

## **Reviewer's report**

**Title:** Severe traumatic injury during long duration spaceflight: Light years beyond ATLS.

**Version:** 1 **Date:** 3 March 2009

**Reviewer:** Amy Wyrzykowski

### **Reviewer's report:**

The authors provide an extremely comprehensive and well written review of the issues relevant to trauma and care of the injured during space flight. The review highlights the conditions most likely to occur and focuses on injuries that are both life threatening and would have significant impact on the crew and mission. While the original plans for serious injury in low earth orbit specified early return to earth, exploration class missions will not have this option and will require medical autonomy. As such, the review provides an in depth discussion of the physiology and pathophysiology of injury in space and the challenges inherent in providing medical care in the ultimate austere environment. It also gives an outline of how to translate the accepted tenets of ATLS into the space environment. Frankly, it is fascinating reading.

Major compulsory revisions: None

Minor essential revisions: None

Discretionary Revisions:

1. Would it be possible to provide any information on the state of transfusion medicine in space? Hemorrhage is a specific cause of mortality and in addition to the cessation of bleeding, restoration of circulating blood volume is of significant importance. Given the finite lifespan of PRBCs and other blood products, what are the options for sources of these on prolonged space missions? What are the possibilities?

2. Would it be feasible to provide a very simple overview of the existing critical care capabilities in space as well as suggestions for future space missions?

Again, overall, an extremely well written manuscript that should be published.

**Level of interest:** An article of outstanding merit and interest in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.