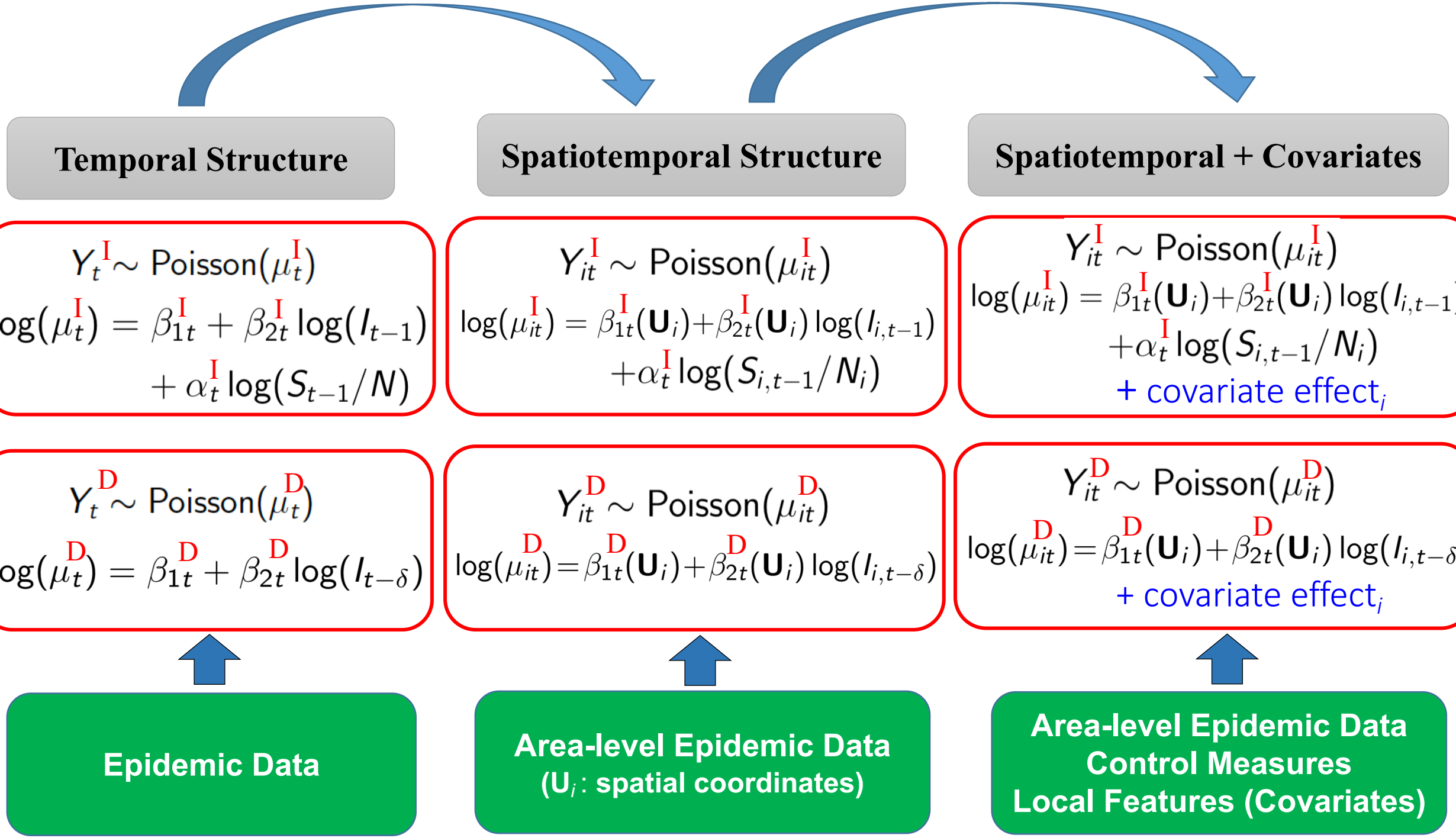
Temporal Structure
Spatiotemporal Structure
Spatiotemporal + Covariates
$Y_t^{\mathrm{I}} \sim \mathrm{Poisson}(\mu_t^{\mathrm{I}})$
$\log(\mu_t^{\mathrm{I}}) = \beta_{1t}^{\mathrm{I}} + \beta_{2t}^{\mathrm{I}} \log(I_{t-1}) + \alpha_t^{\mathrm{I}} \log(S_{t-1}/N)$
$Y_{it}^{\mathrm{I}} \sim \mathrm{Poisson}(\mu_{it}^{\mathrm{I}})$
$\log(\mu_{it}^{\mathrm{I}}) = \beta_{1t}^{\mathrm{I}}(\mathbf{U}_i) + \beta_{2t}^{\mathrm{I}}(\mathbf{U}_i) \log(I_{i,t-1}) + \alpha_t^{\mathrm{I}} \log(S_{i,t-1}/N_i)$
$Y_{it}^{\mathrm{I}} \sim \mathrm{Poisson}(\mu_{it}^{\mathrm{I}})$
$\log(\mu_{it}^{\mathrm{I}}) = \beta_{1t}^{\mathrm{I}}(\mathbf{U}_i) + \beta_{2t}^{\mathrm{I}}(\mathbf{U}_i) \log(I_{i,t-1}) + \alpha_t^{\mathrm{I}} \log(S_{i,t-1}/N_i)$
+ covariate effect$_i$
$Y_t^{\mathrm{D}} \sim \mathrm{Poisson}(\mu_t^{\mathrm{D}})$
$\log(\mu_t^{\mathrm{D}}) = \beta_{1t}^{\mathrm{D}} + \beta_{2t}^{\mathrm{D}} \log(I_{t-\delta})$
$Y_{it}^{\mathrm{D}} \sim \mathrm{Poisson}(\mu_{it}^{\mathrm{D}})$
$\log(\mu_{it}^{\mathrm{D}}) = \beta_{1t}^{\mathrm{D}}(\mathbf{U}_i) + \beta_{2t}^{\mathrm{D}}(\mathbf{U}_i) \log(I_{i,t-\delta})$
$Y_{it}^{\mathrm{D}} \sim \mathrm{Poisson}(\mu_{it}^{\mathrm{D}})$
$\log(\mu_{it}^{\mathrm{D}}) = \beta_{1t}^{\mathrm{D}}(\mathbf{U}_i) + \beta_{2t}^{\mathrm{D}}(\mathbf{U}_i) \log(I_{i,t-\delta})$
+ covariate effect$_i$
Epidemic Data
Area-level Epidemic Data
($\mathbf{U}_i$: spatial coordinates)
Area-level Epidemic Data
Control Measures
Local Features (Covariates)