

# **SIMPLE WinBUGS CODE EXAMPLES**

## Poisson Model with standardised rate and flat prior for the relative risk

```
model
{for (i in 1 : 26) {
    num[i] ~ dpois(mu[i])
    log(mu[i]) <- log(e[i]) + alpha0
    RR[i] <- mu[i] / e[i]
  }
  OR<-exp(alpha0)
  alpha0 ~ dflat()
}
list(alpha0=0.01)
```

## More complex Poisson Regression on two covariates where the regression parameters have normal prior distributions.

```
model
{
  for (i in 1 : 26) {
    num[i] ~ dpois(mu[i])
    log(mu[i]) <- log(e[i]) + alpha0 + alpha1 * dep[i] + alpha2*dist[i]
    RR[i] <- mu[i] / e[i]
  }
  alpha2 ~ dnorm(0.0,1.0E-5)
  alpha1 ~ dnorm(0.0, 1.0E-5)
  alpha0 ~ dflat()
}
list(alpha0=0.01, alpha1=0.01, alpha2=0.01)
```

## A Poisson model with covariates and a frailty effect for each data point

model

```
{
  for (i in 1 : 26) {
    v[i] ~ dnorm(0.0,dstar)
    num[i] ~ dpois(mu[i])
    f[i]<-(1+exp(-alpha2*dist[i]))
    log(mu[i]) <- log(e[i])+alpha0 + alpha1 * dep[i]+log(f[i])+v[i]
    RR[i] <- mu[i] / e[i]
  }
dstar ~ dgamma(0.001,0.001)
alpha2 ~ dnorm(0.0,1.0)
alpha1 ~ dnorm(0.0, 1.0E-5)
alpha0 ~ dflat()
}
list(alpha0=0.01, alpha1=0.01, alpha2=0.01,dstar=0.001,
v=c(0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0))
```