MAS122CDR and ASMR Calculation

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Crude Death Rate (CDR) & Age-Specific Mortality Rate (ASMR) 1. Data Preparation

# Create a tibble table with given data  
death\_data <- tibble(  
 Age\_Group = c("<5", "5-24", "25-44", "45-64", "65+"),  
 Population = c(10900, 33840, 18840, 9840, 2760),  
 Deaths = c(180, 75, 87, 158, 180)  
)  
print(death\_data)

## # A tibble: 5 × 3  
## Age\_Group Population Deaths  
## <chr> <dbl> <dbl>  
## 1 <5 10900 180  
## 2 5-24 33840 75  
## 3 25-44 18840 87  
## 4 45-64 9840 158  
## 5 65+ 2760 180

## Including Plots

# Compute Total Population & Total Deaths  
total\_population <- sum(death\_data$Population)  
print(total\_population)

## [1] 76180

## [1] 680

## **Age-Specific Mortality Rate (ASMR)**

The formula for the **Age-Specific Mortality Rate (ASMR)** is:

where: - = Mortality rate for age group - = Number of deaths in age group - = Population of age group

For example, for the **age group 65+**:

# Compute ASMR for each age group  
death\_data <- death\_data %>%  
 mutate(ASMR = (Deaths / Population) \* 1000)  
print(death\_data)

## # A tibble: 5 × 4  
## Age\_Group Population Deaths ASMR  
## <chr> <dbl> <dbl> <dbl>  
## 1 <5 10900 180 16.5   
## 2 5-24 33840 75 2.22  
## 3 25-44 18840 87 4.62  
## 4 45-64 9840 158 16.1   
## 5 65+ 2760 180 65.2

## **Crude Death Rate (CDR)**

The formula for the **Crude Death Rate (CDR)** is given by:

where: - = Total number of deaths - = Total population

# Compute CDR  
CDR <- (total\_deaths / total\_population) \* 1000  
print(CDR)

## [1] 8.926227

Display the Results

# Show Data Table with ASMR  
death\_data %>%  
 mutate(ASMR = round(ASMR, 4)) %>%  
 knitr::kable(caption = "Age-Specific Mortality Rate (ASMR) Table")

Age-Specific Mortality Rate (ASMR) Table

| Age\_Group | Population | Deaths | ASMR |
| --- | --- | --- | --- |
| <5 | 10900 | 180 | 16.5138 |
| 5-24 | 33840 | 75 | 2.2163 |
| 25-44 | 18840 | 87 | 4.6178 |
| 45-64 | 9840 | 158 | 16.0569 |
| 65+ | 2760 | 180 | 65.2174 |

print(death\_data)

## # A tibble: 5 × 4  
## Age\_Group Population Deaths ASMR  
## <chr> <dbl> <dbl> <dbl>  
## 1 <5 10900 180 16.5   
## 2 5-24 33840 75 2.22  
## 3 25-44 18840 87 4.62  
## 4 45-64 9840 158 16.1   
## 5 65+ 2760 180 65.2

# Display CDR  
cat("### \*\*Crude Death Rate (CDR)\*\*\n")

## ### \*\*Crude Death Rate (CDR)\*\*

cat("CDR =", round(CDR, 0), "deaths per 1000 population\n")

## CDR = 9 deaths per 1000 population