We want to consider covariation among shedding, duration, and contact. Could rewrite the model to incorporate shedding explicitly (*Z* is parasites in the environment):

Then we have covariation between (shedding), (duration), and (contact). Contact means “contact between hosts and parasites in the environment” NOT really about social interaction. Connection to e.g. social networks is less obviously important.

Another option is to break into different components that reflect contact and transmissibility (which is sort of, but not quite, like shedding). Or could make transmissibility = probability of infection given contact a function of shedding rate.

Multiple model comparisons: covariation between (considering both saturating and sigmoidal relationship between ); covariation between (considering both saturating and sigmoidal relationship between )

All pairwise:

1. (saturating)
2. (sigmoidal)
3. (saturating)
4. (sigmoidal)
5. (saturating)
6. (sigmoidal)

If you consider a model without recovery,

1. (saturating)
2. (sigmoidal)
3. (saturating)
4. (sigmoidal)

If you only have sigmoidal relationship

1. (sigmoidal)
2. (sigmoidal)
3. (sigmoidal)

If you only have sigmoidal relationship and no recovery

1. (sigmoidal)
2. (sigmoidal)