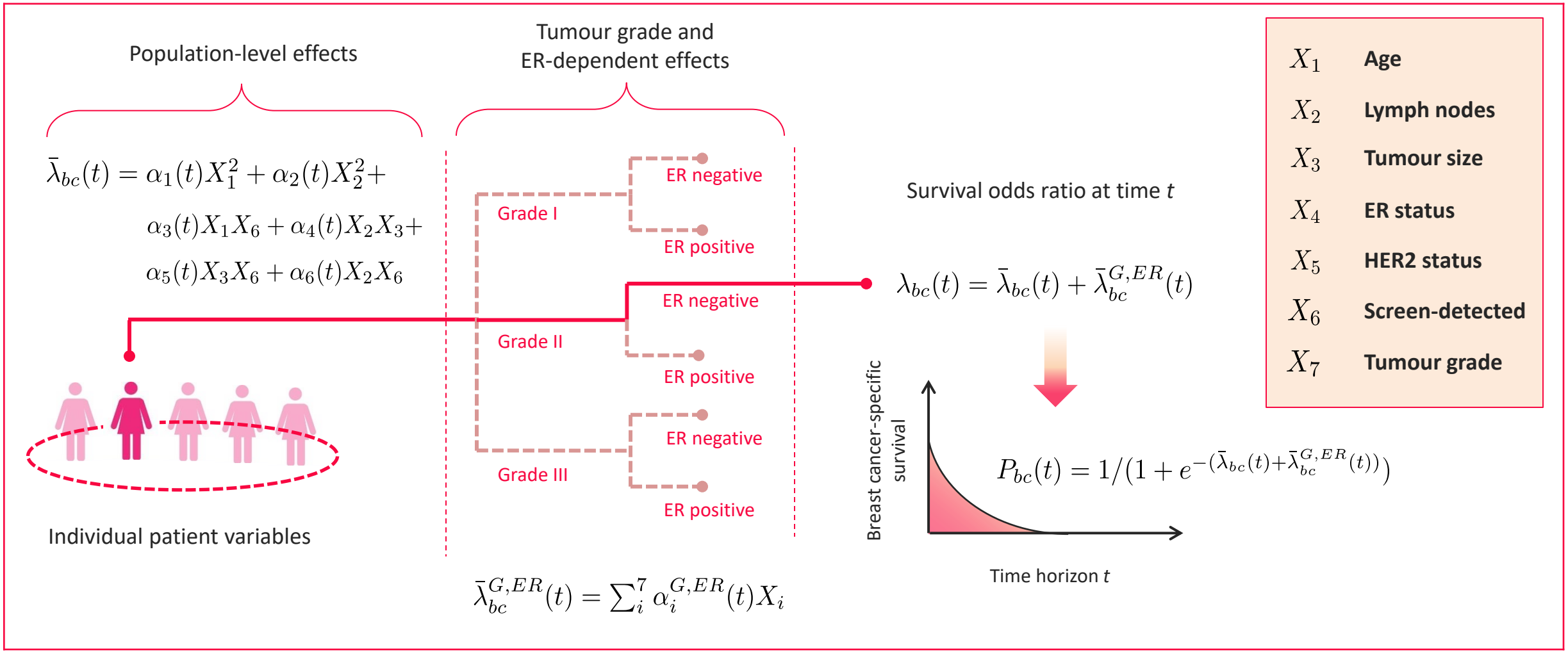
Population-level effects
Tumour grade and ER-dependent effects
$\bar{\lambda}_{bc}(t) = \alpha_1(t)X_1^2 + \alpha_2(t)X_2^2 +$
$\alpha_3(t)X_1X_6 + \alpha_4(t)X_2X_3 +$
$\alpha_5(t)X_3X_6 + \alpha_6(t)X_2X_6$
Grade I
Grade II
Grade III
ER negative
ER positive
ER negative
ER positive
ER negative
ER positive
Individual patient variables
$\bar{\lambda}_{bc}^{G,ER}(t) = \sum_i^7 \alpha_i^{G,ER}(t)X_i$
Survival odds ratio at time *t*
$\lambda_{bc}(t) = \bar{\lambda}_{bc}(t) + \bar{\lambda}_{bc}^{G,ER}(t)$
Breast cancer-specific survival
$P_{bc}(t) = 1/(1 + e^{-(\bar{\lambda}_{bc}(t) + \bar{\lambda}_{bc}^{G,ER}(t))})$
Time horizon *t*
X_1 Age
X_2 Lymph nodes
X_3 Tumour size
X_4 ER status
X_5 HER2 status
X_6 Screen-detected
X_7 Tumour grade