**Supplementary information**

R code for the calculation of the decision number, assuming hypergeometric sampling, with example based upon example in text.

hyperlqas<-function(samplesize,prevalence,totalpop,alphaerror){

 decisionnums<-seq(0,samplesize,1)

 positive<-totalpop\*prevalence

 hyperdist<-phyper(0:samplesize,positive,(totalpop-positive),samplesize)

 par(mfrow=c(1,1))

 dpos<-max(which(hyperdist<alphaerror))

 plot(0:samplesize,hyperdist,type='l',col="green",lwd=2,xlab="number of positives (x)",main=paste(samplesize," samples, true prev ", (prevalence\*100),"%",sep=""),ylab="prob of x positives or fewer")

 abline(h=alphaerror,col="red")

 abline(v=(seq(0,samplesize,1)), col="lightgray", lty="dotted")

 abline(v=decisionnums[dpos+1],col="red")

 paste("Decision number =", decisionnums[dpos+1])

}

hyperlqas(19,0.75,100,0.1)