

Let's suppose that there was clinical trial for a new drug XYZ. We collected the patient's data and observed the concentrations but there was a problem, now we think that the dosage we were giving, say 100mg was not sufficient, we did not see the kind of response we wanted to see.

The question arises, what if I increase the dose to say, 200mg, does that fix the problem?

To answer this question we would have to run the entire clinical trial again with the 200mg dose. That slows us down and costs a lot!

So how do we answer this question?

Fitting

Read the data

```
julia> data = read_pumas(simdf,cvs=[:isPM, :wt])  
Population  
  Subjects: 10  
  Covariates: isPM, wt  
  Observables: dv
```

Use this data to estimate the parameters of our model.

```
julia> res = fit(model,data,param,Pumas.FOCEI())  
FittedPumasModel  
  
Successful minimization: true  
  
Likelihood approximation: Pumas.FOCEI  
Objective function value: 8084.54  
Total number of observation records: 1210  
Number of active observation records: 1210  
Number of subjects: 10  
  
-----  
              Estimate  
-----  
tvcl      4.8809  
tvv       89.739  
pmoncl   -0.73558  
 $\Omega_{1,1}$   0.10822  
 $\Omega_{2,2}$   0.051508  
 $\sigma_{prop}$  0.042149  
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```