General: The document provides a nice overview of Bayesian analyses. Clearly, Bayesian methods offer many advantages over classical treatments.

Although the document cites some of these advantages, it fails to mention (or, in one case, mis-represents) other advantages. The document makes a strong case for using Bayesian methods, but, in this reviewer's opinion, it doesn't quite go far enough. Bayesian methods should be the first choice for informing decisions that involve elements of risk and uncertainty.

Specific Comments:

Section	Comment
3.2, 1st para.	"When good prior information…" It isn't the quality of the information that is important here, it is the quality of the mathematical encoding of the information. We almost always know something about what we set out to estimate before viewing new data. Sometimes we know very little; sometimes we have precise knowledge. In any case, we need to do a good job of characterizing what we know. Even if knowledge is weak, but well-characterized, the Bayesian approach can be expected to outperform all others.
3.2, 2nd para.	Consider adding this third benefit: "Third, the output from Bayesian analyses, in the form of an uncertainty or MCMC sample, can directly inform probabilistic risk or decision analyses."
3.2, last para.	Change "may be" to "is expected to be."
3.5	For complex programs, MCMC can be accomplished using any of numerous statistical or mathematical programming packages. For simple problems, mathematical software can be used to directly express and evaluate the posterior probability density functions.
3.8	Transparency and Model Choice are two additional features of Bayesian analyses. Bayesian models often make clear and obvious many of the key assumptions that are too often ignored in classical treatments. Many of the reminders/pointers that are built into sections 3.9, 4.6, and 5.1 through 5.4 will be given greater attention simply because the Bayesian framework makes them obvious. These are no less important in Classical treatments, but are too often ignored because they aren't always clearly expressed or even recognized. Bayesian models can use the data (and priors) to inform model choice. Various measures, usually called information criteria, include penalties for complexity while rewarding high-likelihood models.

3.9, 2nd para. NO! Pre-specification of the model is not necessary! A host of models can be posed for consideration and the posterior can include probability weights assigned to the competing models. Model uncertainty can then be used, together with parameter uncertainty, to inform risky decisions! Before collecting the data, it is useful to sketch out a set of feasible models, but researchers should not be encouraged to pre-specify a single model unless they are very confident that the model is best.

3.9 "Specific statistical and computational expertise" – Consider editing the last sentence to read "The technical and statistical costs for the above are often offset by savings of a shorter trial, greater analytical flexibility, and information that is more useful (can be used to inform probabilistic risk analysis).

4.6, 1st para Exchangeability is no less important in classical methods. Classical methods are less-able to deal with hierarchical models, so exchangeability at the study level is often not an issue.

4.7, 2nd para Even when modification schemes are NOT pre-specified in the trial design, the likelihood principle guarantees that "What is in the mind of the experimenter is irrelevant!" The Bayesian researcher who didn't plan to stop after N trials, but feels he has sufficient information to take action at that point can still use Bayesian methods to make probabilistic statements about the test hypothesis.

The text suggests that the stopping rule must be pre-specified. Nonsense. Okay, it is good to think about things before starting a research project, and the stopping rule is relevant in a Frequentist treatment, but it is irrelevant in the Bayesian framework. I suspect at least one of your authors is a Frequentists.

4.8 In the second line, change "is the product only of" to "is proportional to the product of."

The last sentence of the first paragraph should end "on something external to the likelihood and the data."

5.1 Masking of physicians is mentioned. Consider also mentioning the masking of analysts!