**Appendix 1: Cost calculation**

The formula for calculating the overall costs is as follows:

𝑇𝑜𝑡𝑎𝑙 𝐶𝑜𝑠𝑡𝑋𝑛 = $\sum\_{z=10}^{}\sum\_{m=3}^{}AZXn \* IXnZ \* IsXnZm \* CTm$

N = Number of individuals in the group

Xn= Condition type (homogeneous (n = 1), real-life age distribution (n = 2))$\sum\_{z=10}^{}\sum\_{m=3}^{}AZXn \* IXnZ \* IsXnZm \* CTm$

P = Proportion

A = Age group

*Z* = Number of age classes

m = Number of severity levels (low = 1, medium = 2, high = 3) I = infectious disease rate

Is = Infection disease proportion per severity level

C = Cost

T = Treatment

Overall cost, cost per age group per condition, and mean cost per disease per condition for the 1-year assessment are reported and compared.

Data selected for the base-case model X1

|  |  |  |  |
| --- | --- | --- | --- |
| **Variable name** | **Code** | **Formula** | **Value** |
| Individuals (number) | N |  | 1000 |
| Number of age-classes | Z |  | 10 |
| Proportion of individuals per age-class | PZ | N/Z | 10.00% |
| Number per age-class | AZ | N\*PZ | 100 |
| Disease rate over 1 year (I) | I |  | 15.00% |
| Number of disease by age-class |  | 𝐴𝑍𝑍 ∗ 𝐼 | 15 |
| Severity disease proportion (low, medium, high) | Ism |  | 33.33% |
| Number of diseases per disease level proportion |  | 𝐴𝑍 ∗ 𝐼 ∗ 𝐼𝑠𝑚 | 5 |
| Unit cost for treatment of any disease severity level | CTm |  | €20 |