The Golden Hour

Outreach Activity

I. Overview
This activity gives students an opportunity to learn about traumatic brain injury through an interactive computer game. Through the game they take on a role of a super medical student who is appointed to an emergency trauma case where the victim experiences a bike accident. The students will have a chance to work with an EMT to assess the initial condition of the patient, a CT technician to evaluate the patient’s brain scans, and a Neurosurgeon to operate on the patient’s brain. Throughout the process, the player will also be checking in with the head doctor to review their findings and determine the next steps for the patient.

II. Learning Objectives
- Recognize there are three general classifications of TBI (mild, moderate, severe) that fall on a gradient of severity and are used to describe a patient’s condition.
- A patient’s condition after a TBI is assessed using the Glasgow Coma Scale
- Explain the diagnostic role of CT scans
- Identify certain structures and lobes of the brain on a normal CT scan
- Compare a normal CT scan with a CT scan of a brain-damaged patient and explain the structural changes
- Identify the different types and the loci of brain injury on CT scans
- Interpret the CT scans and explain the potential functional outcomes of the TBI for the patient

III. Adaptations/Accommodations

Safety
There are no additional safety concerns associated with this lesson.

IV. Timeframe for activity

Scene 1: 15 min
Scene 2: 15 min
Scene 3: 20 min
V. Advance prep and materials

Activity 1: The Golden Hour game

Materials:
- Computers (1 per 2 students)
- Electronic mice
- Power cords

Preparation:
- If there will be no access to internet, load local files for the game onto each computer
- Play through the game to make sure it is working properly and to familiarize yourself with the game.

VI. Resources and references

Facilitator resources
- The Gold Hour Game: http://neuron.illinois.edu/games/tbigame/the-golden-hour
- The Golden Hour Game Overview: http://neuron.illinois.edu/sites/default/files/games/tbigame/The_Golden_Hour_Overview.pdf
- Associated Project NEURON Lesson Plans:
  - http://neuron.illinois.edu/golden-hour-curriculum
  - http://neuron.illinois.edu/units/why-dread-a-bump-on-the-head (Lessons 1 & 3)

VII. Activity Implementation

Main Activity
Ask the students to please not use the computers just yet. Begin the activity with a short discussion about Traumatic Brain Injury (TBI) to discover what students know or have heard. Ask questions such as:

- What do you know about Traumatic Brain Injury?
- Have you heard or seen anything in the media about brain injury?
  - If so, what did you see/hear?
- Do you have any experiences with Traumatic Brain Injury that you would like to share?
  - Do you have any relatives or friends that have sustained a traumatic injury to their head?

Have students share their stories and discuss what they know already. After this brief discussion introduce The Golden Hour game. Explain to the students that they will be in the role of medical students. As the medical student, they are working on an emergency case in which they have to respond
to a serious bike accident. They will begin by going to the site of the accident with Emergency Medical Technician (EMT) to collect the patient and assess his condition.

Direct the students to the three reports in their booklet (EMS, CT, and Surgery). It is important that they collect this valuable information about the patient as they play through the game and complete these reports.

Have the students open the game by clicking on the “Golden Hour” icon on the desktop. The first thing they will see is the Menu. Before beginning the game ask students to look at the Medical Team. They can click on each of the characters to read more about them. This team of doctors and technicians will be helping them as they play through the game.

Have the students click on “New Game” and begin playing through the game in pairs. Walk around and help the students and ask them questions to extend their thinking and/or relate what they are seeing to their own lives. Help the students to also complete their reports.

Encourage students to take turns with the mouse, playing through, and also to talk with each other about what is happening in the game and how it relates to what they know and their own lives.

Troubleshooting
As the facilitator, be prepared to troubleshoot if the students have difficulty advancing the game. This is where your familiarity in playing through the game will be crucial. If students need assistance, it may be as simple as directing them to do the correct action in order to advance. For example, maybe they are not selecting the right tool or they do not have the correct answers selected in the reports. If no action will advance the game, refresh the browser, and skip forward to the scene the student was working on.