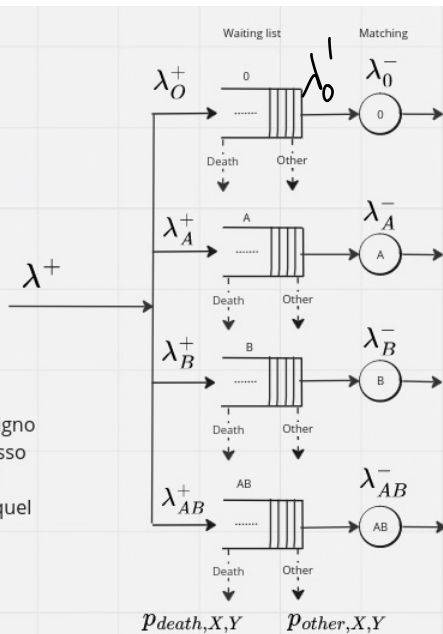


ABO IDENTICAL

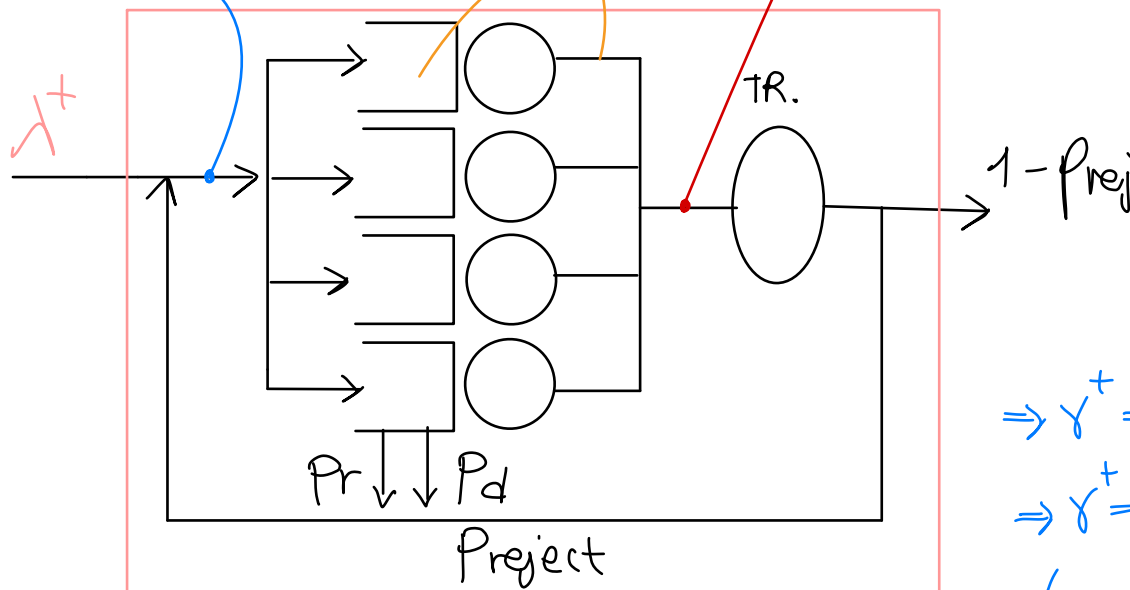
ABO identical - analitico

Ogni coda per gruppo sanguigno è un sistema M|M|1 con tasso di servizio pari al tasso di interarrivo degli organi con quel gruppo sanguigno.



X : blood type
 Y : priority

γ^+



$$\gamma'_x = \gamma^+ \cdot p_x \cdot (1 - p_r - p_d)$$

• CODA X

$$\lambda'_x = \lambda_x^+ (1 - p_{d,x} - p_{r,x}) \quad p_x = \frac{\lambda'_x}{\lambda_x^-} \quad E(S_0) = \frac{1}{\lambda_x^-}$$

$$E(T_{q_x}) = \frac{p_x E(S_x)}{1 - p_x} \quad E(T_s) = \frac{E(S_x)}{1 - p} = \frac{p_x E(S_x)}{1 - p_x}$$

$$E(N_{q_x}) = \lambda'_x E(T_{q_x}) \quad E(N_{s_x}) = \lambda'_x E(T_{s_x})$$

$X = O, A, B, AB$

$$\gamma^+ = \lambda^+ + (\gamma'_A + \gamma'_B + \gamma'_{AB} + \gamma'_0) \text{Prej}$$

$$\gamma'_A = \gamma^+ \cdot p_A (1 - p_d - p_r)$$

$$\gamma'_B = \gamma^+ \cdot p_B (1 - p_d - p_r)$$

$$\gamma'_0 = \gamma^+ \cdot p_0 (1 - p_d - p_r)$$

$$\gamma'_{AB} = \gamma^+ \cdot p_{AB} (1 - p_d - p_r)$$

$$\Rightarrow \gamma^+ = \lambda^+ + \gamma^+ \text{Prej} (1 - p_d - p_r) (p_A + p_B + p_0 + p_{AB})$$

$$\Rightarrow \gamma^+ = \lambda^+ + \gamma^+ \text{Prej} (1 - p_d - p_r)$$

$$(1 - \text{Prej} (1 - p_d - p_r)) \gamma^+ = \lambda^+$$

$$\gamma^+ = \frac{\lambda^+}{1 - p_{rej}(1 - p_d - p_r)}$$

