## Indirect Adjustment of Multiple Observed Variables for Multiple Unobserved Variables\*

$$HR_{l}^{adj} = \frac{HR_{l}^{unadj}}{\prod_{r=1}^{R} HR_{r}^{\widetilde{\Delta}_{(l,r)}}}$$

Literature or CCHS

 $\left(\sum_{Strata(s)} X_{s}' X_{s}\right)^{-1} \sum_{Strata(s)} X_{s}' U_{s} = \widetilde{\Delta} \longleftarrow \text{Ancillary Data}$ 

Covariates Used in Survival Model

Missing Covariates in Survival Model

<sup>\*</sup>Shin et al. Environmental Research, 2014