Outcome Evaluation Framework to Assess Knowledge/Beliefs/Barriers and Impact of KT interventions at the Individual & Organizational levels

DOMAINS	Outcome measures
STRUCTURE EVALUATION (process of care)	
Clinician/patient knowledge*	Quantitative • Knowledge questionnaire (based on the learning objectives of the KT intervention) to measure change in knowledge regarding a specific content area
Clinician/patient Attitudes, Barriers, utilization*	Survey questionnaires • ***Practice Style Trait Questionnaire[1]:*** to identify the practice style trait of clinicians and their overall attitude towards evidence-based practice • ***Pain Attitudes and Beliefs Scale[2,3]*** • ***Health Care Providers' Pain and Impairment Relationship Scale (HC-PAIRS)*** [4] • ***E-Base questionnaire incl. EPIC Scale[5]:*** to measure clinicians' belief in their ability to implement EBP, known as EBP self-efficacy. • ***Barriers to Research Utilization scale*** (BARRIERS; Funk et al., 1991; Carson & Plonczynski, 2008 review) • ***Evidence-Based Practice Questionnaire (Upton & Upton, 2006)*** • ***Evidence-Based Practice Attitude Scale (EBPAS***) (Aaron 2004, 2007, 2010, 2012; Patterson 2014) • ***Evidence-Based Practice Attitude and Utilization SurvEy (EBASE)*** (Leach 2008) • ***Theoretical Domain Framework (TDF)*** (Huijg 2014) • ***Communication Skill*** (Baig 2009) • ***SIROP – Engagement*** Qualitative • ***Theoretical Domains Framework (TDF)[6]:*** to identify clinicians' beliefs using interviews or focus groups (Michie 2005; Cane 2012; TDF Series 2012)
Organizational	Survey questionnaires • ***Context Assessment Index (CAI)*** (McCormack 2009) • ***Organizational readiness to change assessment (ORCA)*** (Helfrich, 2009) • ***Stage of Implementation Completion (SIC)*** (Chamberlain 2011) Framework • *Consolidated Framework for Implementation Research (CFIR)* (Damschroder, 2009) • *RE-AIM* (reach, efficacy, adoption, implementation and maintenance) (http://RE-AIM.org)

Clinician practice behaviours*	<u>Quantitative</u> • Electronic Health Records (EHRs) • Chart audit of clinician practices <u>Qualitative</u> • ***PERFECT Tool***[3]: standardized semi-structured questions regarding change and reasons for change in clinicians' practice behaviours • Clinical vignettes (behavioural simulation: proxy measure)
PROCESS EVALUATION	
Program Logic model or Proceed-Precede model	
OUTCOME EVALUATION	
Patient outcomes*	<u>Quantitative</u> • PROMIS : http://www.nihpromis.org/?AspxAutoDetectCookieSupport=1 • AHRQ : http://www.qualityindicators.ahrq.gov/ • Field J. Care Response8: Free, pragmatic system to help practices gather and report clinical outcome and patient satisfaction information https://www.care-response.com/CareResponse/home.aspx • Any outcome measure relevant to the content area (e.g. Oswestry, NDI, VAS scores, etc.) • Patient Satisfaction Questionnaire (from RAND Health) <u>Qualitative</u> • Semi-structured interviews

Framework adapted from Edith Strauss Rehabilitation Research Project (in Knowledge Translation). School of Physical and Occupational Therapy, McGill University

***Ideally these outcome measures should be used at baseline and at post-intervention, but can also be administered during the intervention**

1. Green, LA, Gorenflo, DW, Wyszewianski, L. Validating an instrument for selecting interventions to change physician practice patterns: A Michigan Consortium for Family Practice Research study. *Journal of Family Practice.* 2002 Nov; 51(11): 938-942.

2. Mutsaers JH1, Pool-Goudzwaard AL2, Ostelo RW3, Peters R4, Koes BW5, Verhagen AP6. The psychometric properties of the PABS-PT in neck pain patients: A validation study. Man Ther. 2014 Jan 18. pii: S1356-689X(13)00216-6.

3. Mutsaers JH1, Peters R, Pool-Goudzwaard AL, Koes BW, Verhagen AP. Psychometric properties of the Pain Attitudes and Beliefs Scale for Physiotherapists: a systematic review. Man Ther. 2012 Jun;17(3):213-8. doi: 10.1016/j.math.2011.12.010. Epub 2012 Jan 23.

4. Ostelo RW, Stomp-van den Berg SG, Vlaeyen JW,Wolters PM, de Vet HC. Health care provider's attitudes and beliefs towards chronic low back pain: the development of a questionnaire. Man Ther 2003;8:214e22.

5. Salbach, N. M. and Jaglal, S. B. (2011), Creation and validation of the evidence-based practice confidence scale for health care professionals. Journal of Evaluation in Clinical Practice, 17: 794–800. doi: 10.1111/j.1365-2753.2010.01478.x

Evidence based practice attitude scale (EBPS)

•Aarons GA, Cafri G, Lugo L, Sawitzky A. Expanding the domains of attitudes towards evidence-based practice: the evidence based practice attitude scale-50. Adm Policy Ment Health. 2012 Sep;39(5):331-40. doi: 10.1007/s10488-010-0302-3.

•Patterson Silver Wolf Adelv Unegv Waya DA, Dulmus CN, Maguin E, Fava N. Refining the Evidence-Based Practice Attitude Scale: An Alternative Confirmatory Factor Analysis. Soc Work Res. 2014 Mar;38(1):47-58.

Evidence-Based Practice Attitude and Utilization SurvEy (EBASE)

•Leach MJ, Gillham D. Evaluation of the Evidence-Based practice Attitude and utilization SurvEy for complementary and alternative medicine practitioners. J Eval Clin Pract. 2008; 14(5):792-8.

Theoretical Domain Framework (TDF)

Theoretical Domains Framework for behaviour change research: http://www.implementationscience.com/series/TDF

- Michie S, Johnston M, Abraham C, Lawton R, Parker D, Walker A: 'Psychological Theory' Group. Making psychological theory useful for implementing evidence based practice: a consensus approach. Quality & Safety in Health Care 2005, 14:26 - 33.
- Cane J, O'Connor D, Michie S. Validation of the theoretical domains framework for use in behaviour change and implementation research. Implementation Science. 2012;7(1):37. PubMed PMID: doi:10.1186/1748-5908-7-37.
- Huijg JM, Gebhardt WA, Dusseldorp E, Verheijden MW, van der Zouwe N, Middelkoop BJ, Crone MR. Measuring determinants of implementation behavior: psychometric properties of a questionnaire based on the theoretical domains framework. Implement Sci. 2014 Mar 19;9:33. doi: 10.1186/1748-5908-9-33.
- Huijg JM, Gebhardt WA, Crone MR, Dusseldorp E, Presseau J. Discriminant content validity of a theoretical domains framework questionnaire for use in implementation research. Implement Sci. 2014 Jan 15;9:11. doi: 10.1186/1748-5908-9-11.

Communication Skill

- Baig LA, Violato C, CrutcherRA. Assessing clinical communication skills in physicians: are the skills context specific or generalizable. BMC Medical Education 2009, 9:22

7. Menon A, Cafaro T, Loncaric D, Moore J, Vivona A, Wynands E, Korner-Bitensky N. Creation and validation of the PERFECT: a critical incident tool for evaluating change in the practices of health professionals. Journal of Evaluation in Clinical Practice. 2010 Dec; 16(6) 1170-1175.Refer to StrokEngine Assessment for more details on PERFECT: www.strokengine.ca

Reviews:
Chaudoir, S. Dugan AG. Barr CHI. Dissemination Measurement Compendium: A Systematic review provider, patient, and implementation. Review of structural, organizational innovation level measures. Connecticut Institute for Clinical and Translational Science. Implementation Science 2013, 8:22 http://www.implementationscience.com/content/8/1/22
Bishop A, Thomas E, Foster NE. Health care practitioners' attitudes and beliefs about low back pain: a systematic search and critical review of available measurement tools. Pain 2007;132(1e2):91e101.

Organizational
Context Assessment Index (CAI). McCormack B, McCarthy G, Wright J, Slater P, Coffey A. Development and testing of the Context Assessment Index (CAI). Worldviews Evid Based Nurs 2009;6(1):27-35. doi: 10.1111/j.1741-6787.2008.00130.x. Epub 2009 Jan 16.
Organizational readiness to change assessment (ORCA): Helfrich CD, Li YF, Sharp ND, Sales AE. Organizational readiness to change assessment (ORCA): development of an instrument based on the Promoting Action on Research in Health Services (PARIHS) framework. Implement Sci 2009 Jul 14;4:38. doi: 10.1186/1748-5908-4-38.8.
Stage of Implementation Completion (SIC): Chamberlain P, Brown H, Saldana L. Observational measure of implementation progress in community based settings: The Stages of implementation completion (SIC). Implementations Sci 2011, 6:116.
http://www.implementationscience.com/content/pdf/1748-5908-6-116.pdf
Damschroder L, Aron D, Keith R, Kirsh S, Alexander J, Lowery J. Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. Implementation Sci 2009;4:50. PubMed PMID: doi:10.1186/1748-5908-4-50.

Patient outcomes
- PROMIS : http://www.nihpromis.org/?AspxAutoDetectCookieSupport=1
- AHRQ : http://www.qualityindicators.ahrq.gov/
- Field J. Care Response: https://www.care-response.com/CareResponse/home.aspx