TABLE 1 Summary of the four simulation mathematical models generated with increasing heterogeneous treatment effect complexity

Model	Description of relationships between heterogeneity covariates	Outcome model
I	No heterogeneous treatment effect	$Y_i = \beta_0 + \sum_{j=1}^{p} \beta_k x_{ik} + \delta T + \varepsilon$
II	Linear	$Y_i = \beta_0 + \sum_{k=1}^{p} \beta_i x_{ik} + \left(\gamma_0 + \sum_{k=1}^{p} \gamma_k x_{ik}\right) T + \varepsilon$
III	Nonlinear + interactive	$Y_i = \beta_0 + \sum_{k=1}^{p} \beta_k X_i + \left(\gamma_0 + \gamma_1 x_{i1}^3 + \gamma_{23} \cos(x_{i2}) x_{i3}\right) T + \varepsilon$
IV	High-dimensional covariates	Model II