A roadmap for implementing concussion management policies and protocols in sport.

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Directives to participants:

- Consider yourself as mandated to develop a concussion management policy or protocol in the context of your current organisation (ex: government, sport federation, school board, head coach, community club, etc.).
- Considering the nature of your sport(s), the resources available, the level of participation and the specificities of the environment, use this document to take notes of the specificities to be included in your concussion management policy or protocol.

Introduction:

About policies and protocols:

"Policy" and "protocol" are sometimes used interchangeably; however, they are in fact two very different words.

POLICY: A policy, usually stated in **broad terms**, is designed to describe certain objectives. A concussion management policy can contain some sport-specific elements (e.g. a policy from a specific sport federation) or a context (e.g. a government policy for school boards). As a result of having more widespread application, policies are changed or **altered less** frequently. An example of a concussion management policy is the Policy/Program memorandum of the Ontario the Ministry of education on SCHOOL BOARD POLICIES ON CONCUSSION » implementation[1].

PROTOCOL: A protocol, on the other hand, is a description of **how to fulfill** the policy objective in a specific context. It describes the **steps** or methodology in **detail**; therefore, it is prone to regular change. Expertise or previous experience provides the underlying support for the steps prescribed in effective protocols. Therefore, protocol deviations may lead to negative outcomes. To contextualize this, while a sport governing body may adopt a broad-based policy (or injury management philosophy), a single protocol is likely to be ineffective for athletes competing at all competitive levels within that sport. For example, the specific protocol required to care for national level athletes may be considerably different from that to care for community club based athletes given the respective resources available to each.

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[1] *Ministry of education of Ontario. School board policies on concussion. Policy/Program Memorandum No.158; March 19, 2014 <http://www.edu.gov.on.ca/extra/eng/ppm/158.pdf > (Accessed March 1st, 2015)*

1. **Prevention:**

The first objective of concussion management is to create an environment that will minimise concussion incidence and complications through multidimensional preventive considerations.

How can the incidence and complications of concussions be minimized through preventive considerations?... including, but not limited to:

a. Implementing robust venue-specific Emergency Action Plans (EAP)[2]:

b. Age limitations for intentional contact in sport:

c. Implementation and application of safe rules of play:

d. Encouraging fair play and respect:

e. Adequate protective equipment:

f. Adequate facilities and safe environment:

g. Reduced contact during training:

h. Any other age appropriate modifications:

i. Education of all potential stakeholders about concussion and its contextualized management:

Notes:

2. Identification:

The second objective is to promote an environment that will optimise the early identification of possible (or presumed) concussions by all athletic stakeholders including: athletes, coaches, teachers, parents and healthcare professionals.

[2] Note: A venue-specific EAP is meant to define, with considerations for the specific environment and resources, the procedures to be used in the event of the scope of medical emergencies that can occur in a specific sport. As proper management can limit the consequences or medical emergencies, it is addressed in this section as a preventive measure. Concussion management is only one aspect of an EAP and the exhaustive discussion of an EAP is beyond the purpose of the present document.

a. Who can contribute to the identification of concussions?

   i. Health care professionals?
   ii. Athletes? (including teammates)
   iii. Coaches?
   iv. Parents?
   v. School staff?
   vi. Officials?
   vii. Others? (such as spectators, media etc.)

   Note: list all stakeholders that can potentially contribute in the targeted implementation environment

b. How can each of these stakeholder categories contribute to the identification of concussion?

c. What should each of these stakeholders know about concussions to optimize their identification?

d. How will possible (or presumed) concussion be documented when they occur?

e. How and when can the stakeholders learn about their role to optimize the identification of concussions?

   Note: all aspects related with education / communication of the protocol should be integrated under section 5 hereafter.

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3. Management:

The third objective is to optimise the management (ie: obtain the best outcome) of concussed athletes in the sport, academic, family, work and personal spheres of their life based on current best practices and contextually available resources.

a. Once a concussion has been identified, how can the following key elements of the management be implemented?

   i. Emergency management (e.g. when is it necessary to refer to an emergency medical facility?)

   ii. Immediate removal from play and no RTP same day

   iii. Early management (on-field vs. primary care facility) with appropriate disposition for those with "red flags"

   iv. Symptom monitoring / Follow up medical management

   v. Gradual return-to-learn (Note: this encompasses return to cognitive activity in general)

   vi. Gradual return to physical activity (often neglected are school activities such as physical education and recess)

   vii. Management of persistent, worsening or new manifestations (multidisciplinary collaboration / referral)

b. Can concussion management be integrated into health care processes that already exist in your environment? If so, define how?

   For example, a school board could integrate concussion management in its general injury management processes. In a sport environment, concussion management can be part of a more general EAP.

c. How will concussion follow-up be managed and documented?

   Note: Consider using a tool to document each key step of the process. Such tool should identify the criteria for each step and, if indicated, who can authorize passage to the next step

Notes:

4. Tools and expertise:

Access to proper expertise and tools that can guide the gradual return to normal physical work and academic/learning activities will help minimise the risk of persistent, recurrent or chronic consequences of concussions. Again, contextually available resources will determine specifics, but the goal is to optimise the use of available resources and eventually dedicate additional resources to improve concussion management.

a. How can pre-participation evaluation (PPE)[3] be implemented?

   i. How and when can a pre-participation evaluation relevant to concussion be obtained?

   ii. What should that pre-participation evaluation document about concussions?

   Minimally, a relevant history of health issues (including date, symptoms and duration of any episode of concussion) and baseline symptoms should be obtained. The BACKGROUND and SYMPTOM parts of the SCAT 3[4] tool can be used for that purpose even in environments that do not have professional health resources.

b. Which tools can support the implementation of the protocol?

   i. Tool for immediate management by on field providers and for follow up management:

   ii. Design or adapt a tool to document each step of the concussion management process. Such tool should include:

   - On field management
   - Appropriate disposition
   - Persistent or increasing symptoms management
   - Follow up management including RTL and sport specific RTP
     - The criteria for each step
     - Who can authorize passage to the next step
     - Space for signature and date when authorisation is needed

[3] A pre-participation evaluation (PPE) is meant to document, for each participating individual, any health issue (ex : past injuries or chronic condition such as asthma, allergies) that is relevant to a specific context of participation. Depending on the specific risk of each context, the PPE can take different forms that can range from a simple self-reported questionnaire to a formal medical evaluation that includes a physical examination.

[4] http://bjsm.bmj.com/content/47/5/259.full.pdf

- How can access to concussion expertise be facilitated?

  WARNING: Concussion expertise is not easy to define, as it is not yet a standard constituent of the basic curriculum of regulated health professions. In other words, it is the combined result of individual professional development, clinical experience and collaboration between disciplines. For that reason, the CCC also developed a tool to facilitate the identification of proper concussion management environment. This tool entitled "4 Characteristics of Good Concussion Care"[5] can be used to help identify qualified environments and individuals in a specific setting.

  i. Does the target environment have the need and resources for an on field licenced health professionals, with concussion related expertise?

  ii. Are there multidisciplinary concussion clinics with teams of licenced health professionals in your area?

  Note: the "4 Characteristics of Good Concussion Care" document can facilitate the identification of qualified environments and individuals in the targeted setting.

  Document this expertise and, if possible, establish collaboration for the design of the protocol and subsequent management of concussions.

c. Which tools can help health professionals make return-to-learn/play decisions?

  i. In settings that allow baseline testing by health professional return-to-play decisions should be based on multiple considerations including relevant medical history, symptoms, cognitive testing, balance examination, etc.

  ii. The SCAT 3 (or child SCAT) should be used at baseline and to guide return-to-play but is only one part of management.

  iii. Computerised concussion tests are not required but are an alternative to most sections of the SCAT 3. However, they do not include the balance test component of the SCAT 3.

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[5] CCC: 4 Characteristics of Good Concussion Care: http://casem-acmse.org/education/ccc/

5. Dissemination and education:

Any specific environment must plan for a communication and education strategy that will keep all stakeholders involved and informed about the concussion management protocol on a periodic basis (minimally once a year). Although an emergency action plan development is beyond the scope of this document, education about concussion and emergency management in general can benefit from an integrated dissemination strategy.

a. What are the opportunities and optimal format to educate each stakeholder categories about their respective roles in the concussion management protocol?

   i. Athletes? (including teammates)
   ii. Coaches?
   iii. Parents?
   iv. Health care professionals?
   v. School staff?
   vi. Officials?
   vii. Others? (such as spectators, media etc.)

b. Should formal educational requirements for some stakeholder categories be implemented?

   For coaches or any relevant stakeholder, formal qualification requirements such as the Concussion Awareness program of the Canadian Association of Coaches[6] can be integrated in concussion management policies and protocols.

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6. **Evaluation and review**:

A periodic process of evaluation and review of the protocol should be established as an explicit part of a policy or protocol.

[6] http://www.coach.ca/sensibilisation-aux-commotions-s16361&language=en

a. Based on the periodic review and update of concussion management recommendations (such as the International Consensus Conference on Concussion in Sport), when should the protocol be updated?

   Establishing a working relationship and collaboration with a qualified health professional close to the targeted environment can be facilitated this process.

b. Based on lessons learned from the use of the protocol in the target environment, can the protocol be optimized?

   This should be an annual process since each year of implementation is likely to reveal areas where processes can be optimized; especially over the first few years of implementation.

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