Injury Sucks.

Facilitator Guide for Injury Presentation

Objective: for students to have a better understanding of injury, the injury process, injury treatment and outcomes and beginning to describe prevention strategies.

Legend:

 = Speaking notes

 = What you are looking for in the student's responses

 = Additional information

Notes:

Each slide is provided in order with a main objective as well as speaking notes, what to look for in conversation with students and additional information where necessary.

SLIDE 1	**INJURY SUCKS.** Reality from the frontline. No Bull Sh*t.	**Objective**: Reality of injury and set the tone for the day.
	As a trauma nurse at Sunnybrook I can tell you first hand that injury sucks. It sucks for patients who endure the initial physical and emotional pain of the injury, the treatment provided by EMS and here at hospital that is often painful too, rehabilitation and returning to a new normal depending on the extent of their injuries. It sucks for the families and friends who support the patient on their recovery. And it also sucks for the healthcare professionals who work every day to support people who have injured in preventable circumstances. There really is no good that comes from a severe or traumatic injury. That's just the plain truth of it.	

ADVANCE TO NEXT SLIDE…

SLIDE 2	**SURVEY:** Have you ever received medical care for an injury in an Emergency Department (or know someone who has)?	**Objective:** To get the students talking and to understand the prevalence of injury in our community.
	How many people in the room today have experienced an injury that required medical care at the emergency department of a hospital or know someone who has?	
	Looking to see that almost everyone in the room has experience injury first hand or knows someone who has. You can also ask if anyone wants to share the kind of injury they experienced – expecting that most will be minor like a cut, broken arm, etc.	
	Injury is a major public health issue and is the leading cause of death for Canadians under the age of 45. Injuries are a leading cause of disability, and hospitalization across the lifespan in Canada and around the world.	
	We are going to look at some of the key issues around injury to help you as you go through today to understand the range of injuries you will encounter in our tour and other speakers. We also want you to start thinking about injury prevention as something that you have the ability to influence.	

ADVANCE TO NEXT SLIDE…

SLIDE 3	**SURVEY:** Where are teens likely to be injured? A. At work B. On the road C. Sport and recreation	**Objective:** To get the students talking and to understand where injuries are common.

	Where are teens likely to be injured? A) At work, B) On the road, C) Sport and Recreation
	Looking for answers like: At home, at school, on the road, in sports, at work, at parties, at the cottage…ALL THE ABOVE
	The leading places for teens to be injured are: on the road (MVC), at work and at play (sports – non-traumatic) *Teens are disproportionately represented in the injury and traumatic injury statistics. This means there are more teens injured than we would expect based on the population numbers and spread of injury in other age groups.* *Young workers are at higher risk of injury in their first few months on the job – it's important to remember as a new employee that you have rights and can refuse to work in unsafe conditions. Make sure you know how to properly use protective equipment and operate machinery.* *We will talk a lot about MVCs today, so I will leave that for now.*

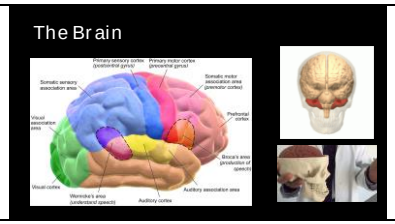
ADVANCE TO NEXT SLIDE…

SLIDE 4		**Objective:** Understand there are a variety of injuries and today we are most concerned about traumatic injury
	There are different kinds of injuries that we see here in the hospital and some are more serious than others. The three types of injuries are ACUTE, CHRONIC and TRAUMATIC. • *What do you think an ACUTE injury is?* • *What do you think a CHRONIC injury is?* • *What do you think a TRAUMATIC injury is?* *Our day today is focussed on the prevention of traumatic injuries and in particular: Brain and Spinal Cord injuries. These types of injuries are the most devastating in terms of the costs to individuals as well as the healthcare system.*	

ADVANCE TO NEXT SLIDE…

SLIDE 5		**Objective:** Understand that a healthy body is balanced and an injury upset that's balance as the body works to address the injured area.
	When injury happens, the body reacts in a way that disrupts the normal balance called homeostasis and creates a response that involves the whole body. • *If you have ever had an injury – even a minor one, do you remember how your body responded? What did it feel like, look like?*	
	Looking for heat, redness, swelling, tenderness, pain	
	Generally, there are two ways the body responds to an injury: • *Stress (hormonal and metabolic changes response to injury)* • *Inflammation (physiological response to chemical reactions happening in the body)* *The response to injury begins in the immune system at the moment of injury* *That is what the body does as a whole, but let's take a look at some specific types of injuries* *First up - the brain and brain injuries…*	

ADVANCE TO NEXT SLIDE

SLIDE 6		**Objective:** The brain is the most important organ, responsible for all body functions and when subjected to an injury the effects can be catastrophic.
	(Use the Brain Model) *Does anyone know what the brain does?*	
	Looking for brain functions: processing sensory information, regulating blood pressure and breathing, releasing hormones, etc. Everything needed to live. Feel free to add in as much as you think is necessary or relatable to the group about brain function.	

	(with click advance) *The brain sits in the skull – or bony protector of the brain. How thick do you think the skull is?*
	7mm or roughly 3 Toonies thick
	(with click advance) *Because the skull is so hard, what do you think happens when the body or head is jarred?*
	Looking for bruising, bleeding, injury, concussion, catastrophic injury
	There are short-term brain injuries and long-term brain injuries that can result. You may be hearing from people who are living long-term with brain injury later today. Right now, let's look at a catastrophic outcome from a brain injury.

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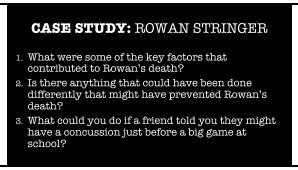
SLIDE 7		**Objective:** Rowan Stringer is the name of the young student athlete who died playing rugby. Rowan's Law (Concussion Safety) was passed in Ontario in 2018. Link: https://www.youtube.com/watch?v=NfHMd-XEjKQ
	Has anyone heard the name Rowan Stringer, or heard about Rowan's Law at school?	
	Looking for: Student athlete who died. Coroner's inquest leading to legislation for concussion education at school. Note: Dr. Dan Cass, SVP here at Sunnybrook was the coroner and has led the development of legislation and push for better education.	
	As you watch the video, listen for some of the key events that led to Rowan's death	

ADVANCE TO NEXT SLIDE…

SLIDE 8		**Objective:** Quick discussion about the key factors that led to Rowan's death and development of strategies to prevent a similar outcome.
	1. *What were some of the key factors that contributed to Rowan's death?* 2. *Is there anything that could have been done differently that might have prevented Rowan's death?* 3. *What could you do if a friend told you they might have a concussion just before a big game at school?*	
	Looking for discussion about the factors identified in the video, emerging thoughts on prevention including looking out for friends, reporting injuries, etc.	

ADVANCE TO NEXT SLIDE…

SLIDE 9		**Objective:** To contrast concussion with catastrophic brain injury
	• *This type of injury is different from concussion, but can result from a significant traumatic event like a motor vehicle collision, violence, or falls.* • *In Rowan's story we heard that she had an initial concussion, which is a less severe brain injury, but eventually died of a catastrophic brain injury resulting from her brain swelling after multiple hits* • *In this slide we see a young man named Tony who was out for a night of fun with his friends at a party. At some point in the evening Tony's friend got into a fight with another guy and when Tony stepped in to help his friend, he was struck on the head with a hammer. The result was a severe brain injury. Tony was transferred to a major trauma centre for his care and then spent (insert number of months) in a rehabilitation centre to re-learn basic functions such as (insert functions)*	
	• *Explain the process of treating such an injury (including removing the hammer)* • *Rationale for removing the brain flap (excess swelling)* • *Process of removing the brain flap* • *How and where is the flap stored?* • *When does it get reattached?* • *What are the long-term consequences of this procedure?* • *What is the expected prognosis in a situation like this? (can you speak from real-life experiences in which some people have done well and other not so well?)*	

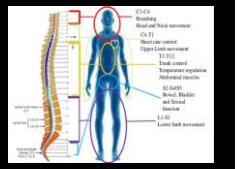
ADVANCE TO NEXT SLIDE…

SLIDE 10	Top 3 causes of traumatic brain injury at Sunnybrook 1. Falls 2. Motor Vehicle Collision 3. Pedestrian incidents	**Objective:** To know the three top causes of TBI at Sunnybrook
	These are the top three causes of TBI at Sunnybrook for all ages	

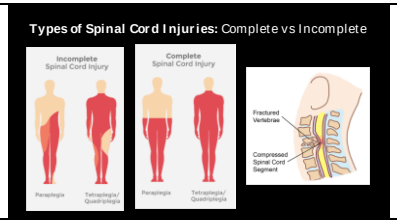
ADVANCE TO NEXT SLIDE…

SLIDE 11	Prevention for 3 causes of traumatic brain injury at Sunnybrook Injury Type / PREVENTION STRATEGIES Falls / ? Motor vehicle collision / ? Pedestrian incidents / ?	**Objective:** To briefly discuss some strategies for reducing risk of injury
	What are some ways you can think of to reduce the risk of falling?	
	Looking for things like paying attention, not using alcohol or drugs, not being too tired…	
	What are some ways you can think of to reduce the risk of MVC?	
	Looking for things like paying attention, not using alcohol or drugs, not being too tired, driving education, reducing speed, paying attention to weather conditions…	
	What are some ways you can think of to reduce the risk of Pedestrian Injury?	
	Looking for things like paying attention, not using alcohol or drugs, not being too tired, crossing at lighted intersections, using pedestrian crosswalks, following signals, do not cross mid-block, wear reflective clothing paying attention to weather conditions…	

ADVANCE TO NEXT SLIDE…

SLIDE 12	The Spinal Cord 	**Objective: To understand the function of the spinal cord**
	What do you think the spinal cord does? (use the spinal cord model)	
	Looking for: transmitting messages from the brain to the body and from the body back to the brain, responsible for movement, feeling, etc.	
	Review as much of the points below as time permits: • *The spinal cord is a long, thin, tubular bundle of nervous tissue and support cells that extends from the medulla oblongata in the brainstem to the lumbar region of the vertebral column.* • *The brain and spinal cord together make up the central nervous system (CNS).* ***[Feel free to point out locations]*** • *The spinal cord functions primarily in the transmission of nerve signals from the motor cortex to the body, and from the afferent fibers of the sensory neurons to the sensory cortex.* • *The spine is made of 33 individual bones stacked one on top of the other* ***[use spine model]*** • *This spinal column provides the main support for your body, allowing you to stand upright, bend, and twist, while protecting the spinal cord from injury.* ***The four spinal cord regions are:*** • ***The cervical spinal cord:*** *This is the topmost portion of the spinal cord, where the brain connects to the spinal cord, and the neck connects to the back. This region consists of eight vertebrae, commonly referred to as C1-C8. All spinal cord numbers are descending, so C1 is the highest vertebra, while C8 is the lowest in this region.* • ***The thoracic spinal cord:*** *This section forms the middle of the spinal cord, containing twelve vertebrae numbered T1-T12.* • ***The lumbar spinal cord:*** *This is a lower region of the spinal cord, where your spinal cord begins to bend. If you put your hand in your lower back, where your back bends inward, you're feeling your lumbar region. There are five lumbar vertebrae, numbered L1-L5.* • ***The sacral spine:*** *This is the lower, triangle-shaped region of the spine, also with five vertebrae. While the lumbar cord bends inward, the vertebrae of the sacral region bend slightly outward. There is no actual spinal cord in this section, it is made up of nerve roots which exit the spine at their respective vertebral levels.*	

ADVANCE TO NEXT SLIDE…

SLIDE 13		**Objective: To understand the complex nature and categorization of spinal cord injuries.**
	Have you heard of a spinal cord injury? What do you think it looks like?	
	Looking for some insight – complex, extensive rehab needs, partial, complete, permanent, transient, etc.	

	• *Spinal cord injuries can be caused by trauma to the spinal column (stretching, bruising, applying pressure, severing, laceration, etc.).*
	• *All spinal cord injuries are divided into two broad categories: incomplete and complete.*
	  • ***Incomplete spinal cord injuries:*** *With incomplete injuries, the cord is only partially severed, allowing the injured person to retain some function. In these cases, the degree of function depends on the extent of the injuries.*
	  • ***Complete spinal cord injuries:*** *By contrast, complete injuries occur when the spinal cord is fully severed, eliminating function. Though, with treatment and physical therapy, it may be possible to regain some function.*
	• *The vertebral bones or intervertebral disks can shatter, causing the spinal cord to be punctured by a sharp fragment of bone. Usually, patients with spinal cord injuries will suffer loss of feeling in certain parts of their body. In milder cases, a victim might only suffer loss of hand or foot function.*
	• *More severe injuries may result in paraplegia, tetraplegia (also known as quadriplegia), or full body paralysis below the site of injury to the spinal cord.*
	• *Incomplete spinal cord injuries are increasingly common, thanks in part to better treatment and increased knowledge about how to respond—and how not to respond—to a suspected spinal cord injury. These injuries now account for more than 60% of spinal cord injuries, which means we're making real progress toward better treatment and better outcomes.*	

	ADDITIONAL NOTES: • **Tetraplegia**: These injuries, which are the result of damage to the cervical spinal cord, are typically the most severe, producing varying degrees of paralysis of all limbs. Sometimes known as quadriplegia, tetraplegia eliminates your ability to move below the site of the injury, and may produce difficulties with bladder and bowel control, respiration, and other routine functions. The higher up on the cervical spinal cord the injury is, the more severe symptoms will likely be. • **Paraplegia**: This occurs when sensation and movement are removed from the lower half of the body, including the legs. These injuries are the product of damage to the thoracic spinal cord. As with cervical spinal cord injuries, injuries are typically more severe when they are closer to the top vertebra. • **Triplegia**: Triplegia causes loss of sensation and movement in one arm and both legs, and is typically the product of an incomplete spinal cord injury. • Injuries below the lumbar spinal cord do not typically produce symptoms of paralysis or loss of sensation. They can, however, produce nerve pain, reduce function in some areas of the body, and necessitate several surgeries to regain function. Injuries to the sacral spinal cord, for instance, can interfere with bowel and bladder function, cause sexual problems, and produce weakness in	

	the hips or legs. In vary rare cases, sacral spinal cord injury survivors suffer temporary or partial paralysis. • Some of the most common types of incomplete or partial spinal cord injuries include: • **Anterior cord syndrome**: This type of injury, to the front of the spinal cord, damages the motor and sensory pathways in the spinal cord. You may retain some sensation, but struggle with movement. • **Central cord syndrome**: This injury is an injury to the center of the cord, and damages nerves that carry signals from the brain to the spinal cord. Loss of fine motor skills, paralysis of the arms, and partial impairment—usually less pronounced—in the legs are common. Some survivors also suffer a loss of bowel or bladder control, or lose the ability to sexually function. • **Brown-Sequard syndrome**: This variety of injury is the product of damage to one side of the spinal cord. The injury may be more pronounced on one side of the body; for instance, movement may be impossible on the right side, but may be fully retained on the left. The degree to which Brown-Sequard patients are injured greatly varies from patient to patient.

ADVANCE TO NEXT SLIDE…

SLIDE 14	Top 4 causes of spinal cord injury at Sunnybrook 1. Falls 2. Motor vehicle collision 3. Struck by thrown, projected or falling object 4. Gun shot	**Objective:** To know the leading causes of SCI at Sunnybrook
	These are the top three causes of TBI at Sunnybrook for all ages	

ADVANCE TO NEXT SLIDE…

SLIDE 15	Prevention for 4 causes of spinal cord injury at Sunnybrook Injury Type / PREVENTION STRATEGIES Falls / ? Motor vehicle collision / ? Struck by thrown, projected or falling object / ? Gun shot / ?	**Objective:** To begin thinking about prevention strategies
	We already talked about prevention ideas for Falls and MVCs, but what about what about the third category – these are often work-related injuries	
	Looking for things like getting proper training, wearing protective equipment, reporting dangerous environments, refusing dangerous work	
	What are some ways you can think of to reduce the risk of gun-related injuries?	
	Looking for things like…gun control, community interventions to reduce gun use, violence prevention programs.	

ADVANCE TO NEXT SLIDE…

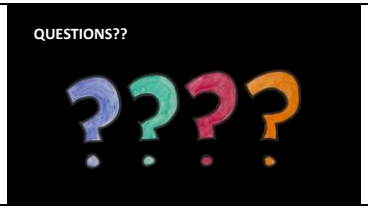
SLIDE 16		**Objective:** There is much hope for people living with SCI
	• *There are many stories of people living successful and inspiring lives after a spinal cord injury [If there is a spinal cord Injury Ambassador speaking to the group in the afternoon, please add: "This afternoon you will be hearing from our of our injury ambassadors living with a spinal cord injury. You will hear about their injury and their journey to today]* • *While the initial trauma of the injury may be overwhelming and difficult to process, there is hope.* • *Today's advances in human rights policy, accessibility advocacy and general awareness of the rights of people with disabilities, there really are very few limitations to what someone with a spinal cord injury can achieve.* ***Here are some examples:*** • *Top right – **Sandra Burton**, patient at Sunnybrook, spinal cord injury from being pushed into a pool at a party. Successfully working as a speech pathologist, married and mom to twin girls (post injury).* • *Bottom Left - **Anthony Lue**, workplace spinal cord injury as a teenager. Now a workplace safety advocate and para-athlete.* • *Bottom Right - **Ryan Straschnitzki**, Humboldt hockey player, spinal cord injury from bus crash. Successfully rehabilitating after injury and working to make national sledge hockey team.*	

ADVANCE TO NEXT SLIDE…

SLIDE 17		**Wrap up**
	So, we have talked about different types of injuries – do you remember the three types of injury categories?	
	Looking for acute, chronic and traumatic	

	Why are we focussed on traumatic injury here at P.A.R.T.Y Program?
	Looking for ideas about the serious nature of the injuries, permanent, life-altering…
	We talked about two specific traumatic injury types – brain injuries and spinal cord injuries. What were some of the similarities between them?
	Looking for thoughts about permanent or transient, really really important body systems.
	Last, we looked at some strategies for reducing the possibility of traumatic injuries. What is one strategy you will share with a friend or relative after today?
	Looking for retention about wearing protective equipment, following rules at work, on the road, wearing reflective clothing, crossing at lighted intersections, wearing seatbelts, etc…

ADVANCE TO NEXT SLIDE…

SLIDE 18		**Questions**
	That wraps up this conversation for now. If you have any questions about this content, please do not hesitate to ask, or now, or when we have a break or at lunch time.	