

12.0 EDUCATION

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Aiding hospitals in the implementation of a provincial MHP: Barriers and facilitators to knowledge translation

The successful adoption, implementation and sustainability of an MHP in a clinical setting can be a complex undertaking. It requires a staged change management process (described elsewhere in the toolkit) developed based on a site-specific assessment of anticipated barriers to implementation followed by a multi-faceted (e.g., rounds, simulation and feedback) and multi-level (e.g., lab and bed-side clinicians) implementation strategy. The following section provides guidance on how to achieve protocol adherence and to increase team awareness and effective delivery of an MHP. This section will address recommendation statements 8 and 41.

12.1 Barriers

Barriers to the uptake and implementation of practice guidelines are generally attributed to issues related to knowledge, attitudes and behaviour.¹ Specific to patient blood management guidelines, barriers include:

- knowledge and beliefs about the intervention
- access to knowledge
- information and resistance to clinical practice change.²

The successful implementation of an MHP has to consider barriers specific to various environmental contexts and match them to implementation strategies.

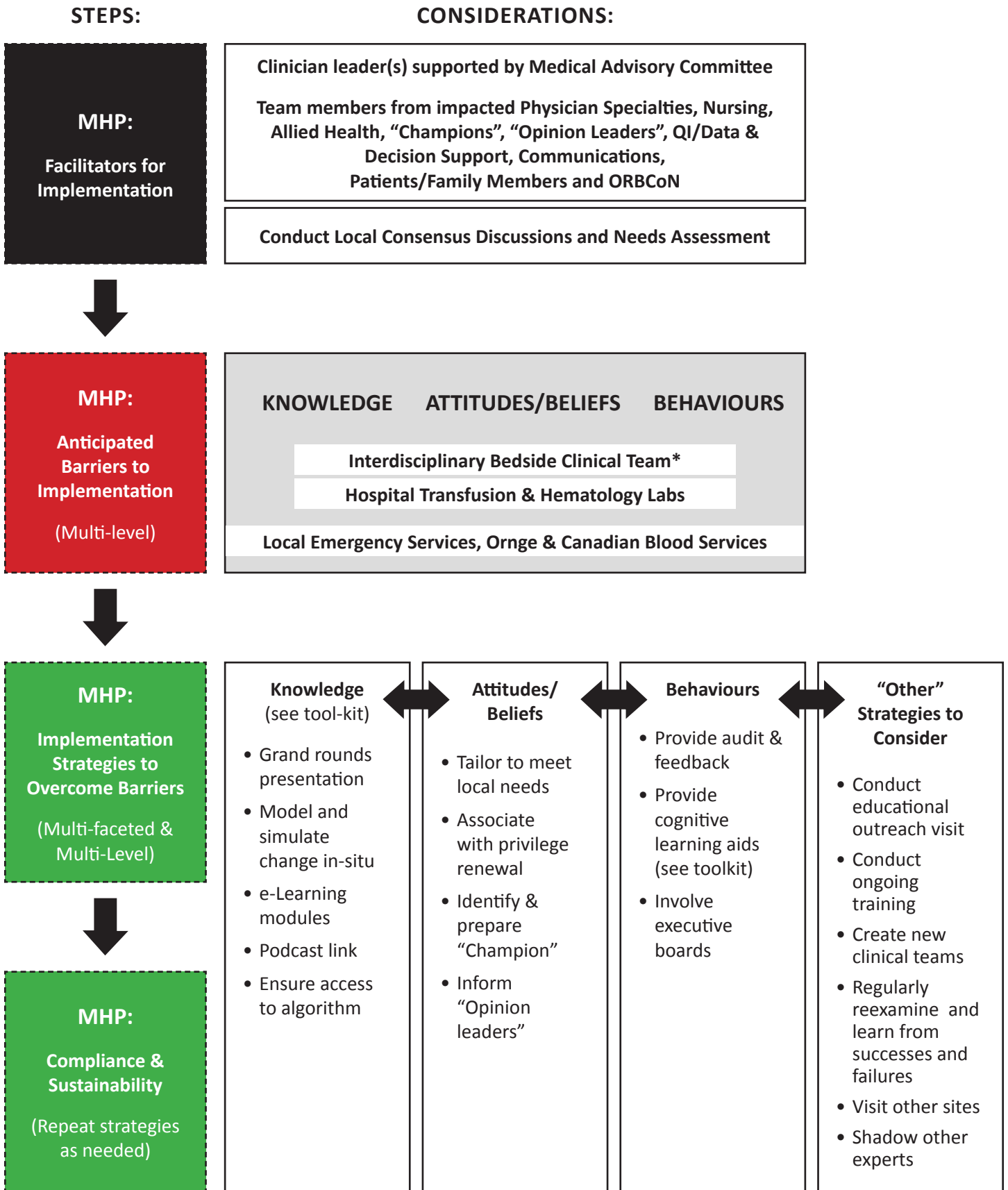
Guideline implementation strategies to overcome these barriers, include:

- conducting educational meetings
- auditing and providing feedback
- developing educational materials
- local consensus discussions to formally establish a need for a guideline and should include a staged change management process.^{2,3}

Examples of MHP implementation in adult and pediatric clinical settings^{4,5,6} reveal they can be lengthy (up to 12 months), usually initiated by a multi-disciplinary team and provide some reference to clinician education (e.g., “structured and directed educational conferences”) and access to related knowledge/materials. While there is no reported evidence-based approach for successful MHP implementation in a clinical care setting,⁷ the reader is referred to a number of available published tools to identify barriers and generate related implementation strategies for guideline adoption^{7,8,9,10,11,12}. Organizations may also benefit from incorporating an Ontario Health-endorsed staged quality improvement (QI) process or consultation with a guideline implementation expert.³ The goal of effective MHP education and local consensus building is guideline adoption, successful implementation and sustained utilization.



Figure 1: Educational strategies to facilitate implementation of a massive hemorrhage protocol in a clinical setting



*Composition of interdisciplinary team will vary according to contextual local needs (e.g., obstetrics, pediatrics etc.)



Figure 1 represents an example of an approach to incorporate educational strategies to address anticipated barriers to MHP implementation in any clinical setting, which at the local level is ideally supported by the Medical Advisory Committee and an executive sponsor. Leadership is crucial and the designated lead during MHP development and eventual activation must be clear. For successful implementation, a multi-disciplinary team that includes specialty specific clinicians and lab personnel associated with MHP activation must be identified. Opinion leaders should be engaged by this group. Consultation with the patient and family advisory committee to understand their experiences of care is recommended. At the local level, barriers to implementation must be identified through discussion with key stakeholders, which may include engagement of resource personnel outside of the hospital. Implementation strategies should be multi-faceted and go beyond simple audit and feedback and include e-learning and in-situ simulation, cognitive learning aids and involve local champions. The MHP toolkit provides resources for training and simulation drills on the operation of the MHP and for review of activations to ensure reinforcement, training, maintenance of competency and process improvement.

- A series of five training modules developed for key hospital personnel (Porters, MLTs, Nurses, Physicians) and communication /hospital administration [MHP elearning modules](#)
- Simulation Exercise: Three tabletop scenarios are presented in paper appendices and [video forms](#). An observational tool is provided, in appendix to support the debrief and prompt further discussion.
- A generic PowerPoint slide deck created to be used by hospitals to present (MAC/Grand Rounds) elements of the provincial MHP ([MHP slide deck](#)).
- Emergency Medicine Cases - A [podcast on the 7T's of Massive Hemorrhage Protocols](#). February, 2021.
- The reader is encouraged to refer to a publication by Powell et al. for a list of “Other” implementation strategies.⁸

Finally, a willingness and commitment to regular MHP re-evaluation and quality improvement will improve protocol compliance and sustainability. MHP activations should be reviewed, at least quarterly, by a multidisciplinary committee (Transfusion Committee / Medical Advisory Committee) for quality assurance purposes. The toolkit also provides a generic MHP algorithm for both non-definitive and definitive-care settings (adult and pediatric specific) as well as a patient handover tool.

Refer to the Quality Section 14.0 for guidance on provincial reporting and what MHP quality metrics to track.



Pediatric

Please refer to related pediatric considerations in section 15.0 and appendices for pediatric MHP cognitive aids (algorithm, dosing table, cooler dosing guides, equipment examples and infographic for heat loss reduction).



References

1. Cabana MD, Rand CS, Powe NR, Wu AW, Wilson MH, Abboud PA RH. Why Don ' t Physicians Follow A Framework for Improvement. *JAMA*. 1999;Vol 282(15):1458–65.
2. Delaforce A, Duff J, Munday J, Hardy J. Overcoming barriers to evidence-based patient blood management : a restricted review. *Implement. Sci.* [Internet]. 2020;15(6):1–13. Available from: <https://implementationscience.biomedcentral.com/track/pdf>
3. Health Quality Ontario. Getting Started Guide: Putting Quality Standards Into Practice [Internet]. 2017. Available from: <http://www.hqontario.ca/portals/0/documents/evidence/quality-standards/getting-started-guide-en.pdf>
4. Cotton BA, Dossett LA, Au BK, Nunez TC, Robertson AM, Young PP. Room for (Performance) improvement: Provider-related factors associated with poor outcomes in massive transfusion. *J. Trauma - Inj. Infect. Crit. Care*. 2009;67(5):1004–11.
5. Nunez TC, Young PP, Holcomb JB, Cotton BA. Creation, implementation, and maturation of a massive transfusion protocol for the exsanguinating trauma patient. *J. Trauma - Inj. Infect. Crit. Care*. 2010;68(6):1498–505.
6. Hendrickson JE, Shaz BH, Pereira G, Parker PM, Jessup P, Atwell F, et al. Implementation of a pediatric trauma massive transfusion protocol: One institution's experience. *Transfusion*. 2012;52(6):1228–36.
7. Waltz TJ, Powell BJ, Fernández ME, Abadie B, Damschroder LJ. Choosing implementation strategies to address contextual barriers: Diversity in recommendations and future directions. *Implement. Sci.* 2019;14(1):1–15.
8. Powell BJ, Waltz TJ, Chinman MJ, Damschroder LJ, Smith JL, Matthieu MM, et al. A refined compilation of implementation strategies: Results from the Expert Recommendations for Implementing Change (ERIC) project. *Implement. Sci.* 2015;10(21):1–14.
9. Michie S, van Stralen MM, West R. The behaviour change wheel: A new method for characterising and designing behaviour change interventions. *Implement. Sci.* 2011;6(42):1–11.
10. Cane J, O'Connor D, Michie S. Validation of the theoretical domains framework for use in behaviour change and implementation research. *Implement. Sci.* 2012;7(1):1–17.
11. Pesseau J, McCleary N, Lorencatto F, Patey A, Grimshaw J, Francis J. Action, Actor, Context, Target, Time (AACTT): A framework for specifying behaviour. *Implement. Sci.* 2019;14(1):102.
12. Damschroder LJ, Aron DC, Keith RE, Kirsh SR, Alexander JA, Lowery JC. Fostering implementation of health services research findings into practice: A consolidated framework for advancing implementation science. *Implement. Sci.* 2009;4(1):1–15.

