

ASSIGNMENT 18

The data of the file `hospital.dat` are a sample from a larger dataset collected on persons discharged from a selected Pennsylvania hospital as part of a retrospective chart review of antibiotic usage in hospitals (Townsend *et.al.*, 1979, *Journal of Infectious Diseases*, 139(6), 688-697). The data have the following form:

Column	Label
1-2	id no.
4-5	Duration of hospital stay
7-8	Age
10	Sex 1=male/2=female
12-15	First temperature following admission
17-18	First WBC(x1000) following admission
20	Received antibiotic 1=yes/2=no
22	Received bacterial culture 1=yes/2=no
24	Service 1=med/2=surg.

Construct the appropriate model in BUGS to assess which characteristics influence the duration of hospital stay. Estimate the posterior distribution of expected duration of hospital stay a patient with average characteristics. Assess the fit of your model and argue on which distribution should be used for our model.