Practice #1 with sample formulas inserted

1. Do the EXCEL training I [posted in BB in month 1]
2. Develop one file (i.e., excel workbook) with FOUR sheets [see yellow highlights below]
   * Each sheet should include the information mentioned below according to the sheet number.

SHEET # 1: **Incidence and prevalence**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | A | **B** | **C** | | |
| 1 | number of existed cases | **Mid-year population** | **prevalence /100000** | | |
| 2 | 1000 | 1,000,000 | =A2/B2\*100000 | | |
| 3 | 2000 | 5,000,000 |  | | |
| 4 | 500 | 500,000 |  | | |
| 5 | 100 | 100,000 |  | | |
| 6 | incidence of a disease  **(cumulative incidence)** | | | | |
|  | **A** | **B** | **C** | **D** | **E** |
| 7 | number of new cases | **population at risk** | **number of years** | **incidence rate per year** | **incidence rate per 10000 per year** |
| 8 | 20 | 1000 | 2 | **=A8/(B8\*C8)** | **=D8\*10000** |
| 9 | 10 | 5000 | 5 |  |  |
| 10 |  |  |  |  |  |
| 11 | number of new cases | **person time** | **incidence rate per year** | **incidence rate per 10000 per year** | |
| 12 | 20 | 1550 | =A12/B12 | **=C12\*10000** | |
| 13 | 10 | 22500 |  |  | |

SHEET # 2: Direct age adjustment

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **A** | **B** | **C** | **D** | **E** | **F** | **G** |
| 1 | Age group | Population  A | ***Death*** | Rate/  100000 | *Standard Population* | Expected number of cases | Age adjusted rate/100000 |
| 2 | Total | ***900000*** | ***862*** |  | *1800000* | XXXXXX | XXXXX |
| 3 | Group 1 | 500000 | 60 | =C3/B3\*100000 | 800000 | =D3\*E3/100000 | XXXXX |
| 4 | Group 2 | 300000 | 396 |  | 700000 |  | XXXXX |
| 5 | Group 3 | 100000 | 406 |  | 300000 |  | XXXXX |
| 6 | TOTAL EXPECTED CASES | XXXXXX | XXXXX | XXXXXX |  | =F3+F4+F5 | ???? |
| 7 |  | **Population B** |  |  | standard population |  |  |
| 8 | Total | ***9900000*** | ***1,130*** |  | *1800000* | XXXXXX | XXXXXX |
| 9 | Group 1 | 3300000 | 30 |  | 800000 |  | XXXXXX |
| 10 | Group 2 | 4400000 | 400 |  | 700000 |  | XXXXXX |
| 11 | Group 3 | 2200000 | 700 |  | 300000 |  | XXXXXX |
| 12 | TOTAL EXPECTED CASES | XXXXXXX | XXXXX | XXXXXX |  |  |  |

X = NO CALCULATION

SHEET # 3: indirect age adjustment

* Standardized mortality **ratio** (SMR) for TB for Miners age 20-59 years

Age group (year) **Deaths Rate/100,000** Expected **Observed**

Pop. Miners **in the general pop** death **death**

20-24 74,598 12.26 10

25-29 85,077 16.12 20

30-34 80,845 21.54 22

35-44 148,870 33.96 98

45-54 102,649 56.82 174

55-59 42,494 75.23 112

Total 534,533

SHEET # 4: Validity

* Develop a 2 by 2 table the include the following information:
* Column represents the biopsy and rows represents physical examination
  + Physical exam: positive (1600 cases; 1000 normal)
  + 2400 biopsy proven cases
  + 6000 normal

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | BIOPSY |  |  |
|  |  | POSITIVE | NEGATIVE | TOTAL |
| POSITIVE |  | 1600 | 1000 |  |
| NEGATIVE | |  |  |  |
|  |  | 2400 | 6000 |  |

* We are conducting a study to determine the validity of the physical exam to diagnose breast cancer using the biopsy as gold standard. The results are as follows:
* Physical exam: positive (1600 breast cancer cases; 1000 normal control )
* 2400 biopsy proven breast cancer cases
* 6000 normal

After you complete all the sheets, save the file with your last name.

**Now you have a workbook with 4 sheets as follows**:

* Incidence prevalence
* Direct age adjustment
* Indirect age adjustment
* Validity

**Attach the workbook with 4 sheets as follows**:

-        Incidence and prevalence (2% total: 1% for formula and 1% for interpretation)

-        Direct age adjustment (3% total: 2% for formula and 1% for interpretation)

-        Indirect age adjustment (2% total: 1% for formula and 1% for interpretation)

-        Validity (3% total: 1% for formula and 2% for interpretation)

You need to write comments and interpretation based on the findings in each sheet.

 You need to make sure you have all the equations in the four sheet to get the full credit.

After completion of all the information in the four sheets, save the file and attach the complete workbook file to BB under “in class epidemiology practice” for review and credit.