Let:

|  |  |
| --- | --- |
| S(t) = S = Susceptible | b=birth rate =0.028 |
| L(t) = L = Latent TB | µ=general mortality = 0.008 |
| A(t) = A = active TB | β=Transmission probability = 0.368 |
| T(t)=T=Detected and treated TB | p=progression rate = 0.156 |
| N(t)=N= Total Population | d=progression time = 3.966 |
|  | γ=case detection rate (0.57) after 2021 |
|  | r=relapse rate = 0.004 |
|  | m=TB mortality = 0.225 (after 2021) |



delay

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For equilibrium, derivatives = 0.

**Susceptible:**



**Latent:**

**Active**

**Detected and treated:**