



## Sesh Mudumbai

Associate Professor of Anesthesiology, Perioperative and Pain Medicine (MSD)

### Bio

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#### BIO

After completing both a Patient Safety Fellowship and a Masters in Health Services Research at Stanford, Dr. Mudumbai joined the faculty as an Assistant Professor in the Department of Anesthesiology, Perioperative, and Pain Medicine in 2014. Dr. Mudumbai is an outcomes and health services researcher who works to integrate his clinical, administrative, and research roles. Dr. Mudumbai's main research interests are in translational research: 1) optimizing therapeutic strategies and reducing adverse outcomes related to medication management, particularly opioids; and 2) measuring and improving the quality of perioperative and pain management.

#### ACADEMIC APPOINTMENTS

- Associate Professor - University Medical Line, Anesthesiology, Perioperative and Pain Medicine
- Member, Cardiovascular Institute

#### ADMINISTRATIVE APPOINTMENTS

- Director for Clinical Informatics Systems and Perioperative Analytics, VA Palo Alto HCS, (2021- present)
- Transfusion Committee, VA Palo Alto HCS, (2015- present)
- Medical Director for VISN 21 Clinical Informatics Systems and Perioperative Analytics, VISN 21, Veterans Health Administration; <https://www.visn21.va.gov/>, (2014-2021)

#### HONORS AND AWARDS

- Junior Faculty Award, Association of University Anesthesiologists (2019)
- Kosaka Finalist, Clinical Research, International Anesthesia Research Society (2019)
- Best in Category, International Anesthesia Research Society (2012)

#### BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, American Society Of Anesthesiologists (2006 - present)
- Member, The American Society of Anesthesiology Committee on Electronic Media & Information Technology (2015 - present)
- Member, American Society of Regional Anesthesia & Pain Medicine (2016 - present)
- Member, Association of University Anesthesiologists (2018 - present)

#### PROFESSIONAL EDUCATION

- Patient Safety Fellowship, Stanford University , Patient Safety and Medical Simulation
- MS, Stanford University , Health Services Research

- Residency, Department of Anesthesiology, State University of New York -Health Science Center at Brooklyn (SUNY-HSCAB) and Mount Sinai Medical Center , Anesthesiology
- MD, State University of New York -Health Science Center at Brooklyn (SUNY-HSCAB) , Medical Education

## LINKS

- Mudumbai Lab Site: <https://mudumbailab.stanford.edu/>

## Research & Scholarship

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### CURRENT RESEARCH AND SCHOLARLY INTERESTS

Our research team's mission is to optimize therapeutic practices, reduce opioid-related risks, and improve perioperative and pain management.

We primarily study the psychological, social, biological, and systemic factors that affect opioid use. We are also particularly excited about the use of informatics and digital health tools in pain management and overall health. Our aim is to optimize therapeutic strategies for pain and perioperative care to improve clinical effectiveness and inform public policy.

We are actively studying the use of multiomics to predict and treat Opioid Use Disorder.

## Publications

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### PUBLICATIONS

- **Evaluating Large Language Model Performance in Generating Clinically Relevant Intensive Care Unit Discharge Summaries.** *A&A practice*  
Mudumbai, S. C., Chung, P., Chen, J. Q., Litake, O., Regala, S., Madhok, J., Krause, M., Pearl, R. G., Boateng Evans, A., Gabriel, R. A.  
2025; 19 (9): e02057
- **Beyond the 'black box': choosing interpretable machine learning models for predicting postoperative opioid trends.** *Anaesthesia*  
Mudumbai, S. C., Baurley, J., Coombes, C. E., Stafford, R. S., Mariano, E. R.  
2025
- **Use of natural language processing method to identify regional anesthesia from clinical notes.** *Regional anesthesia and pain medicine*  
Graham, L. A., Illarmo, S. S., Wren, S. M., Odden, M. C., Mudumbai, S. C.  
2024
- **Opioid use in cancer patients compared with non-cancer pain patients in a veterans population.** *JNCI cancer spectrum*  
Mudumbai, S. C., He, H., Chen, J. Q., Kapoor, A., Regala, S., Mariano, E. R., Stafford, R. S., Abnet, C. C., Pfeiffer, R. M., Freedman, N. D., Etemadi, A.  
2024
- **Linking Preoperative and Intraoperative Data for Risk Prediction More Answers or Just More Data?** *JAMA NETWORK OPEN*  
Mudumbai, S. C., Rashidi, P.  
2021; 4 (3): e212547
- **Overdose Risk Associated with Opioid Use upon Hospital Discharge in Veterans Health Administration Surgical Patients.** *Pain medicine (Malden, Mass.)*  
Mudumbai, S. C., Lewis, E. T., Oliva, E. M., Chung, P. D., Harris, B. n., Trafton, J. n., Mariano, E. R., Wagner, T. n., Clark, J. D., Stafford, R. S.  
2018
- **Perioperative and ICU Healthcare Analytics within a Veterans Integrated System Network: a Qualitative Gap Analysis.** *Journal of medical systems*  
Mudumbai, S. n., Ayer, F. n., Stefanko, J. n.  
2017; 41 (8): 118
- **Time-to-Cessation of Postoperative Opioids: A Population-Level Analysis of the Veterans Affairs Health Care System.** *Pain medicine*  
Mudumbai, S. C., Oliva, E. M., Lewis, E. T., Trafton, J., Posner, D., Mariano, E. R., Stafford, R. S., Wagner, T., Clark, J. D.

2016; 17 (9): 1732-1743

- **Optimal multimodal analgesia combinations to reduce pain and opioid use following non-cardiac surgery: an instrumental variable analysis.** *Regional anesthesia and pain medicine*  
Graham, L. A., Illarmo, S., Wren, S. M., Mudumbai, S. C., Odden, M. C.  
2025
- **Rapid, Safe, and Efficient Reduction in the Carbon Footprint of Preoperative Travel: A Nationwide Study.** *Anesthesiology*  
Raghunathan, K., Wongsripuemtet, P., Barbeito, A., Pepin, M. J., Krishnamoorthy, V., Ohnuma, T., Cobert, J., Mudumbai, S., Watwe, R., Bryan, W. T.  
2025; 143 (1): 209-212
- **Influence of Social Support and Personality Traits on Digital Health Technology Adoption Among U.S. Veterans: A Mixed-Methods Study.** *Military medicine*  
Bolus, M., Chen, J. Q., Regala, S., Kapoor, A., Barbeito, A., Raghunathan, K., Stafford, R. S., Mariano, E. R., Mudumbai, S. C.  
2025
- **Evaluating Large Language Model Performance in Generating Clinically Relevant ICU Discharge Summaries Using MIMIC-III and G-Eval**  
Mudumbai, S., Chung, P., Chen, J., Litake, O., Regala, S., Madhok, J., Krause, M., Pearl, R., Boateng, A., Gabriel, R.  
LIPPINCOTT WILLIAMS & WILKINS.2025: 153-155
- **Sharing Anesthetic Records with Patients: An Opportunity to Embrace Transparency.** *Anesthesiology*  
Xie, J., Gessner, D., Ramaswamy, P., Tan, J. M., Guffey, P., Gálvez Delgado, J., Lonsdale, H., Kato, M., Taicher, B. M., Zhang, D. A., Wecksell, M., Asher, D., Simpao, et al  
2025; 142 (5): 950-951
- **Machine Learning Composite Variable for Pre-Operative Volume Status in Orthotopic Liver Transplant Predicts Postoperative Length of Stay**  
Coombes, C., Ruan, A., Mudumbai, S., Chen, M., Kloosterboerl, A.  
LIPPINCOTT WILLIAMS & WILKINS.2025: 460-462
- **Lessons learned from establishing a transitional pain service in the USA.** *Regional anesthesia and pain medicine*  
Harrison, T. K., Mariano, E. R., Clark, J. D., Mudumbai, S. C., Hunter, O. O.  
2025; 50 (2): 184-187
- **Balancing efficiency and patient safety: lessons from the trend to outpatient lower joint arthroplasty.** *Anaesthesia*  
Dixit, A. A., Li, J., Mudumbai, S.  
2025
- **A Rapid Reduction in Carbon Emissions before Surgery is Feasible: A Nationwide Natural Experiment**  
Karanth, S., Raghunathan, K., Barbeito, A., Pepin, M., Corcoran, C., Cobert, J., Mudumbai, S., Karanth, S., Bryan, W.  
LIPPINCOTT WILLIAMS & WILKINS.2024: 759-760
- **Variations in Current Practice and Protocols of Intraoperative Multimodal Analgesia: A Cross-Sectional Study Within a Six-Hospital US Health Care System.** *Anesthesia and analgesia*  
Graham, L. A., Illarmo, S. S., Wren, S. M., Odden, M. C., Mudumbai, S. C.  
2024
- **Artificial Intelligence in Perioperative Care: Opportunities and Challenges.** *Anesthesiology*  
Han, L., Char, D. S., Aghaeepour, N.  
2024; 141 (2): 379-387
- **Public Health Informatics and the Perioperative Physician: Looking to the Future.** *Anesthesia and analgesia*  
Mudumbai, S. C., Gabriel, R. A., Howell, S., Tan, J. M., Freundlich, R. E., Shah, V. O., Kendale, S., Poterack, K., Rothman, B. S.  
2024; 138 (2): 253-272
- **More Than a Perioperative Surgical Home: An Opportunity for Anesthesiologists to Advance Public Health.** *Seminars in cardiothoracic and vascular anesthesia*  
Coffman, C. R., Leng, J. C., Ye, Y., Hunter, O. O., Walters, T. L., Wang, R., Wong, J. K., Mudumbai, S. C., Mariano, E. R.  
2023: 10892532231200620
- **Identifying Strategies to Reduce Low-Value Preoperative Testing for Low-Risk Procedures: a Qualitative Study of Facilities with High or Recently Improved Levels of Testing.** *Journal of general internal medicine*

- Harris, A. H., Finlay, A. K., Hagedorn, H. J., Manfredi, L., Jones, G., Kamal, R. N., Sears, E. D., Hawn, M., Eisenberg, D., Pershing, S., Mudumbai, S. 2023
- **Barriers to Implementation of Telehealth Pre-anesthesia Evaluation Visits in the Department of Veterans Affairs.** *Federal practitioner : for the health care professionals of the VA, DoD, and PHS*  
Barbeito, A., Raghunathan, K., Connolly, S., Mariano, E. R., Blitz, J., Stafford, R. S., Mudumbai, S.  
2023; 40 (7): 210-217a
  - **The Association between Alcohol Use Disorder and 1-year Mortality after Total Knee Arthroplasty in the United States Veterans Health Administration- A Retrospective Cohort Study**  
Costin, B., Raghunathan, K., Ohnuma, T., Krishnamoorthy, V., Barbeito, A., Rolfzen, M., Bryan, W., Pepin, M., Mudumbai, S., Blitz, J., Pietrobon, R., Bartels, K.  
LIPPINCOTT WILLIAMS & WILKINS.2023: 538
  - **Changing a clinical pathway to increase spinal anesthesia use for elective hip arthroplasty: a single-centre historical cohort study.** *Canadian journal of anaesthesia = Journal canadien d'anesthesie*  
Mulumba, K. Y., Mariano, E. R., Leng, J. C., Kou, A., Hunter, O. O., Tamboli, M., Memtsoudis, S. G., Mudumbai, S. C.  
2022
  - **Frequency and costs of low-value preoperative tests for patients undergoing low-risk procedures in the veterans health administration.** *Perioperative medicine (London, England)*  
Harris, A. H., Bowe, T., Kamal, R. N., Sears, E. D., Hawn, M., Eisenberg, D., Finlay, A. K., Hagedorn, H. J., Mudumbai, S.  
2022; 11 (1): 33
  - **Single-center cross-sectional study of high opioid prescribing among U.S. veterans with peripheral arterial disease.** *Regional anesthesia and pain medicine*  
Stern, J. R., Kou, A., Kapoor, A., Regala, S., He, H., Stafford, R. S., Mariano, E. R., Mudumbai, S. C.  
2022
  - **A Comparative Utility Score for Digital Health Tools.** *Journal of medical systems*  
Burton, J. C., Regala, S., Williams, D., Desai, A., He, H., Aalami, O., Mariano, E. R., Stafford, R. S., Mudumbai, S. C.  
2022; 46 (6): 34
  - **Machine Learning Can Identify Geographic Disparities in Opioid Overdose Before and After the COVID-19 Pandemic**  
He, H., Kou, A., Kapoor, A., Regala, S., Raghunathan, K., Mariano, E. R., Stafford, R. S., Mudumbai, S.  
LIPPINCOTT WILLIAMS & WILKINS.2022: 708-709
  - **Buprenorphine Prescribing During the COVID-19 Pandemic: An Initial Disparities Analysis from the California Opioid Overdose Surveillance Dashboard**  
He, H., Regala, S., Kapoor, A., Raghunathan, K., Mariano, E. R., Stafford, R. S., Mudumbai, S.  
LIPPINCOTT WILLIAMS & WILKINS.2022: 437-438
  - **Effects of Buprenorphine Dose and Therapeutic Engagement on Illicit Opiate Use in Opioid Use Disorder Treatment Trials.** *International journal of environmental research and public health*  
Bergen, A. W., Baurley, J. W., Ervin, C. M., McMahan, C. S., Bible, J., Stafford, R. S., Mudumbai, S. C., Saxon, A. J.  
2022; 19 (7)
  - **Naloxone Dispensing in Patients at Risk for Opioid Overdose After Total Knee Arthroplasty Within the Veterans Health Administration.** *Federal practitioner : for the health care professionals of the VA, DoD, and PHS*  
Lahidji, S., Oliva, E., Jarzebowski, M., Mudumbai, S. C., Lake, T., Krishnamoorthy, V., Raghunathan, K., Bryan, W. E.  
2022; 39 (2): 64-69
  - **Impact of the Veterans Affairs National Abdominal Aortic Screening Program**  
Garcia-Toca, M., Hlatky, M. A., Dalman, R. L., Itoga, N., Kou, A., Mudumbai, S., Lee, J. T., Aalami, O.  
MOSBY-ELSEVIER.2021: E48-E49
  - **Variability and Costs of Low-Value Preoperative Testing for Cataract Surgery Within the Veterans Health Administration.** *JAMA network open*  
Mudumbai, S. C., Pershing, S., Bowe, T., Kamal, R. N., Sears, E. D., Hawn, M. T., Eisenberg, D., Finlay, A. K., Hagedorn, H., Harris, A. H.  
2021; 4 (5): e217470

- **Naloxone Dispensing in Patients at Risk for Opioid Overdose after Total Knee Arthroplasty within the Veterans Health Administration**  
Jarzebowski, M., Lahidji, S., Oliva, E., Mudumbai, S., Lake, T., Krishnamoorthy, V., Raghunathan, K., Bryan, W. E.  
LIPPINCOTT WILLIAMS & WILKINS.2021: 640-642
- **Overdose Risk and Naloxone Dispensing around Total Knee Arthroplasty: Trends in the VHA between 2010 and 2016**  
Lahidji, S., Oliva, E., Mudumbai, S., Bryan, W. E., Lake, T., Krishnamoorthy, V., Raghunathan, K.  
LIPPINCOTT WILLIAMS & WILKINS.2020: 601-602
- **Implementation of a patient-specific tapering protocol at discharge decreases total opioid dose prescribed for 6 weeks after elective primary spine surgery.** *Regional anesthesia and pain medicine*  
Joo, S. S., Hunter, O. O., Tamboli, M., Leng, J. C., Harrison, T. K., Kassab, K., Keeton, J. D., Skirboll, S., Tharin, S., Saleh, E., Mudumbai, S. C., Wang, R. R., Kou, et al  
2020
- **Prevalence and Factors Associated With Low-Value Preoperative Testing for Patients Undergoing Carpal Tunnel Release at an Academic Medical Center.** *Hand (New York, N.Y.)*  
Ding, Q., Trickey, A. W., Mudumbai, S., Kamal, R. N., Sears, E. D., Harris, A. H.  
2020: 1558944720906498
- **An ultrasound-guided fascia iliaca catheter technique does not impair ambulatory ability within a clinical pathway for total hip arthroplasty.** *Korean journal of anesthesiology*  
Mudumbai, S. C., Kim, T. E., Howard, S. K., Giori, N. J., Woolson, S. n., Ganaway, T. n., Kou, A. n., King, R. n., Mariano, E. R.  
2020; 73 (3): 267
- **Collateral Damage as Crises Collide: Perioperative Opioids in the COVID-19 Era.** *Pain medicine (Malden, Mass.)*  
Mudumbai, S. C., Mariano, E. R., Clark, J. D., Stafford, R. S.  
2020
- **An analysis of perioperative eye injury in a veterans affairs inpatient surgical population.** *Journal of clinical anesthesia*  
Tamboli, M. n., Kou, A. n., Wang, R. R., Walters, T. L., Mudumbai, S. C., Mariano, E. R.  
2020; 66: 109913
- **Making the case for a procedure-specific definition of chronic postoperative opioid use.** *Regional anesthesia and pain medicine*  
Tamboli, M. n., Mariano, E. R., El-Boghdady, K. n., Elkassabany, N. M., Kou, A. n., Chung, P. n., Mudumbai, S. C.  
2020
- **Outcomes of Ambulatory Upper Extremity Surgery Patients Discharged Home with Perineural Catheters from a Veterans Health Administration Medical Center** *PAIN MEDICINE*  
King, R., Mariano, E. R., Yajnik, M., Kou, A., Kim, T., Hunter, O. O., Howard, S. K., Mudumbai, S. C.  
2019; 20 (11): 2256–62
- **Variability and Costs of Low-Value Preoperative Testing for Carpal Tunnel Release Surgery.** *Anesthesia and analgesia*  
Harris, A. H., Meerwijk, E. L., Kamal, R. N., Sears, E. D., Hawn, M., Eisenberg, D., Finlay, A. K., Hagedorn, H., Mudumbai, S.  
2019; 129 (3): 804-811
- **Variability and Costs of Low-Value Preoperative Testing for Carpal Tunnel Release Surgery.** *Anesthesia and analgesia*  
Harris, A. H., Meerwijk, E. L., Kamal, R. N., Sears, E. D., Hawn, M., Eisenberg, D., Finlay, A. K., Hagedorn, H., Mudumbai, S.  
2019
- **IMPLEMENTATION OF A DISTRIBUTED RESEARCH NETWORK VIRTUAL DATA WAREHOUSE FOR A MULTI-CENTER OBSERVATIONAL STUDY**  
Mudumbai, S., Wu, F., Chambers, J., Kapoor, A., Lee, J. S., Clark, D., Mariano, E. R., Stafford, R. S.  
LIPPINCOTT WILLIAMS & WILKINS.2019: 925–26
- **Variation in Surgeons' Requests for General Anesthesia When Scheduling Carpal Tunnel Release.** *Hand (New York, N.Y.)*  
Harris, A. H., Meerwijk, E. L., Kamal, R. N., Sears, E. D., Hawn, M., Eisenberg, D., Finlay, A. K., Hagedorn, H., Marshall, N., Mudumbai, S. C.  
2019: 1558944719828006
- **Peripheral nerve blocks are not associated with increased risk of perioperative peripheral nerve injury in a Veterans Affairs inpatient surgical population** *REGIONAL ANESTHESIA AND PAIN MEDICINE*  
Yajnik, M., Kou, A., Mudumbai, S. C., Walters, T. L., Howard, S. K., Kim, E., Mariano, E. R.

2019; 44 (1): 81–85

- **Impact of an Opioid Safety Initiative on Patients Undergoing Total Knee Arthroplasty: A Time Series Analysis.** *Anesthesiology*  
Chen, Q. n., Hsia, H. L., Overman, R. n., Bryan, W. n., Pepin, M. n., Mariano, E. R., Mudumbai, S. C., Buchheit, T. n., Krishnamoorthy, V. n., Good, C. B., Brookhart, M. A., Raghunathan, K. n.  
2019; 131 (2): 369–80
- **Five-year follow-up to assess long-term sustainability of changing clinical practice regarding anesthesia and regional analgesia for lower extremity arthroplasty.** *Korean journal of anesthesiology*  
Tamboli, M. n., Leng, J. C., Hunter, O. O., Kou, A. n., Mudumbai, S. C., Memtsoudis, S. G., Walters, T. L., Lochbaum, G. M., Mariano, E. R.  
2019
- **Outcomes of Ambulatory Upper Extremity Surgery Patients Discharged Home with Perineural Catheters from a Veterans Health Administration Medical Center.** *Pain medicine (Malden, Mass.)*  
King, R. n., Mariano, E. R., Yajnik, M. n., Kou, A. n., Kim, T. E., Hunter, O. O., Howard, S. K., Mudumbai, S. C.  
2019
- **Peripheral nerve blocks are not associated with increased risk of perioperative peripheral nerve injury in a Veterans Affairs inpatient surgical population.** *Regional anesthesia and pain medicine*  
Yajnik, M. n., Kou, A. n., Mudumbai, S. C., Walters, T. L., Howard, S. K., Edward Kim, T. n., Mariano, E. R.  
2019; 44 (1): 81–85
- **Perioperative Opioid Prescribing Patterns and Readmissions After Total Knee Arthroplasty in a National Cohort of Veterans Health Administration Patients.** *Pain medicine (Malden, Mass.)*  
Mudumbai, S. C., Chung, P. n., Nguyen, N. n., Harris, B. n., Clark, J. D., Wagner, T. H., Giori, N. J., Stafford, R. S., Mariano, E. R.  
2019
- **Practice Patterns in Perioperative Nonopioid Analgesic Administration by Anesthesiologists in a Veterans Affairs Hospital.** *Pain medicine (Malden, Mass.)*  
Kwong, J. Z., Mudumbai, S. C., Hernandez-Boussard, T. n., Popat, R. A., Mariano, E. R.  
2019
- **Spinal anesthesia increases the rate of opioid-free recovery after transurethral urologic surgery.** *Journal of clinical anesthesia*  
Tien, M. n., Kou, A. n., Leppert, J. T., Mariano, E. R., Mudumbai, S. C.  
2019; 60: 109–10
- **A Multidisciplinary Patient-Specific Opioid Prescribing and Tapering Protocol Is Associated with a Decrease in Total Opioid Dose Prescribed for Six Weeks After Total Hip Arthroplasty.** *Pain medicine (Malden, Mass.)*  
Tamboli, M. n., Mariano, E. R., Gustafson, K. E., Briones, B. L., Hunter, O. O., Wang, R. R., Harrison, T. K., Kou, A. n., Mudumbai, S. C., Kim, T. E., Indelli, P. F., Giori, N. J.  
2019
- **Development and validation of a predictive model for American Society of Anesthesiologists Physical Status.** *BMC health services research*  
Mudumbai, S. C., Pershing, S. n., Bowe, T. n., Kamal, R. N., Sears, E. D., Finlay, A. K., Eisenberg, D. n., Hawn, M. T., Weng, Y. n., Trickey, A. W., Mariano, E. R., Harris, A. H.  
2019; 19 (1): 859
- **Are Case Volume and Facility Complexity Level Associated With Postoperative Complications After Hip Fracture Surgery in the Veterans Affairs Healthcare System?** *CLINICAL ORTHOPAEDICS AND RELATED RESEARCH*  
Wong, J. K., Kim, T., Mudumbai, S. C., Memtsoudis, S. G., Giori, N. J., Howard, S. K., Oka, R. K., King, R., Mariano, E. R.  
2019; 477 (1): 177–90
- **A pragmatic approach to evaluating new techniques in regional anesthesia and acute pain medicine** *PAIN MANAGEMENT*  
Mudumbai, S. C., Auyong, D. B., Memtsoudis, S. G., Mariano, E. R.  
2018; 8 (6): 475–85
- **Low Value Preoperative Testing for Carpal Tunnel Release in the Veterans Health Administration**  
Sox-Harris, A., Meerwijk, E. L., Kamal, R. N., Sears, E., Finlay, A. K., Hawn, M. T., Eisenberg, D., Mudumbai, S.  
ELSEVIER SCIENCE INC.2018: E32
- **Are Case Volume and Facility Complexity Level Associated With Postoperative Complications After Hip Fracture Surgery in the Veterans Affairs Healthcare System?** *Clinical orthopaedics and related research*

- Wong, J. K., Kim, T. E., Mudumbai, S. C., Memtsoudis, S. G., Giori, N. J., Howard, S. K., Oka, R. K., King, R., Mariano, E. R.  
2018
- **Persistent Postoperative Opioid Use in Older Head and Neck Cancer Patients.** *Otolaryngology--head and neck surgery : official journal of American Academy of Otolaryngology-Head and Neck Surgery*  
Saraswathula, A. n., Chen, M. M., Mudumbai, S. C., Whittemore, A. S., Divi, V. n.  
2018: 194599818778276
  - **A pragmatic approach to evaluating new techniques in regional anesthesia and acute pain medicine.** *Pain management*  
Mudumbai, S. C., Auyong, D. B., Memtsoudis, S. G., Mariano, E. R.  
2018
  - **The Perioperative Surgical Home model facilitates change implementation in anesthetic technique within a clinical pathway for total knee arthroplasty.** *Healthcare (Amsterdam, Netherlands)*  
Mudumbai, S. C., Walters, T. L., Howard, S. K., Kim, T. E., Lochbaum, G. M., Memtsoudis, S. G., Kain, Z. N., Kou, A., King, R., Mariano, E. R.  
2016; 4 (4): 334-339
  - **An ultrasound-guided fascia iliaca catheter technique does not impair ambulatory ability within a clinical pathway for total hip arthroplasty.** *Korean journal of anesthesiology*  
Mudumbai, S. C., Kim, T. E., Howard, S. K., Giori, N. J., Woolson, S., Ganaway, T., Kou, A., King, R., Mariano, E. R.  
2016; 69 (4): 368-375
  - **Can bedside patient-reported numbness predict postoperative ambulation ability for total knee arthroplasty patients with nerve block catheters?** *Korean journal of anesthesiology*  
Mudumbai, S. C., Ganaway, T., Kim, T. E., Howard, S. K., Giori, N. J., Shum, C., Mariano, E. R.  
2016; 69 (1): 32-36
  - **Implementation of an Anesthesia Information Management System in an Ambulatory Surgery Center** *JOURNAL OF MEDICAL SYSTEMS*  
Mudumbai, S. C.  
2016; 40 (1)
  - **Invasive Mechanical Ventilation in California Over 2000-2009: Implications for Emergency Medicine.** *The western journal of emergency medicine*  
Mudumbai, S. C., Barr, J., Scott, J., Mariano, E. R., Bertaccini, E., Nguyen, H., Memtsoudis, S. G., Cason, B., Phibbs, C. S., Wagner, T.  
2015; 16 (5): 696-706
  - **A retrospective comparative provider workload analysis for femoral nerve and adductor canal catheters following knee arthroplasty** *JOURNAL OF ANESTHESIA*  
Rasmussen, M., Kim, E., Kim, T. E., Howard, S. K., Mudumbai, S., Giori, N. J., Woolson, S., Ganaway, T., Mariano, E. R.  
2015; 29 (2): 303-307
  - **Variations in inpatient pediatric anesthesia in California from 2000 to 2009: a caseload and geographic analysis** *PEDIATRIC ANESTHESIA*  
Mudumbai, S. C., Honkanen, A., Chan, J., Schmitt, S., Saynina, O., Hackel, A., Gregory, G., Phibbs, C. S., Wise, P. H.  
2014; 24 (12): 1295-1301
  - **Continuous Adductor Canal Blocks Are Superior to Continuous Femoral Nerve Blocks in Promoting Early Ambulation After TKA.** *Clinical orthopaedics and related research*  
Mudumbai, S. C., Kim, T. E., Howard, S. K., Workman, J. J., Giori, N., Woolson, S., Ganaway, T., King, R., Mariano, E. R.  
2014; 472 (5): 1377-1383
  - **Thirty-day mortality risk associated with the postoperative nonresumption of angiotensin-converting enzyme inhibitors: A retrospective study of the veterans affairs healthcare system.** *Journal of hospital medicine*  
Mudumbai, S. C., Takemoto, S., Cason, B. A., Au, S., Upadhyay, A., Wallace, A. W.  
2014; 9 (5): 289-296
  - **Effectiveness of preoperative beta-blockade on intra-operative heart rate in vascular surgery cases conducted under regional or local anesthesia.** *SpringerPlus*  
Mudumbai, S. C., Wagner, T., Mahajan, S., King, R., Heidenreich, P. A., Hlatky, M., Wallace, A. W., Mariano, E. R.  
2014; 3: 227-?
  - **Effectiveness of preoperative beta-blockade on intra-operative heart rate in vascular surgery cases conducted under regional or local anesthesia.** *SpringerPlus*

Mudumbai, S. C., Wagner, T., Mahajan, S., King, R., Heidenreich, P. A., Hlatky, M., Wallace, A. W., Mariano, E. R.  
2014; 3: 227-?

- **Association of age and packed red blood cell transfusion to 1-year survival - an observational study of ICU patients** *TRANSFUSION MEDICINE*  
Mudumbai, S. C., Cronkite, R., Hu, K. U., Heidenreich, P. A., Gonzalez, C., Bertaccini, E., Stafford, R. S., Cason, B. A., Mariano, E. R., Wagner, T.  
2013; 23 (4): 231-237
- **Vascular Surgery Patients Prescribed Preoperative beta-Blockers Experienced a Decrease in the Maximal Heart Rate Observed During Induction of General Anesthesia** *JOURNAL OF CARDIOTHORACIC AND VASCULAR ANESTHESIA*  
Mudumbai, S. C., Wagner, T., Mahajan, S., King, R., Heidenreich, P. A., Hlatky, M., Wallace, A., Mariano, E. R.  
2012; 26 (3): 414-419
- **External Validation of Simulation-Based Assessments With Other Performance Measures of Third-Year Anesthesiology Residents** *SIMULATION IN HEALTHCARE*  
Mudumbai, S. C., Gaba, D. M., Boulet, J. R., Howard, S. K., Davies, M. F.  
2012; 7 (2): 73-80
- **Association of admission hematocrit with 6-month and 1-year mortality in intensive care unit patients** *TRANSFUSION*  
Mudumbai, S. C., Cronkite, R., Hu, K. U., Wagner, T., Hayashi, K., Ozanne, G. M., Davies, M. F., Heidenreich, P., Bertaccini, E.  
2011; 51 (10): 2148-2159
- **Feasibility of an internet-based global ranking instrument.** *Journal of graduate medical education*  
Mudumbai, S. C., Gaba, D. M., Boulet, J., Howard, S. K., Davies, M. F.  
2011; 3 (1): 67-74
- **Use of Medical Simulation to Explore Equipment Failures and Human-Machine Interactions in Anesthesia Machine Pipeline Supply Crossover** *ANESTHESIA AND ANALGESIA*  
Mudumbai, S. C., Fanning, R., Howard, S. K., Davies, M. F., Gaba, D. M.  
2010; 110 (5): 1292-1296
- **Trigger Video of Simulated Intraoperative Cardiac Arrest**  
Goldhaber-Fiebert, S., Harrison, K., Mudumbai, S. C., Howard, S., McCowan, K., Gaba, D.  
MedEd Portal, The Journal of Teaching and Learning Resources. Washington DC.  
2010 (6): 0.15766/mep\_2374-8265.7826