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Dear ’25 AI/ML demonstration project team,

I am happy to support the proposal “TPS-Select: An Artificial Intelligence Approach to Guide Transitional Pain Service Referrals for UCSF Neuro-Spine Patients” led by myself and Dr. Andrew Bishara.

I am the Medical Director of the UCSF Center for Pain Medicine and in the Department of Anesthesia and Perioperative Care the Chief of the Division of Pain Medicine.

Our pain center is a robust clinical practice with >20 physicians from diverse backgrounds: anesthesia, neurology, family medicine, physiatry, emergency medicine, and more. Other vital providers within our practice include pain psychologists, pain pharmacists, and nurse practitioners. We aim to provide comprehensive care to patients —employing pharmacologic, procedural, psychological, and other treatment modalities— to treat a variety of pain conditions. One clinical scenario we are often faced with is a patient with chronic pain or pain vulnerability who is either about to undergo or has recently undergone a surgical procedure. While we currently see a great deal of these high-touch patients, including pre-operatively, there is no standardized way to identify them prior to surgery. It may be the surgical clinic, the Prepare clinic, or the inpatient team reaching out for advice on how to help manage challenging post-operative pain and post-discharge sub-acute pain. In the ideal state, patients at risk of challenging peri-operative pain control and chronic post-surgical pain are identified in advance of surgery and referred to a specialty team, to address modifiable risk factors prior to admission. Absent such a system, such patients have increased inpatient LOS related to pain as well as other issues, such as chronic post-surgical pain and increased post-surgical opioid use.

The team at the UCSF Center for Pain Medicine seeing these patients is a Transitional Pain Service (TPS), a multi-disciplinary team aiming to decrease chronic post-surgical pain and post-surgical opioid use. The work of this team includes optimization of patients pre-operatively. This optimization may be in psychological factors, such as depression, anxiety, or catastrophizing; it may also be pharmacologic, such as in opioid weaning; always, the work involves intensive education in coping skills, principles of pain management, and expectations for recovery. Individualized pain plans may also be developed. This work is extremely resource-intensive, including for providers who are already in very high demand but with limited access, such as our pain psychologists. As such, a need is to ensure that the patients most likely to benefit from TPS are seen by TPS.

This work is also more effective when patients are seen earlier in their course, as it is easier to build a relationship with patients and to adjust modifiable factors the sooner they are seen. I.e., it is preferable to see patients pre-operatively and not when in the middle of a prolonged hospitalization for a pain crisis or when discharged and running out of the prescribed discharge medications. As not just Medical Director of the clinic but a physician who works on the inpatient Acute Pain Service and in the pain clinic, I routinely see these scenarios, with care team members wondering why there had been no prior engagement of a pain specialist or

better care coordination. A reason for the imperfect current system is that there is currently no standardized way of pre-operatively identifying these vulnerable patients. While there are some risk stratification systems, such as O-NET+, these guides are imperfect, with missed patients and false positive referrals, and other services, such as surgical services, do not have the bandwidth to explore them when assessing surgical candidacy.

UCSF Health would benefit from a TPS seeing the right patients at the right time prior to their surgery. The anticipated result would be not only a decrease in chronic post-surgical pain and post-surgical opioid use but also decreased pain-related LOS and pain re-admissions. Other centers, such as Toronto General Hospital in Canada and VS in the USA (e.g., Salt Lake City), have shown tremendous benefit with TPS services, but no one has cracked the code for how to get the right patient seen at the right time, especially with the resource constraints of a system such as ours. As such, I am excited to partner with Dr. Bishara on using AI to identify patients who would benefit from early engagement with a specialized pain team.

The focus of this project will also be on neurosurgery patients. It is this specialty that refers more patients to pain medicine than any other medical or surgical specialty, as I noted on a recent review of Slicer Dicer referral data for our clinic. We also refer quite often to neurosurgery. Pain Medicine faculty have also previously seen patients at the Spine Center, as part of an integrated care model. Pain and neurosurgery faculty have also published on best practices in pain management after spine surgery. Recent publications by myself and colleagues in neurosurgery include “What are the risk factors for continued opioid use in patients following sine surgery” in The Spine Journal and “Racial differences in postoperative opioid prescribing practices in spine surgical patients” published in Neurosurgery. As such, it is a natural fit that we focus our AI-assisted TPS program on the care of patients shared with neurosurgery, with whom we have a history of and ongoing close collaboration.

Thanks for your consideration.

-Chris Abrecht

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