Longitudinal Data with Nonignorable Dropout

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Abstract: We investigate marginal inference for longitudinal data subject to nonignorable dropout.The proposed marginalised model directly specifies marginal associations between longitudinal responses and covariates while leaving the within-subject dependence unspecified. It incorporates nonignorable dropout events, which marginally follow a semiparametric transformation model, through a flexible conditional mean model. We develop an estimation procedure based on a series of asymptotically unbiased estimating equations. The resulting estimators for the marginal regression parameters are consistent and asymptotically normal, with a sandwich-type variance-covariance matrix that can be consistently estimated by the usual plug-in rule. The proposed approach is evaluated by simulations and illustrated by a real data application.