**7. Auto Crash Spine Injury case study**

Name and date submitted (3 pts):

Instructions: Using this handout as a TEMPLATE, create space in the document below, and write or type your answers. Turn in your completed work as an email attachment.

(5 questions, 100 points possible)

Background

Road traffic accidents often result in spinal injuries, especially to the cervical spine (neck). When the atlas and axis vertebrae (otherwise known as C1 and C2) are involved, a condition known as “atlantoaxial instability” results, wherein the ‘dens’ or ‘peg’ on the axis (C2) is fractured, resulting in the atlas (C1) sliding forward and impinging on the spinal cord. This causes neck pain and neurological deficit (nerve damage). The most common surgical remedy is C1-C2 screw fixation. Watch the corresponding videos posted in Unit 7 and respond to the questions below.

1. Normal X-rays below: On both x-rays (both the anterior and lateral views), with a dark pen/pencil, clearly identify and label the cervical vertebrae C1 through C7. Also label the atlas and axis.



1. In Fig. 1, clearly identify and label the atlas and axis vertebrae. What is going on with them? Are they normal? Compare with the previous ‘normal’ x-ray. What has happened? What is the danger to this individual?
2. In Fig. 3, clearly identify where the spinal cord is being compressed. Why is this happening? Explain in terms of the atlas and axis vertebrae.
3. Watch the videos on C1-C2 screw fixation which are posted in Unit 7. Explain the main steps used in this surgical procedure. How does the surgery take place? Outline it here.
4. Print out and study the National Highway Transportation Safety Board (NHTSB) “2016 Quick Facts” handout, posted in Unit 7. Analyze the statistics and write a 2-paragraph essay addressing the following:
5. What are the major causes of auto accidents each year?
6. What are the statistics on alcohol-related deaths?
7. Are these rates going up or down?
8. What actions can you (personally) take to protect you and your friends from auto injuries?
9. Any other pertinent information