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Implementation of musculoskeletal specialists in the emergency department at a level A1 VA Hospital during the SARS-CoV-2 pandemic



A 2017 systematic review and meta-analysis demonstrated the unwavering recurrence of low back pain (LBP) presentation in emergency departments (ED) [1]. In early 2020, the SARS-CoV-2 pandemic depleted resources as ED providers tended to COVID-19 patients. Simultaneously, pain management routine care was deemed “non-essential.”¹ These unattended pain complaints were likely to present to the overburdened ED. LBP in the ED has become increasingly common and challenging to manage [2]. Efficiently triaging non-emergent LBP may redirect and improve ED service utilization. Less traditional providers may be better suited to manage musculoskeletal (MSK) pain. Appropriate clinical acumen is key in preventing overutilization of diagnostic tests and target interventions for ED LBP patients [3]. Furthermore, current clinical practice guidelines recommend nonpharmacologic treatment for acute or subacute LBP [4].

Early conservative management for ED LBP has been associated with reduced pain and disability even when compared to patients with conservative outpatient physical therapy referrals [5]. Multiple studies point out integrated ED MSK-specialist (MSK-S) reduced length of stay, imaging utilization, and opioid administration rates [6], and improved overall ED metrics when compared to patients seen by typical ED providers [7]. Additionally, a 2018 systematic review and meta-analysis supports nonpharmacologic interventions for reduction of overall ED utilization and length of stay, and are effective in reducing pain in the ED with the potential to improve patient satisfaction, outcomes and quality of life [8]. The purpose of this correspondence is to describe how pandemic-related healthcare pressures led to an accelerated implementation of ED MSK-S in VA ED.

VA Palo Alto Health Care System (VAPAHCS) 2019 proprietary data revealed approximately 60% of cases presenting to the ED were urgent/emergent MSK complaints, primarily LBP. As the rate of COVID-19 increased, it became vital to preserve VAPAHCS ED resources by reducing ED MSK complaints. On March 31st, 2020, the Santa Clara Public Health Department ordered the postponement of non-essential healthcare. With urgency to fulfill veteran's needs and aid in controlling the pandemic, the immersion of MSK-S into the ED was accelerated. Acknowledgements to Clinton Daniels, DC, MS for providing consultation guidance and recommendations for research formatting and quality assurance of the final manuscript.

Integration into the ED went into effect on March 30, 2020 through June 8th, 2020. Designated MSK-S care was provided during peak hours by chiropractic and physical therapy departments.

Non-pharmacological treatment options were provided along with further management including specialty referral, diagnostic imaging, and/or laboratory panels (within the scope of MSK-S). A “hub-and-spoke” arrangement was developed and per protocol, initial ED triage assessed for any serious spinal pathology and a medical symptom evaluation was performed (“hub”). If diagnosed as MSK LBP, MSK-S referral was made with direct same-day hand-off (“spoke”). MSK bay included an examination table, evaluation tools, and passive modalities (depicted in Fig. 1).

Incorporation of MSK-S was shown, anecdotally, to be effective in treating acute MSK complaints as providers and patients were both able to benefit from the conservative options available in the ED. ED staff were receptive to the presence of the MSK-S for triage and management. From the perspective of ED practitioners, the use of hub-and-spoke design enhanced delivery of efficient hands-on care to veteran patients while maintaining appropriate, safe COVID-19 protocol within the ED.

Despite the pandemic, this hub-and-spoke model demonstrated cohesive interdisciplinary teamwork advancing patient care. MSK-S evaluation and management of MSK complaints allowed ED practitioners availability for patient care that involved other systemic complaints. In a truly integrated effort, ED providers aided in the management of the acute care patients. From ED administration viewpoint, a liaison between ED and other sub-specialties utilizing a hub-and-spoke paradigm shift, allows for the delivery of more efficient healthcare. With the positive feedback from administration, ED providers, staff, and patients, integrated MSK-S clinics continue to develop within VAPAHCS ED.

A 2018 review article by Kim et al. called for the use of a MSK-S in the ED and also provided clinical implementation guidance [9] for any healthcare systems looking to adopt a similar practice. Suggested solutions to help mitigate excessive LBP complaints in the ED include policy change on imaging referrals and opioid prescription as well as providing evidence-based care for non-serious LBP [2]. Previous publication has reported low concern of serious spinal pathology with ED LBP presentation with poor accuracy of red flag symptom screening [10], however, more recent literature suggests that compared to typical primary care presentations, LBP in the ED has noticeably higher prevalence of serious spinal pathologies [3]. For this and other reasons, ED LBP should still be considered case by case and referred for advanced imaging appropriately [10]. Further investigation into the use of nonpharmacologic interventions for optimizing ED pain management is warranted [8].

This correspondence describes the COVID-19 accelerated implementation of MSK-S within a VA ED. Although the results within VAPAHCS were promising, reproduction of similar integration across other healthcare systems is unknown. Future studies are needed to assess implementation of MSK-S within the ED including objective outcomes of patient care and other qualitative and quantitative healthcare measurements.

¹“definition of non-essential” and “urgent/emergent” is beyond the scope of this article.



Fig. 1. Example of MSK bay treatment area with supplied equipment resources including an examination table, inclinometer, reflex hammer, interferential current machine, ice, et cetera.

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