

## An International Evidence-Based Effort: Learning from the Model of Concussion Guidelines in Sports

The ideals of an evidence-based methodology are worth championing as few would argue against striving for efficiency and better patient outcomes. However "knowledge transfer" (KT) as detailed in the report by Provvidenza et al. (2013) is the critical bridge from ideals and theories to implementation and practice. Provvidenza et al. (2013) calls this bridge the "Knowledge-to-Action (KTA) framework" (p. 5) which features a partnership between knowledge creators and knowledge users (e.g. clinicians, educators, sports staff). KTA must be customized to be user-centric in order to be implemented successfully, create positive impact, and elicit higher compliance from those working on the front lines in patient care.

The process of KTA customization or "tailoring" in Provvidenza et al. (2013) resembles an inverted triangle with the top portion resembling a broad base of knowledge and evidence which needs to be filtered, focused and adapted for the target user(s) thus resulting in a specific set of relevant, highly useable KT tools and products.

In the report by Provvidenza et al. (2013), the diagram in figure 1 clearly shows the KTA framework workflow. Key points in the KTA framework workflow by Provvidenza et al. (2013) are: identification of stakeholders and their specific needs; provide the most relevant, context specific knowledge to the stakeholders; proactively define possible challenges or roadblocks and try to circumvent them; provide specific implementations (tools/products); monitor the success of such implementations and adapt where necessary; provide a plan to periodically reevaluate and update the set of implemented tools/products (thus in accordance to the evidence-based spirit, the cycle never really ends).

Development of sports (specifically impact sports) concussion protocols stemming from international guidelines down to the local level in youth sports provides a fairly successful example of the KTA framework.

A committee, the Concussion in Sport Group (CISG), was formed in response to the internationally shared concerns over concussions in impact sports. The November 2001 First International Symposium on Concussion in Sport (Austria) was organized by the International Ice Hockey Federation (IIHF), the Federation Internationale de Football Association Medical Assessment and Research Centre (FIFA, F-MARC), and the International Olympic Committee Medical Commission (IOC) (Aubry et al., 2001).

The 2001 symposium resulted in the formation of CISG; defining "concussion" as opposed to mild traumatic brain injury (mTBI); draft of sideline evaluation protocol; draft of concussion protocol including order-specifically "clinical history, evaluation, neuropsychological testing, imaging procedures, research methods, management and rehabilitation, prevention, education, future directions, and medicolegal considerations" (Aubry et al., 2001, p. 6); and draft of return-to-play (RTP) protocol. An important finding to note is that a comprehensive neuropsychological assessment after a possible concussive event is critical in the assessment and treatment management of a patient and that forms of neuroimaging, while important in severe brain trauma, play a secondary role in lesser forms of brain injury (Aubry et al., 2001). Additionally as a result from this first international effort, a series of neuropsychological tests were identified relevant to concussion detection and computer-aided testing emerged such as imPACT, CogSport, ANAM, and Headminders (Aubry et al., 2001).

## References

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