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Erratum

Erratum

Erratum to: Marginal measures and causal effects using the relative survival framework

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The originally published version of this article contained some errors in the setting of some equations (see below). These have now been corrected. OUP apologises for this error.

Published version (wrong version)	How it should be (RIGHT version)
Corrections in section: Marginal relative survival	
Page 3	
$R(tZ_2)$	$R(t\|Z_2)$
Equation 2	
$\theta(t) = E[R(tZ_2)]$	$\theta(t) = E[R(t\|Z_2)]$
Page 4	
$\hat{\theta}(t) = \frac{1}{N}\sum_{i=1}^{N} \hat{R}(t\|\|Z_2 = z_{2i})$	$\hat{\theta}(t) = \frac{1}{N}\sum_{i=1}^{N} \hat{R}(t\|Z_2 = z_{2i})$
Page 4	
$\hat{\theta}(t) = \frac{1}{N}\sum_{i=1}^{N} w_i\hat{R}(t\|, Z_2 = z_{2i})$	$\hat{\theta}(t) = \frac{1}{N}\sum_{i=1}^{N} w_i\hat{R}(t\|Z_2 = z_{2i})$
Corrections in section: Marginal all-cause survival	
Equation 3	
$\theta(t) = E[S(tZ)] = E\left[S^*(tZ_1)R(t\|Z_2)\right]$	$\theta(t) = E[S(t\|Z)] = E[S^*(t\|Z_1)R(t\|Z_2)]$
Page 4	
$\hat{\theta}(t) = \frac{1}{N}\sum_{i=1}^{N} S^*(t\|Z_1 = z_{1i})\hat{R}(t\|\|Z_2 = z_{2i})$	$\hat{\theta}(t) = \frac{1}{N}\sum_{i=1}^{N} S^*(t\|Z_1 = z_{1i})\hat{R}(t\|Z_2 = z_{2i})$
Corrections in section: Marginal crude probabilities of death	
Page 4	
$F_c(tZ)$	$F_c(t\|Z)$
Page 4	
$F_o(tZ)$	$F_o(t\|Z)$
Page 4	
$\theta_c(t) = E\left[F_c(tZ)\right] = E\left[\int_0^t S^*(u\|\|Z_1)R(u\|\|Z_2)\lambda(u\|\|Z_2)du\right]$	$\theta_c(t) = E[F_c(t\|Z)] = E\left[\int_0^t S^*(u\|Z_1)R(u\|Z_2)\lambda(u\|Z_2)du\right]$

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Published version (wrong version)	How it should be (RIGHT version)
Page 4	
$\hat{\theta}_c(t) = \frac{1}{N}\sum_{i=1}^{N} \hat{F}_c(tZ = z_i)$	$\hat{\theta}_c(t) = \frac{1}{N}\sum_{i=1}^{N} \hat{F}_c(t\|Z = z_i)$
$= \frac{1}{N}\sum_{i=1}^{N} \int_0^t S^*(u\|\|Z_1 = z_{1i})\ \hat{R}(u\|\|Z_2 = z_{2i})\hat{\lambda}(u\|Z_2 = z_{2i})du$	$= \frac{1}{N}\sum_{i=1}^{N} \int_0^t S^*(u\|Z_1 = z_{1i})\hat{R}(u\|Z_2 = z_{2i})\hat{\lambda}(u\|Z_2 = z_{2i})du$
Page 4	
$\theta_o(t) = \frac{1}{N}\sum_{i=1}^{N} \hat{F}_o(tz_i)$	$\hat{\theta}_o(t) = \frac{1}{N}\sum_{i=1}^{N} \hat{F}_o(t\|Z = z_i)$
$= \frac{1}{N}\sum_{i=1}^{N} \int_0^t S^*(u\|\|Z_1 = z_{1i})\hat{R}(u\|Z_2 = z_{2i})h^*(u\|Z_1 = z_{1i})du$	$= \frac{1}{N}\sum_{i=1}^{N} \int_0^t S^*(u\|Z_1 = z_{1i})\hat{R}(u\|Z_2 = z_{2i})h^*(u\|Z_1 = z_{1i})du$
Corrections in section: Relative survival differences	
Page 5	
$\frac{1}{N}\sum_{i=1}^{N} \hat{R}(t\|\|X = 1,\ Z_2 = z_{2i}) - \frac{1}{N}\sum_{i=1}^{N} \hat{R}(t\|\|X = 0,\ Z_2 = z_{2i})$	$\frac{1}{N}\sum_{i=1}^{N} \hat{R}(t\|X = 1,\ Z_2 = z_{2i}) - \frac{1}{N}\sum_{i=1}^{N} \hat{R}(t\|X = 0,\ Z_2 = z_{2i})$
Corrections in section: All-cause survival differences	
Equation 5	
$E[S^*(t\|\|X = 1,\ Z_1)R(t\|X = 1, Z_2)]$	$E[S^*(t\|X = 1,\ Z_1)R(t\|X = 1, Z_2)]$
$- E[S^*(t\|\|X = 0,\ Z_1)R(t\|X = 0, Z_2)]$	$- E[S^*(t\|X = 0,\ Z_1)R(t\|X = 0, Z_2)]$
Page 5	
$\frac{1}{N}\sum_{i=1}^{N} S^*(t\|\|X = 1,\ Z_1 = z_{1i})\hat{R}(t\|\|X = 1,\ Z_2 = z_{2i})$	$\frac{1}{N}\sum_{i=1}^{N} S^*(t\|X = 1,\ Z_1 = z_{1i})\hat{R}(t\|X = 1,\ Z_2 = z_{2i})$
$-\frac{1}{N}\sum_{i=1}^{N} S^*(t\|\|X = 0,\ Z_1 = z_{1i})\hat{R}(t\|\|X = 0,\ Z_2 = z_{2i})$	$-\frac{1}{N}\sum_{i=1}^{N} S^*(t\|X = 0,\ Z_1 = z_{1i})\hat{R}(t\|X = 0,\ Z_2 = z_{2i})$
Corrections in section: Forming contrasts within subsets of the population	
Equation 6	
$E\left[S^*\left(t\|\|X = 1, Z_1^{X=1}\right)R\left(t\|X = 1, Z_2^{X=1}\right)\right]$	$E\left[S^*\left(t\|X = 1, Z_1^{X=1}\right)R\left(t\|X = 1, Z_2^{X=1}\right)\right]$
$- E\left[S^*\left(t\|\|X = 0, Z_1^{X=1}\right)R\left(t\|X = 0, Z_2^{X=1}\right)\right]$	$- E\left[S^*\left(t\|X = 0, Z_1^{X=1}\right)R\left(t\|X = 0, Z_2^{X=1}\right)\right]$
Page 6	
$\frac{1}{N^{X=1}}\sum_{i=1}^{N^{X=1}} S^*\left(t\|\|X = 1,\ Z_1^{X=1} = z_{1i}\right)\hat{R}\left(t\|\|X = 1,\ Z_2^{X=1} = z_{2i}\right)$	$\frac{1}{N^{X=1}}\sum_{i=1}^{N^{X=1}} S^*\left(t\|X = 1,\ Z_1^{X=1} = z_{1i}\right)\hat{R}\left(t\|X = 1,\ Z_2^{X=1} = z_{2i}\right)$
$-\frac{1}{N^{X=1}}\sum_{i=1}^{N^{X=1}} S^*\left(t\|\|X = 0,\ Z_1^{X=1} = z_{1i}\right)\hat{R}\left(t\|\|X = 0,\ Z_2^{X=1} = z_{2i}\right)$	$-\frac{1}{N^{X=1}}\sum_{i=1}^{N^{X=1}} S^*\left(t\|X = 0,\ Z_1^{X=1} = z_{1i}\right)\hat{R}\left(t\|X = 0,\ Z_2^{X=1} = z_{2i}\right)$
Corrections in section: Eliminating cancer-related differences	
Equation 7	
$E\left[S^*\left(t\|\|X = 1, Z_1^{X=1}\right)R\left(t\|X = 1, Z_2^{X=1}\right)\right]$	$E\left[S^*\left(t\|X = 1, Z_1^{X=1}\right)R\left(t\|X = 1, Z_2^{X=1}\right)\right]$
$- E\left[S^*\left(t\|\|X = 1, Z_1^{X=1}\right)R\left(t\|X = 0, Z_2^{X=1}\right)\right]$	$- E\left[S^*\left(t\|X = 1, Z_1^{X=1}\right)R\left(t\|X = 0, Z_2^{X=1}\right)\right]$
Page 6	
$\frac{1}{N^{X=1}}\sum_{i=1}^{N^{X=1}} S^*\left(t\|\|X = 1,\ Z_1^{X=1} = z_{1i}\right)\hat{R}\left(t\|\|X = 1,\ Z_2^{X=1} = z_{2i}\right)$	$\frac{1}{N^{X=1}}\sum_{i=1}^{N^{X=1}} S^*\left(t\|X = 1,\ Z_1^{X=1} = z_{1i}\right)\hat{R}\left(t\|X = 1,\ Z_2^{X=1} = z_{2i}\right)$
$-\frac{1}{N^{X=1}}\sum_{i=1}^{N^{X=1}} S^*\left(t\|\|X = 1,\ Z_1^{X=1} = z_{1i}\right)\hat{R}\left(t\|\|X = 0,\ Z_2^{X=1} = z_{2i}\right)$	$-\frac{1}{N^{X=1}}\sum_{i=1}^{N^{X=1}} S^*\left(t\|X = 1,\ Z_1^{X=1} = z_{1i}\right)\hat{R}\left(t\|X = 0,\ Z_2^{X=1} = z_{2i}\right)$
Corrections in section: Avoidable deaths	
Page 7	
$\mathrm{D}_1(t\|\|\mathrm{X} = 1) = \mathrm{N}^*\left[1 - E\left[S^*\left(t\|\|X = 1,\ Z_1^{X=1}\right)R\left(t\|X = 1, Z_2^{X=1}\right)\right]\right]$	$\mathrm{D}_1(t\|X = 1) = \mathrm{N}^*\left[1 - E\left[S^*\left(t\|X = 1,\ Z_1^{X=1}\right)R\left(t\|X = 1, Z_2^{X=1}\right)\right]\right]$

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Page 7	
$\mathrm{D}_{R_0}(t\|\|\mathrm{X}=1)=\mathrm{N}^*\left[1-E\left[S^*\left(t\|\|X=1,\ Z_1^{X=1}\right)R\left(t\|X=0,Z_2^{X=1}\right)\right]\right]$	$\mathrm{D}_{R_0}(t\|X=1)=\mathrm{N}^*\left[1-E\left[S^*\left(t\|X=1,\ Z_1^{X=1}\right)R\left(t\|X=0,Z_2^{X=1}\right)\right]\right]$
Equation 8	
$\mathrm{AD}_{R_0}=\mathrm{D}_1(t\|\|\mathrm{X}=1)-\mathrm{D}_{R_0}(t\|\mathrm{X}=1)$	$\mathrm{AD}_{R_0}=\mathrm{D}_1(t\|X=1)-\mathrm{D}_{R_0}(t\|X=1)$
Equation 9	
$N^*\left[1-\frac{1}{N^{X=1}}\sum_{i=1}^{N^{X=1}}S^*\left(t\|\|X=1,\ Z_1^{X=1}=z_{1i}\right)\hat{R}\left(t\|\|X=x,\ Z_2^{X=1}=z_{2i}\right)\right]$	$N^*\left[1-\frac{1}{N^{X=1}}\sum_{i=1}^{N^{X=1}}S^*\left(t\|X=1,\ Z_1^{X=1}=z_{1i}\right)\hat{R}\left(t\|X=x,\ Z_2^{X=1}=z_{2i}\right)\right]$