

## **Utilization of Clinical Practice Guidelines for the Management of Low Back Pain: A Review of the Literature.**

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Low back pain (LBP) is among the most common and costly medical conditions in the industrialized world and the leading cause of disability across the globe<sup>1</sup>. To date, treatment for acute and chronic low back pain has focused on pharmacological, operative and nonoperative approaches with very little standardization of care. In 2018, a viewpoint published in the *Lancet* called for a paradigm shift to address the complex public health problem and educate providers and policy makers on best practices for the management for LBP.<sup>2</sup> Among the authors' "call for action" was a challenge to change clinician behavior by "invest[ing] in implementation research to address evidence-practice gaps across all relevant health-care providers; and identify and implement effective behaviour change and training interventions to improve and integrate care."<sup>2</sup>

One response to this call to action was the development and publication of the most recent Clinical Practice Guidelines (CPG) on Interventions for the Management of Acute and Chronic Low Back Pain: Revision 2021 by George, et.al. from the Academy of Orthopedic Physical Therapy of the American Physical Therapy Association.<sup>3</sup> The purpose of a CPG is to reduce variability in treatment by providing evidence-based treatment recommendations for complex medical conditions, such as low back pain. CPGs can inform clinical decision making and influence the creation of clinical pathways for practitioners and health care systems that promote improved quality of care. However, care is only improved if guideline-adherence is a routine component of clinical practice.

The benefits of guideline-adherent care extend beyond the patient and clinician (limiting unsafe or ineffective interventions and reducing variability in clinical practice) to improve health outcomes in terms of decreased utilization and costs of healthcare.<sup>4</sup> In 2016, Hanney, et. al. published a systematic review of the literature regarding the influence of physical therapy guideline adherence on healthcare utilization and costs for treatment of low back pain. They concluded that overall adherence to clinical practice guidelines is linked with decreasing healthcare utilization and costs.<sup>4</sup> That same year, a study by Horn et. al. demonstrated that persons with neck pain who received guideline-adherent care had 54% fewer visits and 25% fewer prescription medications overall.<sup>5</sup>

Prior to the publication of the AOPT CPG in 2021, numerous international CPGs had been published with fairly consistent recommendations for screening, assessment and treatment approaches. In 2021, Longtin, et.al. summarized the recommendations from five of the highest-quality CPGs on LBP for rehabilitation professionals.<sup>6</sup> In addition to the recommendations for exercise, education and psychologically-informed practice the researchers added two underlying principles based on common components of the CPGs. The first principle is patient-centered care including shared decision making and the second principle is the use of validated outcome measures.<sup>6</sup>

All of the high-quality CPGs reviewed by Longtin et.al. included recommendations for the use of validated screening tools to identify “yellow flags” or psychosocial factors that could potentially impede progress in therapy, such as the STarTBackTool (SBT) and Orebro MSK Pain Screening Questionnaire (OMSPQ). However, none of the CPGs recommended any *specific or validated* outcome measure to track progress throughout the continuum of care. Research suggests that validated outcome measures are essential in the management of other common musculoskeletal pain conditions such as neck pain and knee osteoarthritis.<sup>7-9</sup> In regard to LBP, evidence supports that assessment should be multidimensional and comprehensive and include all domains of pain (physical, psychological and social), function, and quality of life.<sup>10</sup>

Despite the proliferation of CPGs related to the management of LBP, clinician adherence to guidelines remains poor.<sup>11</sup> The barriers to clinician adherence include lack of time, lack of awareness, decreased confidence and complexity of CPGs, to name a few.<sup>11</sup> Therefore, implementation of clinical practice guidelines involves more than dissemination of the latest research evidence. Implementation involves active strategies within a well-developed framework for both dissemination and integration of evidence into clinical practice. In a systematic review published in 2020, Zadro et.al. concluded that a multimodal intervention approach to implementation and dissemination, which included educating clinicians and staff, tailoring interventions and monitoring of performance, peer assessment and use of local opinion leaders was effective in improving physical therapist adherence to CPGs for various musculoskeletal conditions.<sup>12</sup>

Despite evidence that suggests a multimodal approach to implementation of CPGs is effective at changing clinician behavior, the strategic implementation approach may not have an effect on actual patient outcomes. Recently, Benecuik et.al. sought to determine whether a “multifaceted implementation strategy for neck pain and LBP CPGs was associated with (1) physical therapist perspectives, (2) physical therapist behaviors, and (3) patient outcomes.”<sup>13</sup> Using a non-randomized, cross-sectional stepped-wedge design, they found that, while clinician perspectives improved, data was inconclusive as to whether adherence or patient outcomes improved. This may have been partly due to lack of standardization of the electronic medical record (EMR) prior to implementation of the training and education.<sup>13</sup> Surprisingly, the authors also found that overall utilization of patient visits increased by 85% during the implementation study. Patient-reported neck and back pain and disability were assessed using the Neck Disability Index (NDI) and Oswestry Disability Index (ODI), respectively, and no differences were found in patient pain or disability outcomes with CPG implementation training.<sup>13</sup>

In studies investigating implementation strategies for CPG guideline adherence, lack of standardized screening tools and outcomes measures (covering multiple domains) could be contributing to the lack of documented patient improvements.<sup>16</sup> This does not explain over-utilization of visits, however. An increase in both healthcare expenses and utilization of services is associated with the duration of patient pain and lower baseline functional mobility.<sup>15</sup> In 2019, Pardasaney, et al., published a study examining whether Medicare expenditures varied significantly among diagnoses and baseline functional mobility. The researchers found expenses were higher for patients with lower baseline functional mobility.<sup>15</sup> Additionally, a study

conducted in 2018 by Lentz, et al., examined the utilization of healthcare services following physical therapy treatment for musculoskeletal pain. The study found 43.1% of patients sought at least one additional healthcare service within one year after physical therapy treatment. Baseline disability and a change in pain intensity were identified as significant predictors for additional healthcare utilization, including opioid prescriptions, injections, diagnostic testing, and emergency department visits.<sup>16</sup> In the Lentz study, the OSPRO-YF was found to be most useful in determining factors associated with psychological distress which affect patient outcomes.

In summary, there is strong evidence for the use of specific screening tools for identifying patients at risk for poor prognosis due to psychosocial factors, chronicity and disability. Researchers also promote the use of specific and validated outcomes measures to track progress within and between care episodes. Both of these recommendations are guideline-adherent and could be potentially cost effective to clinics and the healthcare system. These treatment behaviors, in addition to patient education, exercise and psychologically-informed practice could significantly lower the burden and cost of low back pain.

## References

1. Global Burden of Disease Collaborative Network. Global Burden of Disease Study 2017 (GBD 2017) results. Accessed January 11, 2021. <http://ghdx.healthdata.org/gbd-results-tool>
2. Buchbinder R, van Tulder M, Öberg B, et al. Low back pain: a call for action. *The Lancet*. 2018;391(10137):2384-2388. doi:10.1016/S0140-6736(18)30488-4.
3. George SZ, Fritz JM, Silfies SP, et al. Interventions for the management of acute and chronic low back pain: revision 2021: *J Orthop Sports Phys Ther*. 2021;51(11):CPG1-CPG60. doi:10.2519/jospt.2021.0304.
4. Hanney WJ, Masaracchio M, Liu X, Kolber MJ. The influence of physical therapy guideline adherence on healthcare utilization and costs among patients with low back pain: a systematic review of the literature. *PLoS One*. 2016;11(6):e0156799. doi:10.1371/journal.pone.0156799.
5. Horn ME, Brennan GP, George SZ, Harman JS, Bishop MD. Clinical outcomes, utilization, and charges in persons with neck pain receiving guideline adherent physical therapy. *Eval Health Prof*. 2016;39(4):421-434. doi:10.1177/0163278715583510.
6. Longtin C, Décary S, Cook CE, Tousignant-Laflamme Y. What does it take to facilitate the integration of clinical practice guidelines for the management of low back pain into practice? Part 1: a synthesis of recommendation. *Pain Pract*. 2021;21(8):943-954. doi:10.1111/papr.13033.

7. Lin I, Wiles L, Waller R, Goucke R, Nagree Y, Gibberd M, et al. What does best practice care for musculoskeletal pain look like? Eleven consistent recommendations from high-quality clinical practice guidelines: systematic review. *Br J Sports Med*. 2020;54(2):79–86. doi:10.1136/bjsports-2018-099878.
8. National Clinical Guideline Centre (UK). Osteoarthritis: Care and Management in Adults. London: National Institute for Health and Care Excellence (UK); February 2014.
9. Doyle E. Appraisal of clinical practice guideline: patellofemoral pain: clinical practice guidelines linked to the international classification of functioning, disability and health from the academy of orthopaedic physical therapy of the american physical therapy association. *J Physiother*. 2020;66(2):134. doi:10.1016/j.jphys.2020.02.008.
10. Tagliaferri SD, Miller CT, Owen PJ, et al. Domains of chronic low back pain and assessing treatment effectiveness: a clinical perspective. *Pain Pract*. 2020;20(2):211–225. doi:10.1111/papr.12846.
11. Zadro J, O’Keeffe M, Maher C. Do physical therapists follow evidence-based guidelines when managing musculoskeletal conditions? Systematic review. *BMJ Open*. 2019;9(10):e032329. doi: 10.1136/bmjopen-2019-032329.
12. Zadro JR, O’Keeffe M, Allison JL, Lembke KA, Forbes JL, Maher CG. Effectiveness of implementation strategies to improve adherence of physical therapist treatment choices to clinical practice guidelines for musculoskeletal conditions: systematic review. *Phys Ther*. 2020;100(9):1516–1541. doi:10.1093/ptj/pzaa101.
13. Slade SC, Kent P, Bucknall T, Molloy E, Patel S, Buchbinder R. Barriers to primary care clinician adherence to clinical guidelines for the management of low back pain: protocol of a systematic review and meta-synthesis of qualitative studies. *BMJ open*. 2015;5(4):e007265–e007265. doi:10.1136/bmjopen-2014-007265.
14. Beneciuk JM, Osborne R, Hagist MB, et al. American physical therapy association clinical practice guideline implementation for neck and low back pain in outpatient physical therapy: A nonrandomized, cross-sectional stepped-wedge pilot study. *J Orthop Sports Phys Ther*. 2022;52(2):113–123. doi:10.2519/jospt.2022.10545.
15. Pardasaney PK, Pope GC, Amico P, et al. Medicare outpatient physical therapy expenditures vary by diagnosis and functional mobility. *Phys Ther*. 2019;99(5):526–539. doi:10.1093/ptj/pzz023.
16. Lentz TA, Beneciuk JM, George SZ. Prediction of healthcare utilization following an episode of physical therapy for musculoskeletal pain. *BMC Health Serv Res*. 2018;18(1):648. doi:10.1186/s12913-018-3470-6.

17. Longtin C, Décary S, Cook CE, Tousignant-Laflamme Y. What does it take to facilitate the integration of clinical practice guidelines for the management of low back pain into practice? Part 2: a strategic plan to activate dissemination. *Pain Pract.* 2022;22(1):107-112. doi:10.1111/papr.13032.
18. Al Zoubi FM, Menon A, Mayo NE, Bussi eres AE. The effectiveness of interventions designed to increase the uptake of clinical practice guidelines and best practices among musculoskeletal professionals: a systematic review. *BMC Health Serv Res.* 2018;18(1):435. Published 2018 Jun 8. doi:10.1186/s12913-018-3253-0