Bio

BIO

Dr. David A. Spain is the David L. Gregg, MD Professor and Chief of Acute Care Surgery. His clinical areas of specialty are emergency and elective general surgery, trauma and critical care. His research focus is assessment of clinical care, systems of care and assessment of stress response and PTSD after trauma. He is the current President-elect of the American Association for the Surgery of Trauma and a Director of the American Board of Surgery. He is the editor of the new textbook Scientific American's Critical Care of the Surgical Patient.

CLINICAL FOCUS

• Critical Care Medicine
• Trauma Surgery
• Splenectomy
• Hernia, Abdominal
• Cholecystectomy, Laparoscopic
• Surgical Critical Care

ACADEMIC APPOINTMENTS

• Professor - Med Center Line, Surgery - General Surgery

ADMINISTRATIVE APPOINTMENTS

• Chief of Trauma and Critical Care Surgery, Stanford University, (2001- present)

HONORS AND AWARDS

• General Surgery Chief Residents Award, Stanford (2018)
• Teaching Award, Stanford/Kaiser Emergency Medicine Residency (2004 and 2008)
• Collins Teaching Award, General Surgery Residency Program (2005)
• General Surgery Chief Residents Award, Stanford (2010)
PROFESSIONAL EDUCATION

• Medical Education: Wayne State University Office of the Registrar (1986) MI
• Board Certification: General Surgery, American Board of Surgery (1993)
• Board Certification: Surgical Critical Care, American Board of Surgery (1996)
• Fellowship: University of Louisville Hospital (1994) KY
• Residency: Robert Wood Johnson University Hospital (1992) NJ
• MD, Wayne State University , Medicine (1986)
• BS/Honors College, Michigan State University , Biochemistry (1982)

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Our main areas of interest are clinical research in shock, sepsis, multiple organ failure and ICU pneumonia, as well as organizational characteristic of well functioning trauma centers and systems.

We have also developed a robust program in Health Services Research focused on access to specialized, high acuity care and the economic impact of this on the hospital and healthcare system.

We also have an ongoing, multi-centered NIH funded study on "Development of a Risk Factor Screen for Mental Health Problems after Sudden Illness or Injury." This study runs through 2021.

Teaching

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

• Surgical Critical Care Medicine (Fellowship Program)

Publications

PUBLICATIONS

• Readmission risk and costs of firearm injuries in the United States, 2010-2015. PloS one
  Spitzer, S. A., Vail, D., Tennakoon, L., Rajasingh, C., Spain, D. A., Weiser, T. G.
  2019; 14 (1): e0209896

• The Future of Emergency General Surgery. Annals of surgery
  Havens, J. M., Neiman, P. U., Campbell, B. L., Croce, M. A., Spain, D. A., Napolitano, L. M.
  2018

• The Economic Footprint of Acute Care Surgery in the United States: Implications for Systems Development. The journal of trauma and acute care surgery
  2018

• INTER-HOSPITAL VARIABILITY IN TIME TO DISCHARGE TO REHABILITATION AMONG INSURED TRAUMA PATIENTS. The journal of trauma and acute care surgery
  Knowlton, L. M., Harris, A. H., Tennakoon, L., Hawn, M. T., Spain, D. A., Staudenmayer, K. L.
  2018

• Letter to the Editor ANNALS OF SURGERY
  Spitzer, S. A., Vail, D., Rajasingh, C. M., Tennakoon, L., Spain, D. A., Weiser, T. G.
  2018; 268 (6): E77–E78
Implementing a Standardized Nurse-driven Rounding Protocol in a Trauma-surgical Intensive Care Unit: A Single Institution Experience. *Cureus*
2018; 10 (10): e3422

An Update on the Management of Adult Traumatic Nerve Injuries-Replacing Old Paradigms: A Review. *The journal of trauma and acute care surgery*
Smith, B. W., Sakamuri, S., Spain, D. A., Joseph, J. R., Yang, L. J., Wilson, T. J.
2018

Operative vs Nonoperative Management of Appendicitis: A Long-Term Cost-Effectiveness Analysis
ELSEVIER SCIENCE INC.2018: S157–S158

The association between angioembolization and splenic salvage for isolated splenic injuries. *The Journal of surgical research*
2018; 229: 150–55

Financial Stability of Level I Trauma Centers Within Safety-Net Hospitals. *Journal of the American College of Surgeons*
2018

Surgical deserts in California: an analysis of access to surgical care *JOURNAL OF SURGICAL RESEARCH*
2018; 223: 102–8

Trauma-induced insurance instability: Variation in insurance coverage for patients who experience readmission after injury. *The journal of trauma and acute care surgery*
Rajasingh, C. M., Weiser, T. G., Knowlton, L. M., Tennakoon, L., Spain, D. A., Staudenmayer, K. L.
2018; 84 (6): 876–84

Letter to the Editor. *Annals of surgery*
Spitzer, S. A., Vail, D., Rajasingh, C. M., Tennakoon, L., Spain, D. A., Weiser, T. G.
2017

Splenic trauma: WSES classification and guidelines for adult and pediatric patients *WORLD JOURNAL OF EMERGENCY SURGERY*
2017; 12: 40

Real-Time Clinical Decision Support Decreases Inappropriate Plasma Transfusion *AMERICAN JOURNAL OF CLINICAL PATHOLOGY*
2017; 148 (2): 154–60

Clinical phenotypes of US level I trauma centers: use of clustering methodology
Forrester, J. D., Weiser, T. G., Maggio, P., Browder, T., Tennakoon, L., Spain, D. A., Staudenmayer, K.
ACADEMIC PRESS INC ELSEVIER SCIENCE.2017: 146–52

The trauma ecosystem: The impact and economics of new trauma centers on a mature statewide trauma system. *Journal of trauma and acute care surgery*
2017; 82 (6): 1014-1022

The prevalence of psychiatric diagnoses and associated mortality in hospitalized US trauma patients *JOURNAL OF SURGICAL RESEARCH*
Townsend, L. L., Esquivel, M. M., Uribe-Leitz, T., Weiser, T. G., Maggio, P. M., Spain, D. A., Tennakoon, L., Staudenmayer, K.
2017; 213: 171–76

A geospatial evaluation of timely access to surgical care in seven countries *BULLETIN OF THE WORLD HEALTH ORGANIZATION*
2017; 95 (6): 437–44

• Development and preliminary performance of a risk factor screen to predict posttraumatic psychological disorder after trauma exposure. *General Hospital Psychiatry*
  Carlson, E. B., Palmieri, P. A., Spain, D. A.
  2017; 46: 25–31

• Population-based estimate of trauma-related deaths for law enforcement personnel: Risks for death are higher and increasing over time. *Journal of Trauma and Acute Care Surgery*
  2017

• The American College of Surgeons (ACS) Needs-Based Assessment of Trauma Systems (NBATS): Estimates for the State of California. *Journal of Trauma and Acute Care Surgery*
  2017

• Use of Unsolicited Patient Observations to Identify Surgeons With Increased Risk for Postoperative Complications. *JAMA Surgery*
  2017

• National Readmission Patterns of Isolated Splenic Injuries Based on Initial Management Strategy. *JAMA Surgery*
  Rosenberg, G. M., Knowlton, L., Rajasingh, C., Weng, Y., Maggio, P. M., Spain, D. A., Staudenmayer, K. L.
  2017; 152 (12): 1119–25

• Trauma advanced practice provider programme development in an academic setting to optimize care coordination. *Trauma Surgery & Acute Care Open*
  2017; 2 (1): e000068

• Nontraumatic Clostridium septicum Myonecrosis in Adults Case Report and a 15-Year Systematic Literature Review. *Infectious Diseases in Clinical Practice*
  Forrestor, J. D., Shkolyar, E., Gregg, D., Spain, D. A., Weiser, T. G.
  2016; 24 (6): 318–23

• International rotations: A valuable source to supplement operative experience for acute care surgery, trauma and surgical critical care fellows. *Journal of Trauma and Acute Care Surgery*
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• Trends in open vascular surgery for trauma: implications for the future of acute care surgery. *Journal of Surgical Research*
  Forrestor, J. D., Weiser, T. G., Maggio, P., Browder, T., Tennakoon, L., Spain, D., Staudenmayer, K.
  2016; 205 (1): 208-212

• The significance of underlying cardiac comorbidity on major adverse cardiac events after major liver resection. *HPB*
  2016; 18 (9): 742-747

• Contributions of risk and protective factors to prediction of psychological symptoms after traumatic experiences. *Comprehensive Psychiatry*
  2016; 69: 106–15

• Trends in the management of pelvic fractures, 2008-2010. *Journal of Surgical Research*
  Chu, C. H., Tennakoon, L., Maggio, P. M., Weiser, T. G., Spain, D. A., Staudenmayer, K. L.
  2016; 202 (2): 335-340
• The Triage of Injured Patients: Mechanism of Injury, Regardless of Injury Severity, Determines Hospital Destination AMERICAN SURGEON
Staudenmayer, K., Wang, N. E., Weiser, T. G., Maggio, P., Mackersie, R. C., Spain, D., Hsia, R. Y.
2016; 82 (4): 356-361

• Trauma center care is associated with reduced readmissions after injury. journal of trauma and acute care surgery
Staudenmayer, K., Weiser, T. G., Maggio, P. M., Spain, D. A., Hsia, R. Y.
2016; 80 (3): 412-418

• Advantages and psychometric validation of proximal intensive assessments of patient-reported outcomes collected in daily life QUALITY OF LIFE RESEARCH
2016; 25 (3): 507-516

• Uninsured status may be more predictive of outcomes among the severely injured than minority race INJURY-INTERNATIONAL JOURNAL OF THE CARE OF THE INJURED
Gerry, J. M., Weiser, T. G., Spain, D. A., Staudenmayer, K. L.
2016; 47 (1): 197-202

• Small bowel obstruction: A practical step-by-step evidence-based approach to evaluation, decision making, and management. journal of trauma and acute care surgery
Azagury, D., Liu, R. C., Morgan, A., Spain, D. A.
2015; 79 (4): 661-668

• The Effect of Chronic Kidney Disease on Postoperative Outcomes after Major Hepatectomy: Results from the National Surgical Quality Improvement Program
ELSEVIER SCIENCE INC.2015: S94–S95

• Hepato-pancreatectomy: how morbid? Results from the national surgical quality improvement project HPB
Tran, T. B., Dua, M. M., Spain, D. A., Visser, B. C., Norton, J. A., Poultsides, G. A.
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• Care and caring in the intensive care unit: Family members’ distress and perceptions about staff skills, communication, and emotional support JOURNAL OF CRITICAL CARE
Carlson, E. B., Spain, D. A., Muhtadie, L., McDade-Montez, L., Macia, K. S.
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• Adding insult to injury: discontinuous insurance following spine trauma. journal of bone and joint surgery. American volume
2015; 97 (2): 141-146

• Adding Insult to Injury: Discontinuous Insurance Following Spine Trauma JOURNAL OF BONE AND JOINT SURGERY-AMERICAN VOLUME
2015; 97A (2): 141-146

• Prediction of neurosurgical intervention after mild traumatic brain injury using the national trauma data bank. World journal of emergency surgery
Sweeney, T. E., Salles, A., Harris, O. A., Spain, D. A., Staudenmayer, K. L.
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• Prediction of neurosurgical intervention after mild traumatic brain injury using the national trauma data bank. World journal of emergency surgery
Sweeney, T. E., Salles, A., Harris, O. A., Spain, D. A., Staudenmayer, K. L.
2015; 10: 23-?

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Gerry, J. M., Spain, D. A., Staudenmayer, K. L.
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• Environmental Sampling for Clostridium difficile on Alcohol-Based Hand Rub Dispensers in an Academic Medical Center SURGICAL INFECTIONS
Forrester, J. D., Banaei, N., Buchner, P., Spain, D. A., Staudenmayer, K. L.
2014; 15 (5): 581-584
- Variations in Pediatric Trauma Transfer Patterns in Northern California Pediatric Trauma Centers (2001-2009) *ACADEMIC EMERGENCY MEDICINE*
  2014; 21 (9): 1023-1030

- Variations in pediatric trauma transfer patterns in Northern California pediatric trauma centers (2001-2009). *Academic emergency medicine*
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- Clostridium ramosum Bacteremia: Case Report and Literature Review *SURGICAL INFECTIONS*
  Forrester, J. D., Spain, D. A.  
  2014; 15 (3): 343-346

- Factors Associated With the Disposition of Severely Injured Patients Initially Seen at Non-Trauma Center Emergency Departments Disparities by Insurance Status *JAMA SURGERY*
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- Factors associated with the disposition of severely injured patients initially seen at non–trauma center emergency departments: disparities by insurance status. *JAMA surgery*
  2014; 149 (5): 422-430

- Variability in California triage from 2005 to 2009: A population-based longitudinal study of severely injured patients. *journal of trauma and acute care surgery*
  Staudenmayer, K., Lin, F., Mackersie, R., Spain, D., Hsia, R.  
  2014; 76 (4): 1041-1047

- The epidemiology of trauma-related mortality in the United States from 2002 to 2010. *journal of trauma and acute care surgery*
  Sise, R. G., Calvo, R. Y., Spain, D. A., Weiser, T. G., Staudenmayer, K. L.  
  2014; 76 (4): 913-920

- Cost-effectiveness of helicopter versus ground emergency medical services for trauma scene transport in the United States. *Annals of emergency medicine*
  2013; 62 (4): 351-364 e19

- Cost-effectiveness of helicopter versus ground emergency medical services for trauma scene transport in the United States. *Annals of emergency medicine*
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- Cost-effectiveness of preoperative imaging for appendicitis after indeterminate ultrasonography in the second or third trimester of pregnancy. *Obstetrics and gynecology*
  2013; 122 (4): 821-829

- Triage of elderly trauma patients: a population-based perspective. *Journal of the American College of Surgeons*
  Staudenmayer, K. L., Hsia, R. Y., Mann, N. C., Spain, D. A., Newgard, C. D.  
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- Logistics of transfusion support for patients with massive hemorrhage *CURRENT OPINION IN ANESTHESIOLOGY*
  Goodnough, L. T., Spain, D. A., Maggio, P.  
  2013; 26 (2): 208-214

- Predictors of emergency department death for patients presenting with ruptured abdominal aortic aneurysms *JOURNAL OF VASCULAR SURGERY*
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• Payer status is associated with the use of prophylactic inferior vena cava filter in high-risk trauma patients. *Surgery*
  Pickham, D. M., Callcut, R. A., Maggio, P. M., Mell, M. W., Spain, D. A., Bech, F., Staudenmayer, K.
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• Outcomes of Complex Abdominal Herniorrhaphy Experience With 106 Cases. *Annals of Plastic Surgery*
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  Satterwhite, T. S., Miri, S., Chung, C., Spain, D. A., Lorenz, H. P., Lee, G. K.
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• The forgotten trauma patient: Outcomes for injured patients evaluated by emergency medical services but not transported to the hospital. *Journal of Trauma and Acute Care Surgery*
  Staudenmayer, K., Hsia, R., Wang, E., Sporer, K., Ghilarducci, D., Spain, D., Mackersie, R., Sherck, J., Kline, R., Newgard, C.
  2012; 72 (3): 594-599

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• Under-Utilization of Transfer for Ruptured Abdominal Aortic Aneurysm (rAAA) in the Western United States
  MOSBY-ELSEVIER.2011: 590–91

• Development and Validation of a Brief Self-Report Measure of Trauma Exposure: The Trauma History Screen. *Psychological Assessment*
  2011; 23 (2): 463-477

• Characteristics of Pediatric Trauma Transfers to a Level I Trauma Center: Implications for Developing a Regionalized Pediatric Trauma System in California. *Academic Emergency Medicine*
  2010; 17 (12): 1364-1373

• Early outcomes of deliberate nonoperative management for blunt thoracic aortic injury in trauma. *Journal of Thoracic and Cardiovascular Surgery*
  Caffarelli, A. D., Mallidi, H. R., Maggio, P. M., Spain, D. A., Miller, D. C., Mitchell, R. S.
  2010; 140 (3): 598-605

• Training and Certification in Surgical Critical Care: A Position Paper by the Surgical Critical Care Program Directors Society. *Journal of Trauma-Injury Infection and Critical Care*
  2010; 69 (2): 471-474

• Demographic and Financial Analysis of EMTALA Hand Patient Transfers. *Hand (New York, N.Y.)*
  Melkun, E. T., Ford, C., Brundage, S. I., Spain, D. A., Chang, J.
  2010; 5 (1): 72-76

• Emergency Innovation: Implications for the Trauma Surgeon. *Journal of Trauma-Injury Infection and Critical Care*
  Pretz, J. L., Magnus, D., Spain, D. A.
  2009; 67 (6): 1443-1447

• Massive Transfusion Protocols: The Role of Aggressive Resuscitation Versus Product Ratio in Mortality Reduction. *Journal of the American College of Surgeons*
  Riskin, D. J., Tsai, T. C., Riskin, L., Hernandez-Boussard, T., Purtilt, M., Maggio, P. M., Spain, D. A., Brundage, S. I.
  2009; 209 (2): 198-205

• The impact of hypopituitarism on function and performance in subjects with recent history of traumatic brain injury and aneurysmal subarachnoid haemorrhage. *Brain injury*
Commitment to COT Verification Improves Patient Outcomes and Financial Performance  
*67th Annual Meeting of the American-Association-for-the-Surgery-of-Trauma/Meeting of the Association-for-Acute-Medicine*
Maggio, P. M., Brundage, S. I., Hernandez-Boussard, T., Spain, D. A.  
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An Evaluation of Multidetector Computed Tomography in Detecting Pancreatic Injury: Results of a Multicenter AAST Study  
*JOURNAL OF TRAUMA-INJURY INFECTION AND CRITICAL CARE*
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The impact of hypopituitarism on function and performance in subjects with recent history of traumatic brain injury and aneurysmal subarachnoid haemorrhage  
*BRAIN INJURY*
2009; 23 (7-8): 639-648

Validation of a Prehospital Trauma Triage Tool: A 10-Year Perspective  
*JOURNAL OF TRAUMA-INJURY INFECTION AND CRITICAL CARE*
2008; 65 (6): 1253-1257

Insulin increases the release of proinflammatory mediators  
*63rd Annual Meeting of the American-Association-for-the-Surgery-of-Trauma*
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Responsible development and application of surgical innovations: a position statement of the Society of University Surgeons.  
*Journal of the American College of Surgeons*
2008; 206 (3): 1204-1209

CT angiography effectively evaluates extremity vascular trauma  
*AMERICAN SURGEON*
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County hospital surgical practice: a model for acute care surgery  
*59th Annual Meeting of the Southwestern-Surgical-Congress*
EXCERPTA MEDICA INC-ELSEVIER SCIENCE INC.2007: 758–64

Pediatric blunt abdominal injury: Age is irrelevant and delayed operation is not detrimental  
*64th Annual Meeting of the American-Association-for-the-Surgery-of-Trauma*
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*JOURNAL OF TRAUMA-INJURY INFECTION AND CRITICAL CARE*
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*65th Annual Meeting of the American-Association-for-the-Surgery-of-Trauma*
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• Endovascular management of a gunshot wound to the thoracic aorta *35th Annual Meeting of the Western-Trauma-Association*
  LIPPINCOTT WILLIAMS & WILKINS.2006: 204–8

• Are temporary inferior vena cava filters really temporary? *57th Annual Meeting of the Southwestern-Surgical-Congress*
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• Spontaneous splenic rupture: The masquerade of minor trauma *35th Annual Meeting of the Western-Trauma-Association*
  Tataria, M., Dicker, R. A., Melcher, M., Spain, D. A., Brundage, S. I.
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• Acute care surgery: Trauma, critical care, and emergency surgery *JOURNAL OF TRAUMA-INJURY INFECTION AND CRITICAL CARE*
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  Zakaria, E. R., Garrison, R. N., Spain, D. A., Harris, P. D.
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• The continuing challenge of intra-abdominal infection 27th Annual Surgical Symposium of the Association-of-VA-Surgeons
  Cheadle, W. G., Spain, D. A.
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  Zakaria, E. R., Garrison, R. N., Spain, D. A., Matheson, P. J., Harris, P. D., Richardson, J. D.
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• Resuscitation regimens for hemorrhagic shock must contain blood SHOCK
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• Rates of overtriage & undertriage at a level 1 trauma center 32nd Critical Care Congress of the Society-of-Critical-Care-Medicine
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• Examination of the role of abdominal computed tomography in the evaluation of victims of trauma with increased aspartate aminotransferase in the era of focused abdominal sonography for trauma 59th Annual Meeting of the Central-Surgical-Association
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• Generalized dilation of the visceral microvasculature by peritoneal dialysis solutions 21st Annual Conference on Dialysis
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• Immune-enhancing enteral diet selectively augments ileal blood flow in the rat Annual Meeting of the Association-of-VA-Surgeons
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  Spain, D. A.
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