

BIOGRAPHICAL SKETCH

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NAME: Shahzad Shaefi, MD, MPH

eRA COMMONS USER NAME (credential, e.g., agency login): SSHAEFI

POSITION TITLE: Assistant Professor of Anaesthesia, Beth Israel Deaconess Medical Center, Harvard Medical School

EDUCATION/TRAINING (*Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.*)

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
University College London Medical School, London	BS	07/2000	Microbiology
University College London Medical School, London	MD	02/2001	Medicine
Harvard T.H. Chan School of Public Health, Boston	MPH	05/2017	Clinical Effectiveness

A. Personal Statement

Dr. Shahzad Shaefi obtained his medical degree from University College London, England. After graduation, he pursued his professional training both in the United Kingdom and the United States. He served his internship at Brigham and Women’s Hospital and completed his Anesthesiology Residency at Massachusetts General Hospital. Dr. Shaefi subsequently pursued dual cardiac anesthesia and critical care fellowship training at Columbia University Medical Center. He has also attained a Master in Public Health from Harvard T.H. Chan School of Public Health.

He currently devotes his time as an attending anesthesiologist providing anesthesia care in our cardiac surgical operating rooms as well as intensive care provision in four surgical ICUs at Beth Israel Deaconess Medical Center (BIDMC). He is currently an Assistant Professor of Anaesthesia at Harvard Medical School.

Alongside his clinical practice, Dr. Shaefi has developed an investigational career in research within the fields of cardiac surgery and critical illness. Dr. Shaefi's research program is focused on translational and clinical research surrounding the protective effects of different admixtures of oxygen administered perioperatively, as well as prevention and treatment of Perioperative Neurocognitive Disorders following cardiac surgery.

Additionally, Dr. Shaefi currently serves as the Fellowship Director for the Anesthesia Critical Care Medicine Fellowship in the Department of Anesthesia, Critical Care and Pain Medicine at Beth Israel Deaconess Medical Center (BIDMC). He is an oral board examiner for the ABA part 2 examination. He is the recipient of a FAER Mentored Research Training Grant, the GEMMSTAR Award from the National Institute on Aging and a K08 Career Development Award from NIGMS/ NIH Dr. Shaefi also has received Department of Defense funding.

Dr. Shaefi also engaged in many professional organizations including the SCA, AUA, SOCCA, IARS and ASA. He is the SOCCA liaison to the SCA and a member of the Research and Scientific Program Committees at the SCA, as well as the Education Committee at SOCCA.

B. Positions and Honors

Faculty Academic Appointments

- 2012 Instructor in Anaesthesia, Harvard Medical School
- 2016- Assistant Professor in Anaesthesia, Harvard Medical School

Appointments at Hospitals/Affiliated Institutions

- 2001-2002 Intern, Department of General Surgery, University College Hospital, University College London Medical School, London
- 2002-2003 Intern, Department of Internal Medicine, University College Hospital, University College London Medical School, London
- 2003-2003 Resident, Department of Emergency Medicine, Chelsea & Westminster Hospital, Imperial Medical School, London
- 2003-2004 Resident, Department of Critical Care, Hammersmith Hospital, The Royal Postgraduate Hospital, Imperial Medical School, London
- 2004-2005 Resident, Department of Anesthesiology, The Royal London & St. Bartholomew's Hospitals, The Royal London Medical School, London
- 2005-2006 Intern, Department of General Surgery, Brigham and Women's Hospital, Boston, MA
- 2006-2009 Resident, Department of Anesthesiology, Massachusetts General Hospital, Boston, MA
- 2009-2010 Fellow, Division of Critical Care Medicine, Columbia University Medical Center, New York, NY
- 2010-2011 Fellow, Division of Cardiothoracic Anesthesia, Columbia University Medical Center, New York, NY
- 2012- Staff Anesthesiologist, Department of Anesthesia, Critical Care and Pain Medicine, Beth Israel Deaconess Medical Center, Boston, MA

Major Administrative Leadership Positions

- 2012-2013 Associate Program Director, Critical Care Fellowship Program, Department of Anesthesia, Critical Care and Pain Medicine, Beth Israel Deaconess Medical Center, Boston, MA
- 2012- Co-Director, Basic Assessment and Support in Intensive Care (BASIC) Course, Department of Anesthesia, Critical Care and Pain Medicine, Beth Israel Deaconess Medical Center, Boston, MA
- 2012- Director, MetaVision Electronic Medical Record System Update, Intensive Care Unit, Department of Anesthesia, Critical Care and Pain Medicine, Beth Israel Deaconess Medical Center, Boston, MA
- 2013- Program Director, Critical Care Fellowship Program, Department of Anesthesia, Critical Care and Pain Medicine, Beth Israel Deaconess Medical Center, Boston, MA
- 2015- Program Director, Cardiothoracic Anesthesia Fellowship Program, Department of Anesthesia, Critical Care and Pain Medicine, Beth Israel Deaconess Medical Center, Boston, MA
- 2016- Junior Examiner, Part 2 (Oral) Board Certification Exam, American Board of Anesthesiology
- 2017- Associate Member, Association of University Anesthesiologists
- 2017- Member, Benefits Advisory Committee, Harvard Medical Faculty Physicians, Boston, MA
- 2017- Member, Investment Advisory Committee, Harvard Medical Faculty Physicians, Boston, MA
- 2018- Member, Critical Care Executive Committee, Beth Israel Deaconess Medical Center, Boston, MA

National and Regional Committee Service

- 2016- Fellowship Program Directors Council Member, Society for Cardiovascular Anesthesiologists
- 2016- Chair, Data and Safety Monitoring Board, Neuromuscular Blockade for Post-Cardiac Arrest Care – A Randomized Controlled Trial (PI: M. Donnino, MD)
- 2017- Advisory Committee, Harvard Anesthesia Research Center Grant (T32-GM007592)
- 2017- Advisory Board, Research Assistant Learning Initiative, Beth Israel Deaconess Medical Center
- 2017- Steering Committee, Minimizing ICU Neurological Dysfunction with Dexmedetomidine-induced Sleep (MINDDS): a Randomized Placebo-controlled Clinical Trial (R01 AG053582-01; PI: S. Akeju-Johnson, MD)
- 2017- Scientific Program Committee Member, Society for Cardiovascular Anesthesiologists
- 2017- Research Committee Member, Society for Cardiovascular Anesthesiologists
- 2018- Member, Data and Safety Monitoring Board, Vitamin C, Hydrocortisone, and Vitamin B1 in Severe Sepsis and Septic Shock – A Randomized, Double-Blind, Placebo-Controlled Trial (Foundation Funding: Good Ventures Foundation; PI: M. Donnino, MD)

Honors and Prizes

- 1996 Talalay Prize for Excellence in Pre-clinical Examinations, University College London Medical School
- 2000 British Medical and Dental Students' Association Prize for Elective Study, University College London Medical School
- 2012 Teaching Excellence, Academy of Medical Educators, Beth Israel Deaconess Medical Center
- 2014 Hedley-Whyte Research Award for Research Excellence, Eleanor and Miles Shore 50th Anniversary Fellowship Program for Scholars in Medicine, Harvard Medical School

- 2017 Nominated, Excellence in Mentoring Award, Office for Diversity, Inclusion & Community Partnership, Harvard Medical School
- 2018 Laasberg/Johnson Research Award, Department of Anesthesia, Beth Israel Deaconess Medical Center, Research Excellence and Mentorship

C. Contribution to Science

1. **The Role of Intraoperative Hyperoxia in Perioperative Outcomes:** Oxygen therapy is almost universally titrated to ensure avoidance of potentially injurious periods of hypoxemia. However, the same focus of attention has not been afforded for levels of relative hyperoxia, with the assumption that excess oxygen is relatively harmless. There are emerging clinical data within a variety of arenas that suggest that this assumption may not be true. In order to better elucidate the relationship between oxygen administration and neurocognition I performed a randomized control trial to assess if differing intraoperative oxygen tensions result in changes in the incidence of postoperative delirium and cognitive decline. This work has resulted in several important observations that form the foundation of my work regarding aspects to combat perioperative hyperoxia.
 - a. **Shaefi S**, Marcantonio ER, Mueller A, Banner-Goodspeed V, Robson SC, Spear K, Otterbein LE, O'Gara BP, Talmor DS, Subramaniam B. Intraoperative oxygen concentration and neurocognition after cardiac surgery: study protocol for a randomized controlled trial. *Trials*. 2017 Dec 19;18(1):600. *PMID: 29254495*
 - b. Shankar P, Robson SC, Otterbein LE, **Shaefi S**. Clinical Implications of Hyperoxia. *International Anesthesiology Clinics*. 2018 Winter;56(1):68-79. *PMID: 29227312*
 - c. **Shaefi S**, Talmor DS, Subramaniam B. Oxygen Therapy: When is too much too much? *Anesthesiology*. 2016; 125(3):449-50. *PMID: 27404220*
 - d. **Shaefi S**. Oxygen therapy: Too Much of a Good Thing? International Anesthesia Research Society Annual Meeting, Washington DC 2017

2. **Optimal Methods of Mechanical Ventilation in Acute Respiratory Distress Syndrome (ARDS):** There has been much investigation into optimal methods of lung protection in mechanically ventilated patients with ARDS. While at the Harvard School of Public Health, I undertook a meta-analysis in order to better understand the methodological approach and address this important question, as well as answer questions relating to aspects of protective mechanical ventilation in the operating room and the intensive care unit.
 - a. Beitler JR, **Shaefi S**, Montesi SB, Devlin A, Loring SH, Talmor D, Malhotra A. Prone positioning reduces mortality from acute respiratory distress syndrome in the low tidal volume era: a meta-analysis. *Intensive Care Med*. 2014 Mar;40(3):332-41. *PMID: 24435203*
 - b. **Shaefi S**, Eikermann M. Analysing tidal volumes early after a positive end-expiratory pressure increase: a new way to determine optimal PEEP in the operating theatre? *Br J Anaesth*. 2018 Apr;120(4):623-626. *PMID: 29576103*
 - c. Patlak J, **Shaefi S**, Buhl L, Boone MD. Neurocritical Care Needs Predictive Scores That Succeed at Predicting Failure as Well as They Predict Success. *Anesthesiology*. 2018 Mar;128(3):686-687. *PMID: 29438255*
 - d. Bagchi A, Rudolph MI, Ng PY, Timm FP, Long DR, **Shaefi S**, Ladha K, Vidal Melo MF, Eikermann M. The association of postoperative pulmonary complications in 109,360 patients with pressure-controlled or volume-controlled ventilation. *Anaesthesia*. 2017 Nov;72(11):1334-1343. *PMID: 28891046*

3. **Neurological Outcome and Delirium Following Cardiac and Non-cardiac Surgery:** Perioperative delirium and cognitive dysfunction are common and troublesome conditions following surgery and confer a significant morbid burden. In addition to study protocols for forthcoming prospective interventional trials, I have performed a systematic review of the known literature among non-cardiac surgical patients. Additionally, I examined incidence and trajectory of stroke in the perioperative period.
 - a. Newman S, Stygall J, Hirani S, **Shaefi S**, Maze M. Postoperative cognitive dysfunction after noncardiac surgery: a systematic review. *Anesthesiology*. 2007 Mar;106(3):572-90. *PMID: 17325517*

- b. Bateman BT, Schumacher HC, Wang S, **Shaefi S**, Berman MF. Perioperative acute ischemic stroke in noncardiac and nonvascular surgery: incidence, risk factors, and outcomes. *Anesthesiology*. 2009 Feb;110(2):231-8. *PMID: 19194149*
 - c. Shelton KT, Qu J, Bilotta F, Brown EN, Cudemus G, D'Alessandro DA, Deng H, DiBiasio A, Gitlin JA, Hahm EY, Hobbs LE, Houle TT, Ibala R, Loggia ML, Pavone KJ, **Shaefi S**, Tolis G, Westover MB, Akeju O. Minimizing ICU Neurological Dysfunction with Dexmedetomidine-induced Sleep (MINDDS): protocol for randomised, double-blind, parallel-arm, placebo-controlled trial. *BMJ Open* 2018, Apr 20;8(4):e020316. *PMID: 29678977*
 - d. Shankar P, Mueller A, Packiasabapathy S, Gasangwa D, Patxot M, O'Gara B, **Shaefi S**, Marcantonio ER, Subramaniam B. Dexmedetomidine and intravenous acetaminophen for the prevention of postoperative delirium following cardiac surgery (DEXACET trial): protocol for a prospective randomized controlled trial. *Trials*. 2018 Jun 22;19(1):326. *PMID: 29929533*
4. **Health Services Research Investigations Among Acutely Ill Patients:** There is a well-documented relationship between hospital volume and patient outcome in several disease states. Furthermore, the individual structure of a unit and access to health services may also play a role. I have extended these observations by identifying the relationship between patient volume in severe sepsis and cardiogenic shock, grasped a better understanding of provision of ICU care between the United Kingdom and the United States, and further examined how specialized care within an ICU translates into outcomes.
- a. **Shaefi S**, O'Gara B, Kociol RD, Joynt K, Mueller A, Nizamuddin J, Mahmood E, Talmor D, Shahul S. Effect of cardiogenic shock hospital volume on mortality in patients with cardiogenic shock. *J Am Heart Assoc*. 2015 Jan 5;4(1):e001462. *PMID: 25559014*
 - b. Loberman D, **Shaefi S**, Mohr R, Dombrowski P, Zelman RB, Zheng Y, Pirundini PA, Ziv-Baran T. Trans-catheter aortic valve replacement program in a community hospital - Comparison with US national data. *PLoS One*. 2018 Sep 27;13(9):e0204766. *PMID: 30261048*
 - c. Shahul S, Hacker MR, Novack V, Mueller A, **Shaefi S**, Mahmood B, Ali SH, Talmor D. The effect of hospital volume on mortality in patients admitted with severe sepsis. *PLoS One*. 2014 Sep 29;9(9):e108754. *PMID: 25264788*
 - d. Bennett-Guerrero E, Hyam JA, **Shaefi S**, Prytherch DR, Sutton GL, Weaver PC, Mythen MG, Grocott MP, Parides MK. Comparison of P-POSSUM risk-adjusted mortality rates after surgery between patients in the USA and the UK. *Br J Surg*. 2003 Dec;90(12):1593-8. *PMID: 14648741*

Complete List of Published Work in MyBibliography:

<http://www.ncbi.nlm.nih.gov/pubmed?term=Shaefi%2C%20Shahzad%5BAuthor%5D>