

CURRICULUM VITAE

Mehul D. Patel, PhD

Department of Emergency Medicine
Duke University
2301 Erwin Road
Durham, NC 27710
mehul.patel@duke.edu

Education

<u>Institution (Include City and State)</u>	<u>Degree (include Major)</u>	<u>Degree Date</u>
University of South Carolina (Columbia, SC)	BA (Sociology), BS (Chemistry)	5/2003
Emory University (Atlanta, GA)	MSPH (Epidemiology)	5/2005
University of North Carolina at Chapel Hill (Chapel Hill, NC)	PhD (Epidemiology, Biostatistics minor)	8/2013

Professional Training and Academic Career

<u>Institution</u>	<u>Position/Title</u>	<u>Exact Dates</u>
University of North Carolina at Chapel Hill (Department of Epidemiology)	Postdoctoral Fellow	9/8/2013-9/7/2014
Merck & Co., Inc. (Center for Observational and Real World Evidence)	Associate Director	9/15/2014-1/31/2016
Symphony Health Solutions (Healthcare Informatics)	Associate Director	2/1/2016-7/31/2016
University of North Carolina at Chapel Hill (Department of Emergency Medicine)	Research Assistant Professor	9/1/2016-1/31/2019
University of North Carolina at Chapel Hill (Department of Emergency Medicine)	Assistant Professor (Tenure Track)	2/1/2019-1/31/2025
University of North Carolina at Chapel Hill (Department of Emergency Medicine)	Associate Professor with Tenure	2/1/2025-12/31/2025
Duke University (Department of	Associate Professor with Tenure	1/1/2026-

Emergency Medicine)	(Proposed)	
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Scholarship

A. Publications in Refereed Journals (* indicates mentored student/trainee authored and senior authorship)

o Named Author Publications

1. **Patel MD**, Rose KM, O'Brien EC, Rosamond WD. Prehospital Notification by Emergency Medical Services Reduces Delays in Stroke Evaluation: Findings from North Carolina Stroke Care Collaborative. *Stroke*. 2011;42:2263-8. PMID: PMC3970287
2. **Patel MD**, Rose KM, Owens CR, Bang H, Kaufman JS. Performance of Automated and Manual Coding Systems for Occupational Data: A Case Study of Historical Records. *American Journal of Industrial Medicine*. 2012;55:228-31. PMID: PMC3316486
3. O'Brien EC, Rose KM, **Patel MD**, Murphy CV, Rosamond WD. Clinical Outcomes among Stroke Patients Receiving Tissue Plasminogen Activator Therapy Beyond the 3-hour Time Window. *Journal of Stroke and Cerebrovascular Diseases*. 2012;21:541-6. PMID: 21236701
4. Schneider ALC, Sharrett AR, **Patel MD**, Alonso A, Coresh J, Mosley T, Selnes O, Selvin E, Gottesman RF. Education and Cognitive Change Over 15 Years: The Atherosclerosis Risk in Communities (ARIC) Study. *Journal of the American Geriatrics Society*. 2012;60:1847-53. PMID: PMC3662980
5. Foraker RE, **Patel MD**, Whitsel EA, Suchindran CM, Heiss G, Rose KM. Neighborhood socioeconomic disparities and 1-year case fatality after incident myocardial infarction: The Atherosclerosis Risk in Communities (ARIC) Community Surveillance (1992-2002). *American Heart Journal*. 2013;165:102-7. PMID: PMC3523273
6. Bang H, Chiu YL, Kaufman JS, **Patel MD**, Heiss G, Rose KM. Bias correction methods for misclassified covariates in the Cox model: comparison by simulation and application to a study with recalled childhood SES. *Journal of Statistical Theory and Practice*. 2013;7:381-400. PMID: PMC3780447
7. **Patel MD**, Brice JH, Evenson KR, Rose KM, Suchindran CM, Rosamond WD. Emergency Medical Services Capacity for Prehospital Stroke Care in North Carolina. *Preventing Chronic Disease*. 2013;10:130035. PMID: PMC3767834
8. **Patel MD**, Brice JH, Moss C, Suchindran CM, Evenson KR, Rose KM, Rosamond WD. An Evaluation of Emergency Medical Services Stroke Protocols and Scene Times. *Prehospital Emergency Care*. 2014;18:15-21. PMID: PMC3973028
9. Gottesman RF, Rawlings A, Sharrett AR, Albert M, Alonso A, Bandeen-Roche K, Coker LH, Coresh J, Couper DJ, Griswold ME, Heiss G, Knopman DS, **Patel MD**, Penman AD, Selnes OA, Schneider ALC, Wagenknecht LE, Windham G, Wruck LM, Mosley TH. Impact of differential attrition in the association of education with cognitive change over 20 years of follow-up: The ARIC- Neurocognitive Study. *American Journal of Epidemiology*. 2014;179:956-66. PMID: PMC3966720
10. Parks CG, Miller FW, Satoh M, Chan EKL, Andrushchenko Z, Birnbaum LS, Jusko TA, Kissling GE, **Patel MD**, Rose KM, Weinberg C, Zeldin DC, Sandler DP. Reproductive and hormonal risk

- factors for antinuclear antibodies (ANA) in a representative sample of U.S. women. *Cancer Epidemiology, Biomarkers & Prevention*. 2014;23:2492-502. PMID: PMC4361940
11. **Patel MD**, Kalbaugh CA, Chang PP, Matsushita K, Agarwal SK, Caughey MC, Ni H, Rosamond WD, Wruck LM, Loehr LR. Characteristics and Outcomes of Patients with Acute Decompensated Heart Failure Developing After Hospital Admission. *The American Journal of Cardiology*. 2014;114:1530-36. PMID: PMC4253688
 12. Meyer ML, Tanaka H, Palta P, **Patel MD**, Camplain R, Couper D, Cheng S, Al Qunaibet A, Poon AK, Heiss G. Repeatability of Central and Peripheral Pulse Wave Velocity Measures: The Atherosclerosis Risk in Communities (ARIC) Study. *American Journal of Hypertension*. 2016;29:470-5. PMID: PMC4850900
 13. Kats D, **Patel MD**, Palta P, Gross AL, Meyer ML, Whitsel EA, Knopman D, Alonso A, Mosley TH, Heiss G. Social support and cognition in a community-based cohort: the Atherosclerosis Risk in Communities (ARIC) Study. *Age and Ageing*. 2016;45:475-80. PMID: PMC5006245
 14. **Patel MD**, Wu D, Reed Chase M, Mavros P, Heithoff K, Hanson ME, Simpson Jr RJ. Antiplatelet Therapy and Clinical Outcomes Following Myocardial Infarction Among Patients in an Employer-Based Insurance Database in the United States. *Journal of Managed Care & Specialty Pharmacy*. 2017;23:684-90. PMID: 28530518
 15. Vyas A, Bash LD, **Patel MD**, Simpson Jr RJ. Changes in Treatment Patterns and Incremental Healthcare Utilization Due to P2Y12-Associated Complications in Patients with Acute Coronary Syndrome. *Journal of Managed Care & Specialty Pharmacy*. 2017;23:947-56. PMID: 28854078
 16. Bays HE, **Patel MD**, Mavros P, Ramey DR, Tomassini JE, Tershakovec AM, Baxter CA. Using Real-World Data to Assess Changes in Low-Density Lipoprotein Cholesterol and Predicted Cardiovascular Risk Following Ezetimibe Discontinuation After the ENHANCE Trial. *Journal of Clinical Lipidology*. 2017;11:929-37. PMID: 28647412
 17. Evans CS, Platts-Mills TF, Fernandez AR, Grover JM, Cabanas JG, **Patel MD**, Vilke GM, Brice JH. Repeated Emergency Medical Services Use by Older Adults: Analysis of a Comprehensive Statewide Database. *Annals of Emergency Medicine*. 2017;70:506-15. PMID: PMC5614807
 18. Franklin JM, Donneyong MM, Desai RJ, Markson L, Girman CJ, McKay C, **Patel MD**, Mavros P, Schneeweiss S. Variation in adherence to medications across the healthcare system in two comparative effectiveness research cohorts. *Journal of Comparative Effectiveness Research*. 2017;6:613-25. PMID: 29039693
 19. Namboodri BL, Rosen T, Dayaa JA, Ramadan N, **Patel MD**, Grover J, Brice JH, Platts-Mills TF. Elder Abuse Identification in the Prehospital Setting: An Examination of State EMS Protocols. *Journal of the American Geriatrics Society*. 2018;66:962-8. PMID: PMC5992078
 20. Williams BA, Chagin KM, Bash LD, Boden WE, Duval S, Fowkes FGR, Mahaffey KW, **Patel MD**, D'Agostino RB, Peterson ED, Kattan MW, Bhatt DL, Bonaca MP. External validation of the TIMI risk score for secondary cardiovascular events among patients with recent myocardial infarction. *Atherosclerosis*. 2018;272:80-6. PMID: 29579671
 21. Grover JM, Alabdrabnabi T, **Patel MD**, Bachman MW, Platts-Mills TF, Cabanas JG, Williams JG. Measuring an Epidemic: Questioning the Use of Naloxone Administration as a Marker for Opioid Overdoses in a Large U.S. EMS System. *Prehospital Emergency Care*. 2018;22:281-9. PMID: 29297739
 22. Cuthbertson CC, Heiss G, Wright JD, Camplain R, **Patel MD**, Foraker RE, Matsushita K, Puccinelli-Ortega N, Shah AM, Kucharska-Newton AM. Socio-economic Status and Access to Care and the Incidence of a Heart Failure Diagnosis in the Inpatient and Outpatient Setting.

- Annals of Epidemiology. 2018;28:350-5. PMID: PMC5971162
23. Platts-Mills TF, Dayaa JA, Reeve BB, Krajick K, Mosqueda L, Haukoos JS, **Patel MD**, Mulford CF, McLean SA, Sloane PD, Travers D, Zimmerman S. Development of the Emergency Department Senior Abuse Identification (ED Senior AID) tool. *Journal of Elder Abuse & Neglect*. 2018;30:247-70. PMID: PMC6774613
 24. **Patel MD**, Platts-Mills TF, Grover JM, Thomas SM, Rossi JS. Feasibility of prehospital delivery of remote ischemic conditioning by emergency medical services in chest pain patients: protocol for a pilot study. *Pilot and Feasibility Studies*. 2019;5:42. PMID: PMC6415490.
 25. Melnick ER, Jeffery MM, Dziura JD, Mao JA, Hess EP, Platts-Mills TF, Solad Y, Hyung Paek H, Martel S, **Patel MD**, Bankowski L, Lu CC, Brandt C, D'Onofrio G. User-Centered Clinical Decision Support to Implement Emergency Department-Initiated Buprenorphine for Opioid Use Disorder: Protocol for the Pragmatic Group Randomised EMBED Trial. *BMJ Open*. 2019;9:e028488. PMID: PMC6550013.
 26. **Patel MD**, Honvoh G, Fernandez AR, Cadena R, Kelly ER, McDaniel P, Brice JH. Availability of Hospital Resources and Specialty Services for Stroke Care in North Carolina. *Southern Medical Journal*. 2019;112(6):331-337. PMID: PMC6640838.
 27. Chartash D, Paek H, Dziura JD, Ross BK, Noguee DP, Boccio E, Hines C, Schott AM, Jeffery MM, **Patel MD**, Platts-Mills TF, Ahmed OM, Brandt CA, Couturier KC, Melnick ER. Identifying Opioid Use Disorder in the Emergency Department: Multi-System Electronic Health Record–Based Computable Phenotype Derivation and Validation Study. *Journal of Medical Internet Research*. 2019;7(4):e15794. PMID: PMC6913746
 28. Leeper S, Lahri S, Myers J, **Patel M**, Reddy P, Martin IBK, van Hoving DJ. Assault-injured youth in the emergency centres of Khayelitsha, South Africa: Baseline characteristics & opportunities for intervention. *Injury*. 2019;50(12):2220-7. PMID: 31653499
 29. Bash LD, White K, **Patel MD**, Liu J, Mavros P, Mahaffey KW. Cardiovascular Risk Factors and Secondary Events Among Acute and Chronic Stable Myocardial Infarction Patients: Findings from a Managed Care Database. *Cardiology and Therapy*. 2019;8(2):329-43. PMID: PMC6828898.
 30. Melnick ER, Nath B, Ahmed OM, Brandt C, Chartash D, Dziura JD, Hess EP, Holland WC, Hoppe JA, Jeffery MM, Katsovich L, Li F, Lu CC, Maciejewski K, Maleska M, Mao JA, Martel S, Michael S, Paek H, **Patel MD**, Platts-Mills TF, Rajeevan H, Ray JM, Skains RM, Soares WE 3rd, Deutsch A, Solad Y, D'Onofrio G. Progress Report on EMBED: A Pragmatic Trial of User-Centered Clinical Decision Support to Implement Emergency Department-Initiated Buprenorphine for Opioid Use Disorder. *J Psychiatr Brain Sci*. 2020;5. PMID: PMC7164817
 31. *Cui ER, Beja-Glasser A, Fernandez AR, Grover JM, Mann NC, **Patel MD**. Emergency Medical Services Response Times for Acute Chest Pain in the United States, 2015-2016. *Prehospital Emergency Care*. 2020;24(4):557-65. PMID: 31580176
 32. Zègre-Hemsey J, **Patel MD**, Fernandez A, Pelter M, Brice J, Rosamond W. A Statewide Assessment of Prehospital Electrocardiography Approaches of Interpretation for Acute Coronary Syndrome in North Carolina Emergency Medical Services. *Prehospital Emergency Care*. 2020;24(4):550-6. PMID: PMC7190419.
 33. Grover JM, Smith B, Williams J, **Patel MD**, Cabanas J, Brice J. Novel Use of Telemedicine by Hurricane Evacuation Shelters. *Prehospital Emergency Care*. 2020;24:804-12. PMID: 32011202
 34. **Patel MD**, Rosenstrom E, Ivy JS, Mayorga ME, Keskinocak P, Boyce RM, Lich KH, Smith RL, Johnson KT, Delamater PD, Swann JL. Association of Simulated COVID-19 Vaccination and

- Nonpharmaceutical Interventions With Infections, Hospitalizations, and Mortality. *JAMA Network Open*. 2021;4(6):e2110782. PMID: PMC8170542.
35. *Cui ER, Fernandez AR, Zegre-Hemsey JK, Grover JM, Honvoh G, Brice JH, Rossi JS, **Patel MD**. Disparities in Emergency Medical Services Time Intervals for Patients with Suspected Acute Coronary Syndrome: Findings from the North Carolina Prehospital Medical Information System. *Journal of the American Heart Association*. 2021;10(15):e019305. PMID: PMC8475668.
 36. Leeper SC, **Patel MD**, Beja-Glasser A, Reddy P, Martin IB, van Hoving DJ, Myers JG. Assault-injured youth in the emergency centres of Khayelitsha, South Africa: A prospective study of recidivism and mortality. *African Journal of Emergency Medicine*. 2021;11(4):379-84. PMID: PMC8430267.
 37. Rosenstrom ET, Mele J, Ivy JS, Mayorga ME, **Patel MD**, Lich KH, Johnson K, Delamater P, Keskinocak P, Boyce R, Smith R. Can vaccine prioritization reduce disparities in COVID-19 burden for historically marginalized populations?. *PNAS Nexus*. 2022;1(1):pgab004. PMID: PMC9801966.
 38. *Stemerman R, Bunning T, Grover J, Kitzmiller R, **Patel MD**. Identifying patient phenotype cohorts using prehospital electronic health record data. *Prehospital Emergency Care*. 2022;26:78-88. PMID: 33315497
 39. **Patel MD**, Thompson J, Cabañas JG, Williams JG, Lewis E, Bachman M, Al Masry M, LaVigne C, Morantes L, Becks T, Kass-Hout O. Performance of the vision, aphasia, neglect (VAN) assessment within a single large EMS system. *Journal of Neurointerventional Surgery*. 2022;14:341-5. PMID: PMC8787821.
 40. Melnick ER, Nath B, Dziura JD, Casey MF, Jeffery MM, Paek H, Soares WE 3rd, Hoppe JA, Rajeevan H, Li F, Skains RM, Walter LA, **Patel MD**, Chari SV, Platts-Mills TF, Hess EP, D'Onofrio G. User centered clinical decision support to implement initiation of buprenorphine for opioid use disorder in the emergency department: EMBED pragmatic cluster randomized controlled trial. *BMJ*. 2022 Jun 27;377:e069271. PMID: PMC9231533.
 41. Rosenstrom ET, Mele J, Ivy JS, Mayorga ME, **Patel MD**, Lich KH, Delamater P, Smith RL, Swann JL. Vaccinating Children against COVID-19 is Crucial to Protect Schools and Communities. *PNAS Nexus*. 2022 Jul;1(3):pgac081. PMID: PMC9295200.
 42. *Johnson K, Biddell CB, Hassmiller Lich K, Swann J, Delamater P, Mayorga M, Ivy J, Smith RL, **Patel MD**. Use of Modeling to Inform Decision Making in North Carolina during the COVID-19 Pandemic: A Qualitative Study. *MDM Policy & Practice*. 2022 Jul-Dec;7(2):23814683221116362. PMID: PMC9340948.
 43. Biddell CB, Johnson KT, **Patel MD**, Smith RL, Hecht HK, Swann JL, Mayorga ME, Hassmiller Lich K. Cross-sector decision landscape in response to COVID-19: A qualitative network mapping analysis of North Carolina decision-makers. *Frontiers in Public Health*. 2022;10:906602. PMID: PMC9424900.
 44. Lin P, Argon NT, Cheng Q, Evans CS, Linthicum B, Liu Y, Mehrotra A, **Patel MD**, Ziya S. Disparities in emergency department prioritization and rooming of patients with similar triage acuity score. *Academic Emergency Medicine*. 2022;29(11):1320-8. PMID: 36104028.
 45. *Chari SV, Cui ER, Fehl HE, Fernandez AR, Brice JH, **Patel MD**. Community socioeconomic and urban-rural differences in emergency medical services times for suspected stroke in North Carolina. *The American Journal of Emergency Medicine*. 2023;63:120-6. PMID: PMC10425758.
 46. *Johnson K, Biddell CB, Hecht HK, Lich KH, Swann J, Delamater P, Mayorga M, Ivy J, Smith

- RL, **Patel MD**. Organizational decision-making during COVID-19: A qualitative analysis of the organizational decision-making system in the United States during COVID-19. *Journal of Contingencies and Crisis Management*. 2023 Jun;31(2):259-72.
47. Pozner J, Winslow J, Schinde S, **Patel MD**, Grover JM. EMS Involvement in COVID-19 Vaccination Efforts - Results of a North Carolina Statewide Survey. *Prehospital Emergency Care*. 2023;27(3):293-6. PMID: 35333663.
48. *Miller NS, **Patel MD**, Williams JG, Bachman MW, Cyr JM, Cabañas JG, Brice JH. Prehospital Fluid Administration for Suspected Sepsis in a Large EMS System: Opportunities to Improve Goal Fluid Delivery. *Prehospital Emergency Care*. 2023;27(6):769-74. PMID: 37071593.
49. **Patel MD**, Brown AB, Kebede ES. Statewide availability of acute stroke treatment, services, and programs: A survey of North Carolina Hospitals. *Journal of Stroke and Cerebrovascular Diseases*. 2023 Aug 24;32(10):107323. PMID: 37633205.
50. *Shams RB, Chari SV, Cui ER, Fernandez AR, Brice JH, Winslow JE, Jauch EC, **Patel MD**. Community Socioeconomic and Urban-Rural Disparities in Prehospital Notification of Stroke by Emergency Medical Services in North Carolina. *Southern Medical Journal*. 2023;116(9):765-71. PMID: PMC10491424.
51. **Patel MD**, Williams JG, Bachman MW, Cyr JM, Cabañas JG, Miller NS, Gorstein LN, Hajjar MA, Turcios H, Malcolm JT, Brice JH. Effectiveness of a Novel Rapid Infusion Device and Clinician Education for Early Fluid Therapy by Emergency Medical Services in Sepsis Patients: A Pre-Post Observational Study. *Prehospital Emergency Care*. 2024;28:753-760. PMID: 38015064.
52. Sahebi-Fakhrabad A, Kemahlioglu-Ziya E, Handfield R, Wood S, **Patel MD**, Page CP, Chang L. In-Hospital Code Status Updates: Trends Over Time and the Impact of COVID-19. *Am J Hosp Palliat Care*. 2024;41(11):1363-1367. PMID: 38111223.
53. **Patel MD**, Lin P, Cheng Q, Argon NT, Evans CS, Linthicum B, Liu Y, Mehrotra A, Murphy L, Ziya S. Patient sex, racial and ethnic disparities in emergency department triage: A multi-site retrospective study. *The American Journal of Emergency Medicine*. 2024;76:29-35.
54. Cheng Q, Argon NT, Evans CS, Lin P, Linthicum B, Liu Y, Mehrotra A, **Patel MD**, Ziya S. An Investigation into Demographic Disparities in Emergency Department Disposition Decisions. *Production and Operations Management*. 2025;34(4):689-97. doi: 10.1177/10591478241235000
55. Liu AC, **Patel MD**, Gross AL, Mosley TH, Schneider ALC, Kucharska-Newton AM, Sharrett AR, Gottesman RF, Koton S. Occupation, Retirement Age, and 20-Year Cognitive Decline: The Atherosclerosis Risk in Communities Neurocognitive Study. *Neuroepidemiology*. 2024;58:292-9. PMID: PMC11300158.
56. Lin P, Argon NT, Cheng Q, Evans CS, Linthicum B, Liu Y, Mehrotra A, Murphy L, **Patel MD**, Ziya S. Identifying Patient Subpopulations with Significant Race-Sex Differences in Emergency Department Disposition Decisions. *Health Services Insights*. 2024;17:11786329241277724. PMID: PMC11378179.
57. Cyr JM, Hajjar MA, Gorstein LN, Turcios H, Turkington E, **Patel MD**, Malcolm JT, Williams JG, Cabañas JG, Brice JH. Evaluation of the Implementation of a Novel Fluid Resuscitation Device in the Prehospital Care of Sepsis Patients: Application of the Implementation Outcomes Framework. *Prehospital Emergency Care*. 2025;29:749-59. PMID: 39324729.
58. **Patel MD**, Chari SV, Cui ER, Fernandez AR, Planey AM, Jauch EC, Winslow JE. Rural-urban differences in emergency medical services bypass routing of stroke in North Carolina. *The Journal of Rural Health*. 2025;41:e12868. PMID: PMC11637935.
59. *Johnson EN, Pinapaka MV, Grewe ME, Stewart LE, Jauch EC, Brice JH, Winslow JE, **Patel**

- MD.** Rural Emergency Medical Services Perspectives on Improving Acute Stroke Care: A Qualitative Study. *Prehospital Emergency Care.* 2025;29:1123-31. PMID: PMC12353085.
60. *Tayes C, Schiro S, Smith B, Willner D, Winslow JE, **Patel MD.** Rural-urban differences in prehospital deaths due to injury in North Carolina. *Am J Emerg Med.* 2026;104:44-49. PMID: PMC12997405.

○ **Letters and editorials**

1. Meyer ML, Tanaka H, Palta P, **Patel MD,** Camplain R, Couper D, Cheng S, Qunaibet AA, Poon AK, Heiss G. Response to “Repeatability of Different Segmental Pulse Wave Velocity Measurements”. *American Journal of Hypertension.* 2016;29:890. PMID: PMC6267860
2. **Patel MD.** The Role of Emergency Medical Dispatch in Responding to Acute Stroke – Expanding Beyond High Priority Dispatch? *Prehospital Emergency Care.* 2018;22:99-100. PMID: 28657797
3. **Patel MD,** Namboodri BL, Platts-Mills TF. Modernizing Informed Consent During Emergency Care. *Annals of Emergency Medicine.* 2020;76:350-2. PMID: 31959535
4. Wooten J, Benedyk K, **Patel M,** DeFranco M, Pettigrew E, Grover J. EMS incorporation in mass-vaccination: A feasibility study. *The American Journal of Emergency Medicine.* 2021;49:424-5. PMID: PMC7906871.
5. Wong E, Rosamond W, **Patel MD,** Waller AE. Statewide declines in myocardial infarction and stroke emergency department visits during COVID-19 restrictions in North Carolina. *The American Journal of Emergency Medicine.* 2022;56:288-9. PMID: PMC8295045.
6. Rosamond WD, Kucharska-Newton AM, Jones SB, Psioda MA, Lutz BJ, Johnson AM, Coleman SW, Schilsky S, **Patel MD,** Duncan PW. Emergency department utilization after hospitalization discharge for acute stroke: The COMprehensive Post-Acute Stroke Services (COMPASS) study. *Academic Emergency Medicine.* 2022;29:369-71. PMID: 34657341.
7. Mauro Z, Padron C, Ding M, **Patel M,** Winslow JE, Grover J. EMS medical director compensation in North Carolina. *The American Journal of Emergency Medicine.* 2024;82:194-6. PMID: 38906744.

B. Abstracts (10 most impactful abstracts): (* indicates mentored student/trainee authored and senior authorship)

1. **Patel MD,** Rose KM, Suchindran CM, Whitsel EA, Wood JL. Incorporating Spatial Autocorrelation in Models of the Association Between Neighborhood Socioeconomic Status and Incident Hospitalized Myocardial Infarction: The Atherosclerosis Risk in Communities Surveillance Study. *Circulation.* 2009;119(10):E351.
2. **Patel MD,** Suchindran CM, Rose KM, Whitsel EA. Spatiotemporal Analysis of Incident Myocardial Infarction and Neighborhood Socioeconomic Status. *American Journal of Epidemiology.* 2010;171(Suppl):S161.
3. **Patel MD,** Brice JH, Rosamond WD. Bypass of Local Acute Care Facilities for Primary Stroke Centers in North Carolina. *Circulation: Cardiovascular Quality and Outcomes.* 2011;4(Suppl 2):AP266.
4. **Patel MD,** Gottesman R, Mosley T, Schneider ALC, Selnes O, Coresh J, Sharrett AR. Association of Midlife Occupation and Cognitive Performance: The Atherosclerosis Risk in Communities

- Study. American Journal of Epidemiology. 2012;175(Suppl 11):S92.
5. **Patel M**, Chadwick B, Lucke A, Grover J, Stemerman R, Platts-Mills T, Rossi J. Tolerability of Remote Ischemic Conditioning in Chest Pain Patients Transported by Emergency Medical Services. Prehospital Emergency Care. 2019;23(1):134.
 6. **Patel MD**, McGinnis E, Konstanzer J, Hassmiller Lich K. Regional Differences in Optimal Acute Stroke Triage and Transport by Emergency Medical Services: A Discrete Event Simulation. Medical Decision Making. 2023;43(3):NP448-50.
 7. **Patel MD**, Williams JG, Bachman MW, Cyr JM, Cabanas JG, Miller N, Malcolm J, Brice JH. Improved Fluid Initiation for Sepsis by Emergency Medical Services with Implementation of a Novel Rapid Infusion Device. Prehospital Emergency Care. 2023;27(Suppl 1):S46-7.
 8. *Pinapaka MV, **Patel MD**, Chari SV, Rosamond WD. Abstract P247: Rural-Urban Disparities in In-Hospital Stroke Mortality in North Carolina. Circulation. 2024 Mar 19;149(Suppl_1):AP247.
 9. **Patel MD**, Schiro S, Smith B, Willner D, Winslow J. Rural-Urban Differences in Out-of-Hospital Trauma Mortality in North Carolina. Prehospital Emergency Care. 2025;29(Suppl 1):S30.
 10. *Stewart L, Johnson Emma, Pinapaka M, Jauch E, Brice J, **Patel M**. Stroke Survivor and Caregiver Perspectives on Seeking Acute Care: A Qualitative Study. Stroke. 2025 Feb;56(Suppl_1):ATP156.

Appointments and Recognition

A. Scientific Reviewer:

- **Journal Editor**

Assistant Editor – Methodology, American Journal of Emergency Medicine (2022 – present)

- **Ad Hoc Reviewer**

Grants: Temporary member, NIH Study Section – Health Services Quality and Effectiveness (meeting dates: March 1-2, 2023); Member, NIH Special Emphasis Panel – ZNS1 SRB-A(07) Community-engaged Health Equity Research Neuroscience (meeting date: March 5, 2024); Member, NIH Special Emphasis Panel – ZNR1 REV-M (44) Health Equity in Rural Populations (meeting dates: July 11-12, 2024); Temporary member, NIH Study Section – Organization and Delivery of Health Services (meeting date: January 6, 2026)

Journals: Academic Emergency Medicine, American Heart Journal, American Journal of Cardiology, American Journal of Emergency Medicine, American Journal of Epidemiology, Annals of Emergency Medicine, BMC Emergency Medicine, BMJ Open, Cerebrovascular Diseases, Circulation, Diabetic Medicine, Emergency Medicine Journal, International Journal of Stroke, JAMA Network Open, Journal of Clinical Trials, Journal of the Royal Statistical Society, PCORI, Prehospital Emergency Care, Preventing Chronic Disease, Quality of Life Research, The Journal of Rural Health, Traffic Injury Prevention, Wellcome Open Research

Conference Abstracts: American College of Emergency Physicians Research Forum (2017-2020), International Society for Pharmacoeconomics and Outcomes Research Annual European Congress (2015), National Association of EMS Physicians (2021-2022, 2024), Society for Epidemiologic Research Annual Meeting (2014, 2017)

B. Professional Societies, Service Organizations (list membership status, leadership positions, committee membership, etc.):

Mo/Yr	Organizations/Committees
3/2008	American Heart Association
1/2019	National Association of EMS Physicians / Research Committee
9/2022	Society for Medical Decision Making

C. Scholarly Societies (Alpha Omega Alpha, Sigma Xi, Phi Beta Kappa, etc.):

Phi Beta Kappa Honor Society (2003)
 Delta Omega Honorary Society in Public Health (2014)
 Sigma Xi Scientific Research Honor Society (2024)

D. Professional Awards and Recognition:

Date	Award(s)
2003	Magna Cum Laude (University of South Carolina)
2012	Graduate Education Advancement Board Impact Award (The Graduate School, University of North Carolina at
2013	Student Research Paper Contest Winner (<i>Preventing Chronic Disease</i> , Centers for Disease Control and Prevention)
2017	Junior Faculty Development Award (Office of the Executive Vice Chancellor and Provost, University of North Carolina at Chapel Hill)
2018	Completion with Distinction, NINDS Clinical Trials Methodology Course (R25NS088249: University of Michigan, University of Iowa, and Los Angeles BioMed)
2020	Gene Orringer Junior Faculty Career Development Scholar (North Carolina Translational and Clinical Sciences Institute, University of North Carolina at Chapel Hill)
2021	2020 Top Peer Reviewers (<i>Annals of Emergency Medicine</i>)

Research Support

Current:

Project title: Regionalization of Acute Stroke Care for Rural Populations: A Systems Modeling Approach
Grant number: R01MD018031
PI: Patel, Mehul

Your role: PI

Your % effort: 40%

Funding source: NIH/NIMHD

Funding amount: \$2,775,454

Duration: 7 / 7 / 2 0 2 3 - 1 / 3 1 / 2 0 2 8

Project synopsis: Our specific aims are to: (1) determine EMS stroke triage and transport strategies that optimize functional outcomes in rural stroke patients; (2) estimate the potential system-wide effects of rural EMS triage and transport on health care resource utilization; and (3) understand the influence of rural population and health care system characteristics on optimizing EMS stroke triage and transport strategies. Our overall objective is to use systems science and simulation modeling to develop a decision-analytic tool that allows stroke system planners to compare potential effects of regionalized EMS triage and transport strategies on rural stroke outcomes and health care resource utilization.

Project title: Regional Trauma Systems of Care to Address Rural Disparities in Injury Mortality

Grant number: R21MD019082

PI: Patel, Mehul

Your role: PI

Your % effort: 20%

Funding source: NIH/NIMHD

Funding amount: \$435,405

Duration: 9 / 2 5 / 2 0 2 3 - 5 / 3 1 / 2 0 2 6

Project synopsis: The goal of this research is to improve regional trauma systems of care so that underserved rural populations have timely access to life-saving treatment. Analysis of existing data on trauma care and patient mortality and key stakeholder engagement will be integrated to identify strategies to address rural trauma disparities.

Completed:

Project title: BARIATRIC SURGERY IMPACT ON CANCER STUDY (BASICS)

Grant number: 75N91019D00024-75N91020F00003

PI: Courcoulas, Anita

Your role: Co-I/Subcontract PI

Your % effort: 3%

Funding source: NIH/NCI, Leidos Biomedical Research, University of Pittsburgh

Funding amount: \$26,000

Duration: 5/1/2023-8/30/2024

Project synopsis: To assess and measure cancer screening practices in adults in the 3-5 years before, immediately before/preoperatively (1-year), and after BMS (3-5 years or more) compared to a matched comparison group that did not undergo BMS.

Project title: Understanding and Addressing Disparities in Triage and Disposition Decisions in the Emergency Department

Grant number: R03HS029078

PI: Patel, Mehul

Your role: PI

Your % effort: 10%

Funding source: AHRQ

Funding amount: \$99,854

Duration: 8 / 1 / 2 0 2 2 - 7 / 3 1 / 2 0 2 3

Project synopsis: This pilot project uses existing electronic health record data from multiple diverse EDs and advanced statistical and machine learning methods to investigate gender, racial, and ethnic disparities in ED triage and hospital admission decisions. This Learning Health System embedded research integrates scientific evidence, internal data, and stakeholder engagement to improve equity of healthcare delivery in the ED.

Project title: Improving Acute Stroke Care Workflows Across the Chain of Survival

Grant number: Project Support

PI: Patel, Mehul

Your role: PI

Your % effort: 7.5%

Funding source: Laerdal Foundation

Funding amount: \$28,578

Duration: 8 / 1 / 2 0 2 1 - 7 / 3 1 / 2 0 2 3

Project synopsis: This pilot project will employ qualitative research methods to obtain stakeholder input on acute stroke workflows and potential interventions to improve the timeliness of care. This research will contribute generalizable knowledge on comprehensive strategies for advancing acute stroke care across the chain of survival.

Project title: EMBED: Pragmatic trial of user-centered clinical decision support to implement EMergency department-initiated BuprenorphinE for opioid use Disorder

Grant number: UG3DA047003/UH3DA047003

PI: Melnick, Edward, and D'Onofrio, Gail

Your role: Co-I

Your % effort: 15%

Funding source: NIH/NIDA, Yale University

Funding amount: \$700,726

Duration: 4/1/2018-3/31/2023

Project synopsis: The goal of this multicenter project is to develop a user-centered clinical decision support tool for emergency department-initiated buprenorphine treatment. Then we will implement and test its effectiveness in a pragmatic trial.

Project title: Computer Simulation Modeling to Optimize Regional Stroke Systems of Care

Grant number: KL2TR002490

PI: Weinberger, Morris

Your role: Scholar

Your % effort: 75%

Funding source: NIH/NCATS, North Carolina Translational and Clinical Sciences Institute

Funding amount: \$1,864,259

Duration: 5 / 1 / 2 0 2 0 - 2 / 2 8 / 2 0 2 3

Project synopsis: The overall goal of the KL2 Program is to train junior faculty to compete successfully as leaders in translational research. The KL2 program has two overarching goals: (1)

Train KL2 Scholars to apply their disciplinary expertise to translational science and equip them with the strategic thinking and management skills needed to create and sustain transformative interdisciplinary research programs in a rapidly changing environment and (2) provide KL2 Scholars with the skills to mentor members of their own research teams, their peers, as well as the next generation of translational scientists.

Project title: Early fluid resuscitation by emergency medical services in patients with sepsis: a comparative effectiveness and implementation study of the LifeFlow device

Grant number: The LifeFlow Resuscitation Research Grant

PI: Brice, Jane

Your role: Co-I

Your % effort: 10%

Funding source: Emergency Medicine Foundation/410 Medical

Funding amount: \$239,789

Duration: 5 / 1 / 2 0 2 1 - 1 0 / 3 1 / 2 0 2 2

Project synopsis: This project aims to evaluate the effectiveness of the LifeFlow fluid delivery device and to assess its implementation into routine prehospital care for septic patients.

Project title: Integrated Systems Model to Inform State and Local Planning for the COVID-19 Pandemic

Grant number: NU38OT000297-02

PI: Swann, Julie

Your role: Co-I

Your % effort: 10%

Funding source: CDC/CSTE, North Carolina State University

Funding amount: \$161,595

Duration: 1 0 / 1 / 2 0 2 0 - 1 / 3 1 / 2 0 2 2

Project synopsis: This project was awarded for participation in the Development of Forecasts and Mathematical Models for COVID-19 to Inform Public Health Decision Making through a cooperative agreement with the CDC and Council for State and Territorial Epidemiologists.

Project title: Integrated Systems Model to Inform State and Local Planning for the COVID-19 Pandemic

Grant number: COVID-19 Pilot Grant

PI: Patel, Mehul and Mayorga, Maria

Your role: PI

Your % effort: 0%

Funding source: The North Carolina Translational and Clinical Sciences (NC TraCS) Institute, University of North Carolina at Chapel Hill

Funding amount: \$24,956

Duration: 8 / 1 / 2 0 2 0 - 7 / 3 1 / 2 0 2 1

Project synopsis: This funding will support the development of an integrated simulation model that captures both COVID-19 spread at the North Carolina census tract-level and the resulting load on the healthcare system and that can be used to inform high-priority policy and operational decisions at the local and state levels.

Project title: A Mixed Methods Study of Remote Ischemic Conditioning Delivered by Emergency Medical Services in the Prehospital Setting

Grant number: University Research Council Research Grant

PI: Patel, Mehul

Your role: PI

Your % effort: 0%

Funding source: Office of Research Development, University of North Carolina at Chapel Hill

Funding amount: \$6,425

Duration: 7 / 1 / 2 0 1 8 - 1 2 / 3 1 / 2 0 2 0

Project synopsis: Funding from this small grant will supplement funds from the NC TraCS \$5k-\$50k Pilot Grant to assess the feasibility of prehospital remote ischemic conditioning.

Project title: A Mixed Methods Study of Remote Ischemic Conditioning Delivered by Emergency Medical Services in the Prehospital Setting

Grant number: \$5k-\$50k Pilot Grant

PI: Patel, Mehul

Your role: PI

Your % effort: 0%

Funding source: The North Carolina Translational and Clinical Sciences (NC TraCS) Institute, University of North Carolina at Chapel Hill

Funding amount: \$36,810

Duration: 2 / 1 / 2 0 1 8 - 7 / 3 1 / 2 0 1 9

Project synopsis: This funding supported a mixed-methods study of the feasibility of delivery remote ischemic conditioning in the prehospital setting.