6 WinBUGS code for network meta-analysis for value of
information analyses (A8)

# Binomial likelihood, logit link
# Random effect model, multi-arm trials
model{
  # *** PROGRAM STARTS
  for(i in 1:ns){
    # LOOP THROUGH STUDIES
    w[i,1] <- 0  # adjustment for multi-arm trials is zero for control arm
    delta[i,1] <- 0  # treatment effect is zero for control arm
    mu[i] ~ dnorm(0,.0001)  # vague priors for all trial baselines
    for (k in 1:na[i]) {
      # LOOP THROUGH ARMS
      r[i,k] ~ dbin(p[i,k],n[i,k])  # binomial likelihood
      logit(p[i,k]) <- mu[i] + delta[i,k]  # model for linear predictor
      rhat[i,k] <- p[i,k] * n[i,k]  # expected value of the numerators
      dev[i,k] <- 2 * (r[i,k] * (log(r[i,k])-log(rhat[i,k]))
                      + (n[i,k]-r[i,k]) * (log(n[i,k]-r[i,k]) - log(n[i,k]-rhat[i,k])))
    }
    resdev[i] <- sum(dev[i,1:na[i]])  # summed residual deviance contribution for this trial
    for (k in 2:na[i]) {  # LOOP THROUGH ARMS
      delta[i,k] ~ dnorm(md[i,k],taud[i,k])  # trial-specific LOR distributions
      md[i,k] <- d[BBPop[i]+1,t[i,k]] - d[BBPop[i]+1,t[i,1]] + sw[i,k]  # mean of LOR distributions (with multi-arm correction)
      taud[i,k] <- tau[BBPop[i]+1]*2*(k-1)/k  # precision of LOR distributions (with multi-arm correction)
      w[i,k] <- (delta[i,k] - d[BBPop[i]+1,t[i,k]] + d[BBPop[i]+1,t[i,1]])
               # adjustment for multi-arm RCTs
      sw[i,k] <- sum(w[i,1:k-1])/(k-1)  # cumulative adjustment for multi-arm trials
    }
  }
  totresdev <- sum(resdev[])  # Total Residual Deviance
d[1,1]<- 0; d[2,1]<-0  
# treatment effect is zero for reference treatment
for (j in 1:2){  
    # j=1 other surgery, j=2 BBpop surgery
    for (k in 2:nt)  { d[j,k] ~ dnorm(0,.0001)}  
        # vague priors for
treatment effects
    sd[j] ~ dunif(0,2)
    tau[j] <- pow(sd[j],-2)
}

*** PROGRAM ENDS