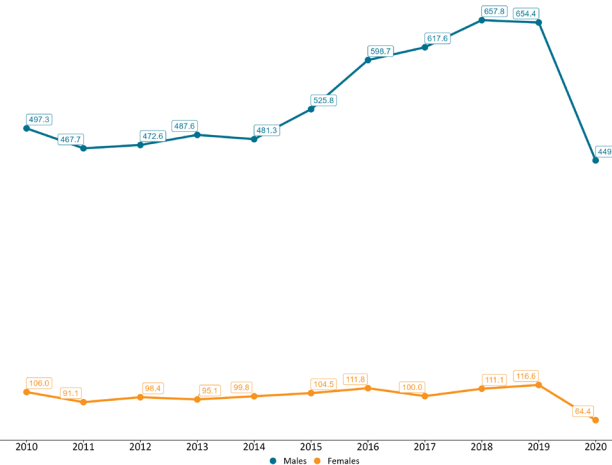
# PYLL by cause of death from 2010 to 2020

MENTAL AND BEHAVIORAL DISORDERS



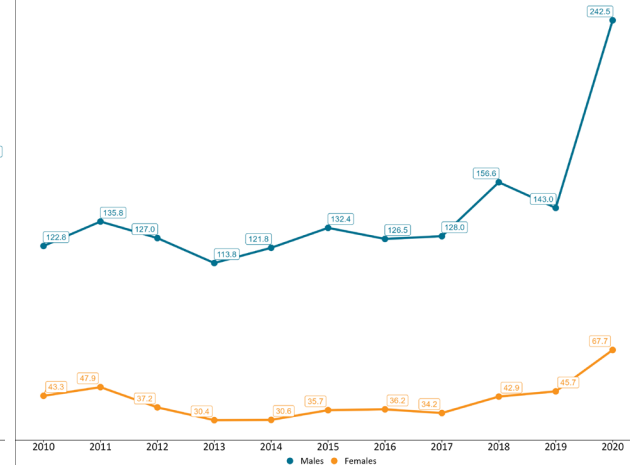
exhibits **see-saw patterns** for both sexes but has **generally been increasing** from 2010 and peaked in 2017 **before declining to 2019 and increased again** in 2020

LAND TRANSPORT ACCIDENTS



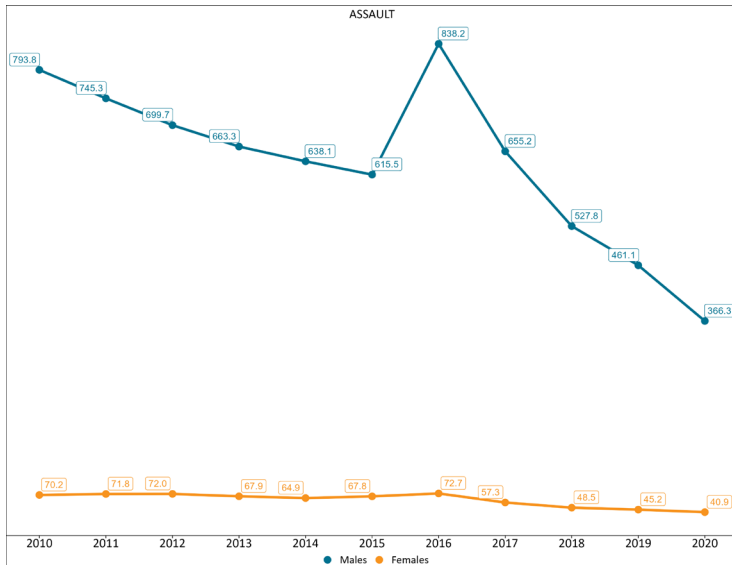
female PYLL **remained stable** from 2010-2019 **but dropping substantially** in 2020; male pop was about the same for 2010-2015 **increasing thereafter before dropping**

INTENTIONAL SELF-HARM

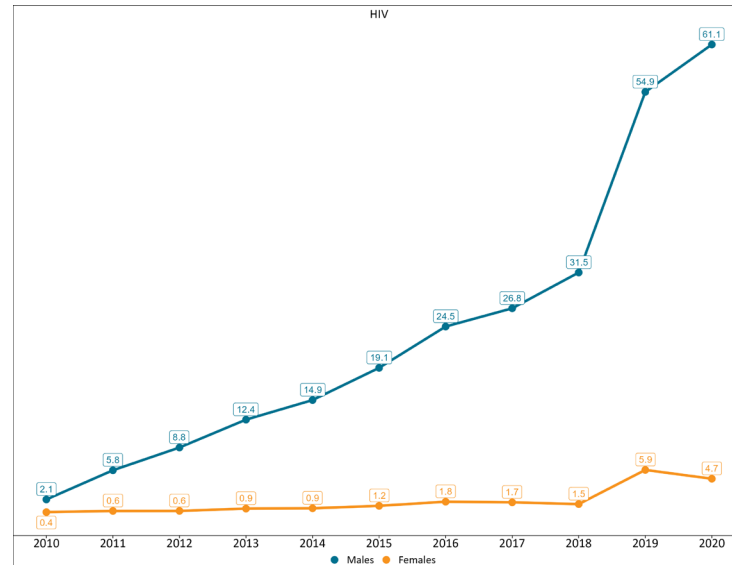


stable for the period 2010-2017, exhibited an increase in PYLLs for both sexes although the **increase is more dramatic for males**

# PYLL by cause of death from 2010 to 2020



the trend is also **declining**, albeit not as noticeable for the females than for the males; the **PYLL increased in 2016 before declining again in 2020**

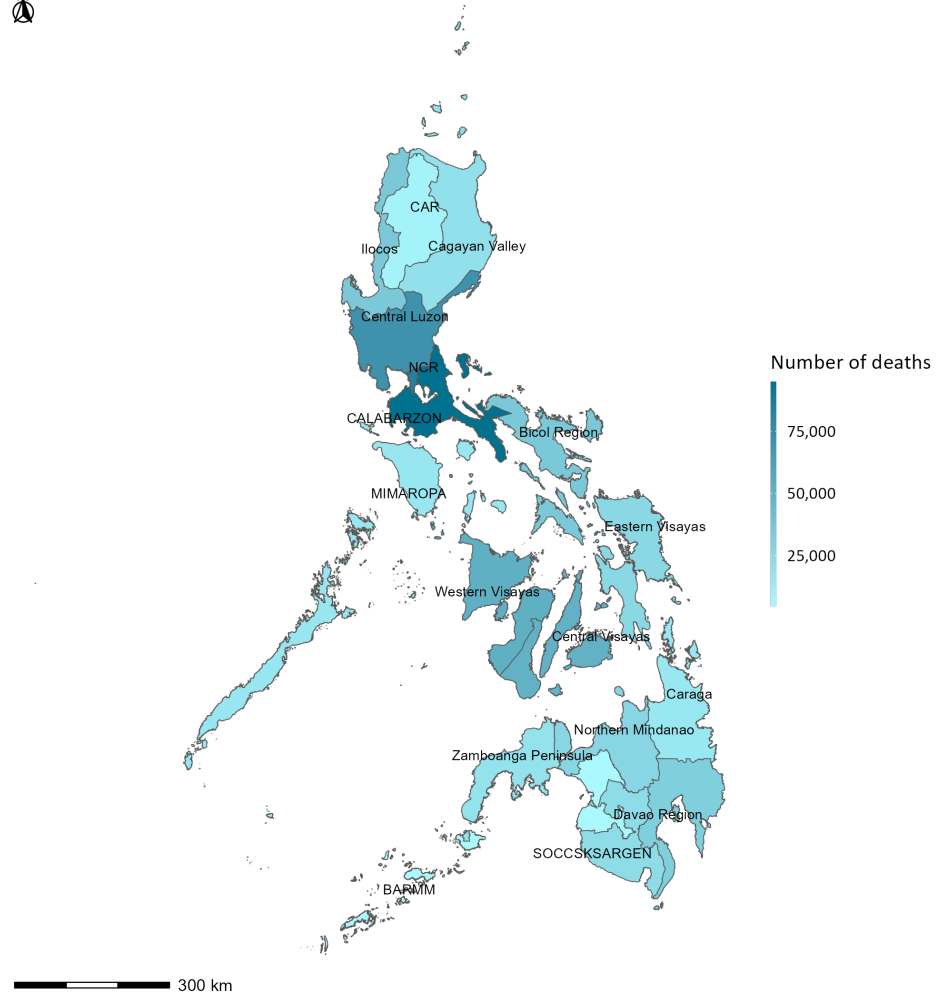


**dramatic increase** in PYLL for **the male population**; the PYLL for both sexes in 2010 was negligible. By 2020, the corresponding values increased

□ Note that data on HIV, assault, and intentional self-harm may have reporting bias

# Deaths and PYLL by region, 2020

Regardless of the cause and of sex, deaths are **highest in CALABARZON**, followed by the NCR and Central Luzon. Except for BARMM, deaths in the **Cordillera Administrative Region (CAR)** is the lowest





### PYLL for **males**

↑ Highest: NCR, CALABARZON, Davao, Western Visayas

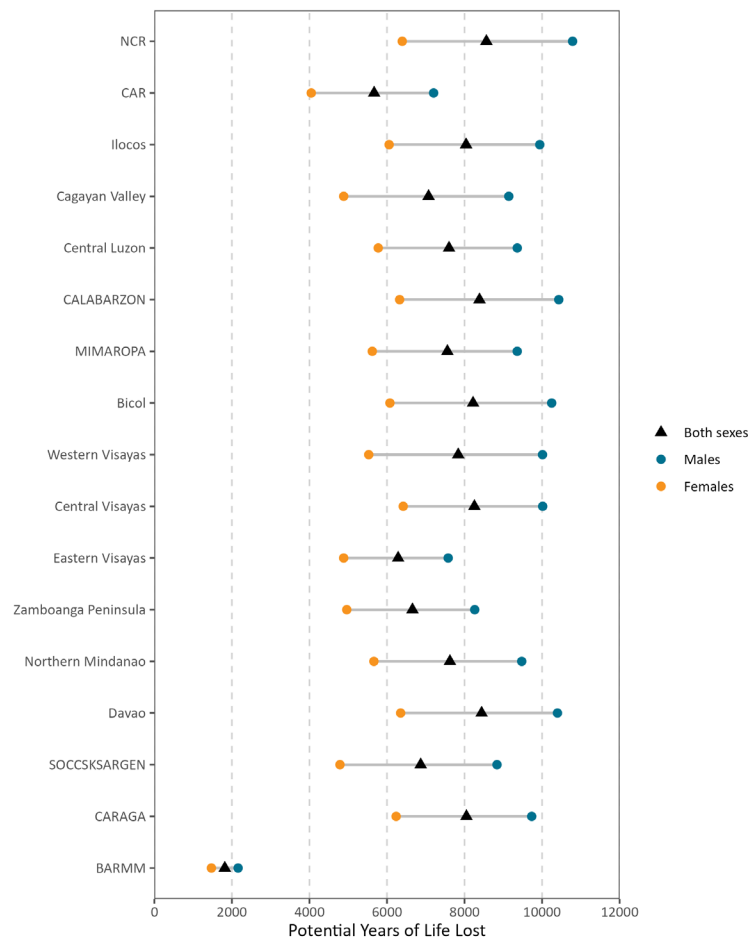
↓ Lowest: CAR, Eastern Visayas

### PYLL for **females**

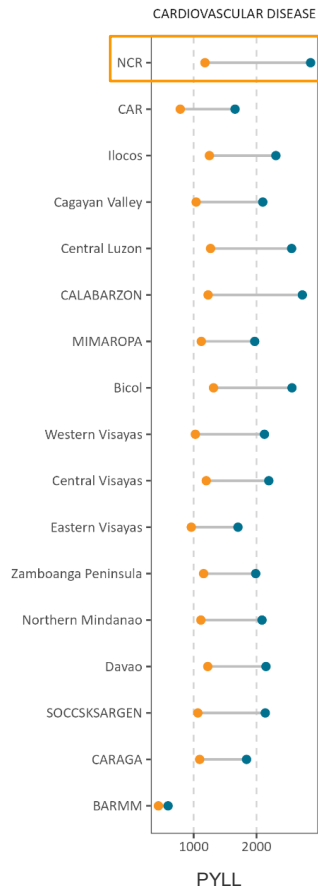
↑ Highest: NCR, Central Visayas, CALABARZON, Davao

↓ Lowest: CAR, SOCCSKSARGEN

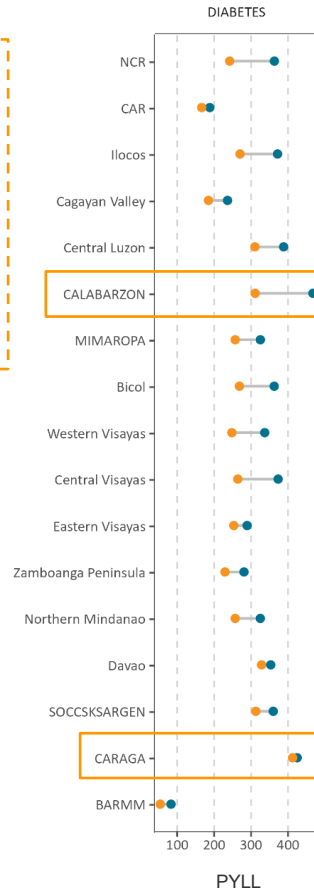
Age-adjusted PYLL for deaths before age 70 due to all causes, by sex and by region: Philippines, 2020



## Sex differences in regional PYLL by cause of death in 2020 in some selected diseases

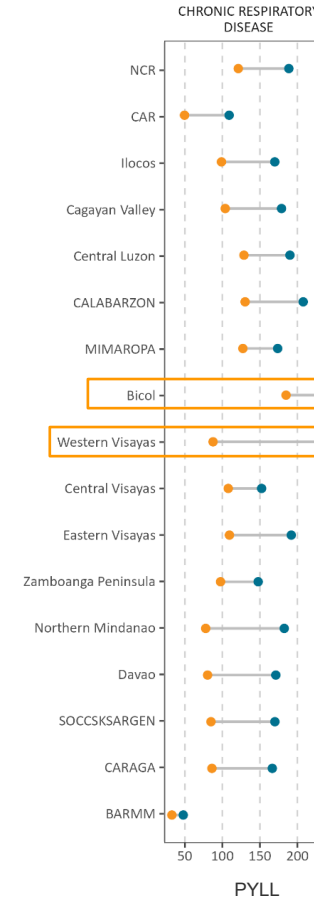


The disparity between both sexes for **cardiovascular diseases** is highest in NCR; **male PYLLs** is **2.4x** higher



The **widest** difference by **sex** is in CALABARZON

Caraga has the **highest** PYLL



Bicol has the **highest** PYLL

Western Visayas has the **widest** difference by **sex**

● Males ● Females

## High PYLL in some regions with metropolitan cities

- NCR, Davao, CALABARZON, and Central Visayas Region have the highest PYLL for all causes of death
- **Cardiovascular diseases** is highest in NCR and CALABARZON
- **Diabetes** is highest in CARAGA but the widest difference by sex is in CALABARZON

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## Conclusion and Recommendations

## Conclusion

- PYLL is generally higher for male than for female population, for all causes and for preventable causes of death except for cancer.
- Premature deaths cost an average of **9,489 years lost to men** compared to **5,678 years lost to women**

## Conclusion

- **Cardiovascular disease and diabetes** remains as the top cause of death in the country; tends to be lower for females than for males
- **Cancer** is the single cause of death that contributed to greater PYLL for women than for men
- The **range of sex gap in PYLL due to intentional self-harm is wide**, with more years lost to males than females

## Conclusion

- PYLL estimates show **higher losses** of potential years of life lost for the male than the female population
- While there is a general decline in PYLL for all causes, the PYLL for some causes of death **did not necessarily improve over the years** for both males and females
- The male-female disparities are largely attributed to **lifestyle choices** and behavioral patterns related to **gender norms**

## Recommendations

- Explore types of causes of death (e.g., types of cancer)
- Deaths in the community versus in the facilities
- Inclusion of 2021 data and beyond for impact of COVID-19 deaths