

## Curriculum Vitae

**Date Prepared:** 1/15/2022  
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### Education:

1997	B.A. <i>Magna cum laude, Phi Beta Kappa</i>	Religious Studies- Concentration in Philosophy	Yale College New Haven, CT
1998	Postbaccalaureate Premedical Program	Premedical	Goucher College, Towson, Maryland
2006	M.D. <i>Alpha Omega Alpha</i> , Janeway Prize for the highest achievement and abilities in the graduating class	Medicine	College of Physicians and Surgeons, Columbia University, New York, NY
2011	Program in Clinical Effectiveness		Harvard School of Public Health, Boston, MA
2013	Masters of Science	Epidemiology	Harvard School of Public Health, Boston, MA
2022 (expected)	Masters in Business Administration	Global MBA Program	Imperial College London, School of Business

### Postdoctoral Training:

7/06-6/07	Intern	Medicine	Brigham and Women's Hospital, Boston, MA
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7/07-6/10	Resident	Anesthesia	Massachusetts General Hospital, Boston, MA
1/10-1/11	Chief Resident	Anesthesia	Massachusetts General Hospital, Boston, MA

**Faculty Academic Appointments:**

1/11-11/15	Assistant Professor	Department of Anesthesia, Critical Care, and Pain Medicine (DACCPM)	Harvard Medical School, Boston, MA
11/15- 10/21	Associate Professor	Department of Anesthesia, Critical Care, and Pain Medicine; Department of Anesthesiology, Perioperative and Pain Medicine, Brigham and Women's Hospital	Harvard Medical School, Boston, MA
10/21-	Professor (tenured) and Chair	Department of Anesthesiology, Perioperative, and Pain Medicine	Stanford University School of Medicine

**Appointments at Hospitals/Affiliated Institutions:**

7/11- 3/17	Anesthesiologist	Department of Anesthesia, Critical Care, and Pain Medicine	Massachusetts General Hospital
2/12-10/21	Researcher	Division of Pharmacoepidemiology and Pharmacoeconomics, Department of Medicine	Brigham and Women's Hospital
3/17-10/21	Anesthesiologist	Department of Anesthesiology, Perioperative and Pain Medicine	Brigham and Women's Hospital
10/21-	Anesthesiologist	Department of Anesthesiology, Perioperative and Pain Medicine	Stanford Hospital

**Other Professional Positions:**

1998-1999	High School Biology and Earth Sciences Teacher	Parkwest High School, New York, NY
1999-2001	Research Assistant in Ambrose Cheung's Laboratory	Dartmouth Medical School, Hanover, NH
2016	Consultant	Optum, Inc
2018-2020	Consultant	Action, Inc
2015-	Consultant	ALOSA Foundation

**Major Administrative Leadership Positions:****Local**

2012-2016	Fellowship Co-Director, Perioperative Health Services Research Fellowship	Department of Anesthesia, Critical Care, and Pain Medicine, Massachusetts General Hospital
2017-	Chief, Division of Obstetric Anesthesia	Department of Anesthesiology, Perioperative and Pain Medicine, Brigham and Women's Hospital
2017-	Co-Director, Harvard Program on Perinatal and Pediatric Pharmacoepidemiology (H4P)	Division of Pharmacoepidemiology and Pharmacoeconomics, Department of Medicine, Brigham and Women's Hospital
2019-	Vice Chair for Faculty Development; member of Department Executive Committee	Department of Anesthesiology, Perioperative and Pain Medicine, Brigham and Women's Hospital

**International**

2016-2020	Member, Board of Directors	Society for Obstetric Anesthesia and Perinatology
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**Committee Service:****Local**

2010	Internal Review Committee	Geriatric Medicine Fellowship, Massachusetts General Hospital
2010- 2011	Resident Clinical Competency Committee	Department of Anesthesia, Critical Care, and Pain Medicine, Massachusetts General Hospital
2010- 2013	Residency Recruiting Committee	Department of Anesthesia, Critical Care, and Pain Medicine, Massachusetts General Hospital
2011-2012	Research Mentoring Committee	Department of Anesthesia, Critical Care, and Pain Medicine, Massachusetts General Hospital
2011-2016	Clinical Research Advisory Committee	Department of Anesthesia, Critical Care, and Pain Medicine, Massachusetts General Hospital
2013	Data Safety Monitor Board	Phase I clinical trial conducted at Children's Hospital, Boston
2013	Clinical Research Grants Study Section	Department of Anesthesia, Critical Care, and Pain Medicine, Massachusetts General Hospital
2013-2016	Chair, Clinical Research Advisory Committee	Department of Anesthesia, Critical Care, and Pain Medicine, Massachusetts General Hospital
2018-	Research Advisory Committee	Department of Anesthesiology, Perioperative, and Pain Medicine, Brigham and Women's Hospital

2020-	Faculty Develop and Junior Promotions Committee	Department of Anesthesiology, Perioperative, and Pain Medicine, Brigham and Women's Hospital
2020-	Neuroanesthesia Division Chief Search Committee	Department of Anesthesiology, Perioperative, and Pain Medicine, Brigham and Women's Hospital
2020-	Diversity, Equity, and Inclusion Committee	Department of Anesthesiology, Perioperative, and Pain Medicine, Brigham and Women's Hospital
<b>Regional</b>		
2012-2019	Massachusetts Maternal Mortality Review Committee	Department of Public Health, Commonwealth of Massachusetts
2015	Obstetrical Advisory Group focused on the measurement of obstetrical complications and trauma	Blue Cross Blue Shield of Massachusetts
<b>National</b>		
2014	Temporary voting member, Anesthetic and Analgesic Drug Products Advisory Committee	Food and Drug Administration
2015-2019	Standing member, Anesthetic and Analgesic Drug Products Advisory Committee	Food and Drug Administration
2015-2020	Data Use Committee	Anesthesia Quality Institute
2016	Technical Advisory Panel (TAP) for new pain management standards	The Joint Commission
2017-2018	Subcommittee on Opioid Misuse in Medicaid	Institute for Medicaid Innovation
2017	Panelist, Packaging, Storage, and Disposal Options to Enhance Opioid Safety: Exploring the Path Forward Workshop	Food and Drug Administration

2018	Member, Opioid Prescribing Estimates Workgroup	National Center for Injury Prevention and Control, Centers for Disease Control and Prevention
2019-2020	Treatments for Acute Pain Technical Expert Panel	Agency for Healthcare Research and Quality Systematic Review
2020-	The Equitable Maternal Health Coalition Data Workgroup	Equitable Maternal Health Coalition (organized by the March of Dimes)
2021	Panelist, Exploring Options for Safe and Effective In-Home Opioid Disposal	Food and Drug Administration/Duke-Margolis
2021-2025	Chairperson, Anesthetic and Analgesic Drug Products Advisory Committee	Food and Drug Administration

**International**

2015	Expert panel; Invasive Placentation: Clinical Guideline Development	Women and Babies Program, Department of Evaluative Clinical Sciences, Sunnybrook Research Institute
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**Professional Societies:**

2011-present	Society for Obstetric Anesthesia and Perinatology	Member
	2011-present	Research Committee
	2016-2020	Board of Directors (Journal Liaison)
2011-present	American Society of Anesthesiology	Member
	2012-2014	Abstract Review Subcommittee on Obstetric Anesthesia and Perinatology
	2015	Consultant for the “Practice Guidelines for Obstetric Anesthesia”
2013-2016	Association of Women’s Health, Obstetric & Neonatal Nurses (AWHONN)	Expert Panel Member, Anesthesia representative, Obstetrical Hemorrhage Quality Improvement Project

		Data Panel Member, Obstetrical Hemorrhage Quality Improvement Project
2014	American Academy of Orthopaedic Surgeons/American Society of Anesthesiology	Panel Member, Consensus statement for the Clinical Practice Guideline on the Management of Hip Fractures in the Elderly
2014-2015	American Congress of Obstetrics and Gynecology/American Society of Anesthesiology	Maternal Quality Improvement Program (MQIP) Advisory Committee
2013-	International Society of Pharmacoepidemiology	Co-developed and taught Modern Pregnancy Pharmacoepidemiology Methods course given at the annual meeting

**Grant Review Activities:**

2011	Invited External Grant Reviewer	Australian Government National Health & Medical Research Council
2012	Invited External Grant Reviewer	The Netherlands Organization for Health Research & Development
2013	Temporary Member	NHLBI Clinical Trials Review Committee, March, 2013
2013	Temporary Member	NHLBI Clinical Trials Review Committee, October, 2013
2015	Grant Reviewer	Gertie Marx Grant, Society for Obstetric Anesthesia and Perinatology
2017	Merit Reviewer and substitute Section Chair	Patient Centered Outcomes Research Institute (PCORI) Study Section, March 2017

2017	Grant Reviewer	NIDA, Special Emphasis Panel/Scientific Review Group, July 2017
2017	Grant Reviewer	Harvard Catalyst Data Ideation Challenge October 2017
2017	Grant Reviewer	Write in reviewer, NICHD, November 2017
2018	Grant Reviewer	NIDA, Multisite reviewer, February 2018
2018	Grant Reviewer	Development of Medications to Prevent and Treat Opioid Use Disorders and Overdose—NIDA, Special Emphasis Panel. May 16, 2018
2018	Grant Reviewer	Israel Society of Anesthesia grant, October 29, 2018
2018	Grant Reviewer	Maternal, Newborn, Child, and Youth Strategic Clinical Network's (MNCY SCN), Calgary Alberta February 25, 2019
2018	Grant Reviewer/Meeting chair	NIDA, Special emphasis panel, March 7, 2019
2019	Grant Reviewer	NIDA, Special emphasis panel, May 22, 2019
2019	Grant Reviewer	Health Research Board, Ireland
2021	Grant Reviewer	National Medical Research Council, Singapore
2021	Grant Reviewer	NIH, Special Emphasis Panel, Population Sciences and Epidemiology. April 6, 2021



**United States Food and Drug Administration Advisory Committee Meetings**

<b>Date</b>	<b>Committee</b>	<b>Role</b>
June 11-12, 2014	Anesthetic and Analgesic Drug Products Advisory Committee	Voting member
November 24-25, 2014	Anesthetic and Analgesic Drug Products Advisory Committee	Voting member
September 10, 2015	Anesthetic and Analgesic Drug Products Advisory Committee	Voting member
September 11, 2015	Anesthetic and Analgesic Drug Products Advisory Committee	Voting member
May 3-4, 2016	Anesthetic and Analgesic Drug Products Advisory Committee	Voting member
May 5, 2016	Anesthetic and Analgesic Drug Products Advisory Committee	Voting member
June 7, 2016	Anesthetic and Analgesic Drug Products Advisory Committee	Voting member
August 5, 2016	Anesthetic and Analgesic Drug Products Advisory Committee	Voting member
September 15-16, 2016	Anesthetic and Analgesic Drug Products Advisory Committee	Voting member
October 5, 2016	Anesthetic and Analgesic Drug Products Advisory Committee	Voting member
March 13-14, 2017	Anesthetic and Analgesic Drug Products Advisory Committee	Voting member
April 5, 2017	Anesthetic and Analgesic Drug Products Advisory Committee	Voting member
September 14, 2017	Anesthetic and Analgesic Drug Products Advisory Committee	Acting Chairperson

February 14, 2018	Anesthetic and Analgesic Drug Products Advisory Committee	Voting member
August 3, 2018	Joint meeting of the Drug Safety and Risk Management Advisory Committee and the Anesthetic and Analgesic Drug Products Advisory Committee	Acting Chairperson
November 14, 2018	Joint meeting of the Drug Safety and Risk Management Advisory Committee and the Anesthetic and Analgesic Drug Products Advisory Committee	Acting Chairperson
September 10/11, 2020	Joint meeting of the Drug Safety and Risk Management Advisory Committee and the Anesthetic and Analgesic Drug Products Advisory Committee	Voting member
November 2, 2020	Joint meeting of the Drug Safety and Risk Management Advisory Committee and the Anesthetic and Analgesic Drug Products Advisory Committee	Acting Chairperson

### **Editorial Activities:**

- **Ad hoc Reviewer**

*\*Indicates 5 or more reviews*

*Anesthesia and Analgesia\**

*American Journal of Epidemiology*

*American Journal of Obstetrics and Gynecology\**

*American Journal of Perinatology*

*American Journal of Preventive Medicine*

*American Journal of Respiratory and Critical Care Medicine*

*Anesthesiology\**

*Journal of Clinical Anesthesia*

*British Journal of Obstetrics and Gynecology*

*BMC Pregnancy and Childbirth*

*BMJ Quality and Safety*

*British Medical Journal*

*British Journal of Anesthesia*

*Circulation\**

*Circulation: Cardiovascular Quality and Outcomes*  
*Clinical Pharmacology & Therapeutics*  
*Drug and Alcohol Dependence*  
*Drug Safety*  
*Epidemiology*  
*European Journal of Neurology*  
*European Journal of Obstetrics and Gynecology and Reproductive Medicine*  
*Intensive Care Medicine*  
*International Journal of Stroke*  
*New England Journal of Medicine\**  
*Pediatric Research*  
*Perioperative Medicine*  
*PLoS One*  
*PLoS Medicine*  
*Pharmacoepidemiology and Drug Safety*  
*Hypertension*  
*The Joint Commission Journal on Quality and Patient Safety*  
*Journal of Women's Health*  
*JAMA*  
*JAMA Pediatrics*  
*JAMA Internal Medicine*  
*JAMA Network Open*  
*JAHA-Journal of the American Heart Association*  
*Journal of Obstetrics and Gynaecology Research*  
*Journal of Neurosurgical Anesthesiology*  
*Perioperative Medicine*  
*Obstetrics and Gynecology\**  
*Transfusion*  
*Tropical Medicine & International Health*

• **Other Editorial Roles**

2014-2020	Associate Editor	Anesthesiology (>250 completed reviews)
2021-	Editor	Anesthesiology
2019-present	Associate Editor	Frontiers in Global Reproductive Health
2014	Expert Reviewer	Evidence Review “Management of Postpartum Hemorrhage”, Agency for Healthcare Research & Quality Report

2018	Associate Editor	Chestnut's Obstetric Anesthesia: Principles and Practice. 6 <sup>th</sup> edition
2019	Reviewer	"Framing Opioid Prescribing Guidelines for Acute Pain: Developing the Evidence", National Academy of Medicine
2020	Reviewer	"Treatments for Acute Pain: A Systematic Review" for the AHRQ Evidence-based Practice Center Program
2020	Reviewer	Doctoral thesis from the Faculty of Health Sciences, University of Witwatersrand, Johannesburg, South Africa
2020	Associate Editor	Colorado's Opioid Solution: Clinicians United to Resolve the Epidemic (CO's CURE) Obstetrics and Gynecology 2020 Opioid Prescribing and Treatment Guidelines

**Honors and Prizes:**

2005	Alfred Steiner Award for Most Outstanding Medical Student Research, Dean's Day Poster Session	Columbia University College of Physicians and Surgeons	
2006	Elected to the Arnold P. Gold Humanism Honors Society	Columbia University College of Physicians and Surgeons	
2006	The Doctors William Nastuk, Beatrice Seegal, Konrad Hsu Award	Columbia University College of Physicians and Surgeons	To a graduating student who has demonstrated successful research collaboration between student and faculty

2006	Virginia P. Apgar Award	Columbia University College of Physicians and Surgeons	For Excellence in Anesthesia and Critical Care
2006	Janeway Prize	Columbia University College of Physicians and Surgeons	For the highest achievement and abilities in the graduating class
2008	Foundation for Anesthesia Education and Research /Abbott Resident Scholar	American Society of Anesthesiologist Annual Meeting	
2009, 2012	Research Abstract Selected as one of 12 Best Abstracts of Meeting	American Society of Anesthesiologist Annual Meeting	
2009	Manuscript “Perioperative Acute Ischemic Stroke in Non-Cardiac and Non-Vascular Surgeries: Incidence, Risk factors and Outcomes”, was one of 12 articles in the <i>Anesthesiology</i> 2009 Year in Review.	Journal <i>Anesthesiology</i>	The review highlighted “articles that the Editorial Board believed exemplified the mission of Anesthesiology, to advance the science and practice of perioperative, critical care, and pain medicine through the promotion of seminal discovery.”
2011, 2012, 2014, 2015, 2019, 2020	Research Abstract Selected as one of 6 Best Papers of the Meeting	Society of Obstetric Anesthesiology and Perinatology Annual Meeting	
2011	Research abstract, “The Influence of Patient Co-Morbidities on the Risk of Near-miss Maternal Morbidity and Mortality” Awarded Best Patient Safety Paper (Co-first author)	Society of Obstetric Anesthesiology and Perinatology Annual Meeting	

2011	Research abstract “Exome sequencing in severe, early-onset preeclampsia” 2 <sup>nd</sup> prize, departmental award (first author)	MGH Clinical Research Day
2012	Research abstract “Hypertension risk variants and risk of preeclampsia” 2 <sup>nd</sup> prize, departmental award (second author)	MGH Clinical Research Day
2012, 2013	Top 10% of Reviewers	<i>Journal Anesthesiology</i>
2013	Selected for NIH loan repayment program	National Institutes of Child Health and Human Development
2014	First author of paper (Type of stress ulcer prophylaxis and the risk of nosocomial pneumonia in cardiac surgical patients: a cohort study) awarded the American Society of Health-System Pharmacist Literature Drug Therapy Research Award	
2015	Research abstract: “Labor Induction and Offspring Risk of Autism Spectrum Disorder” won second-prize Best Papers of the Meeting session (first author)	Society of Obstetric Anesthesiology and Perinatology Annual Meeting

2015	Research abstract, "Labor Induction and Offspring Risk of Autism Spectrum Disorder" Awarded Runner-up for Best Patient Safety Paper (first author)	Society of Obstetric Anesthesiology and Perinatology Annual Meeting	
2015	Elected to the Association of University Anesthesiologist		
2016	Research abstract, "Peripartum sepsis: A case control study" Awarded Best Patient Safety Paper (Senior author)	Society of Obstetric Anesthesiology and Perinatology Annual Meeting	
2016	First prize, Gertie Marx Competition for the Best Abstract Presented by a Resident/Fellow (Senior author)	Society of Obstetric Anesthesiology and Perinatology Annual Meeting	
2017	Top Reviewer	Pharmacoepidemiology and Drug Safety	
2017	First prize, Gertie Marx Competition for the Best Abstract Presented by a Resident/Fellow (Senior author)	Society of Obstetric Anesthesiology and Perinatology Annual Meeting	
2017	Gerald Ostheimer Memorial Lecturer	Society of Obstetric Anesthesiology and Perinatology	Honors "a leading clinician, research scientist, and/or educator who has made significant contributions to the field of obstetric anesthesia"

2018	James E. Cottrell Presidential Scholar Award	American Society of Anesthesiologists	Given to one clinical- scientist each year within 10 years of initial faculty appointment for accomplishment in research.
2019	First Prize (Clinical research), Best Abstract of Meeting (First author)	Society of Obstetric Anesthesiology and Perinatology Annual Meeting	
2019	Nominated for Honorary Citizen of Hanoi, Vietnam designation		For leading collaboration between Brigham and Women's Hospital and Hanoi Hospital for Obstetrics and Gynecology
2020	First Prize (Clinical research), Best Abstract of Meeting (Senior author)	Society of Obstetric Anesthesiology and Perinatology Annual Meeting	
2021	Ronald D. Mann Best Paper Award	<i>Pharmacoepidemiology and Drug Safety</i>	

### **Report of Funded and Unfunded Projects**

#### **Past**

- 2004-2004    Studies in stroke epidemiology (PI: Bateman)  
Doris Duke Clinical Research Fellowship  
Medical student mentored research training grant  
Goal: Performed mentored research focused on the epidemiology of stroke treatment
- 2011-2012    Case-crossover study of triggers of preterm labor/rupture of membranes (co-PI:  
Hernandez-Diaz/Bateman)  
Harvard School of Public Health Incubator Grant  
Co-Principal Investigator  
Goal: To define potentially modifiable triggers of preterm labor and rupture of  
membranes
- 2011-2012    Training in the epidemiology of pregnancy-related disorders (PI: Miller)



- Basic Science Research Training for Anesthetists  
T32 GM007592  
Role: T32 Trainee  
Goal: To receive training in the conduct of epidemiologic research, focused on pregnancy-related disorders
- 2013-2015 The Genetic Predisposition to Cardiovascular Disease and the Risk of Preeclampsia (co-PI: Saxena/Bateman).  
Gertie Marx Research Award  
Co-Principal Investigator  
Goal: To define the association between CV disease risk variants on the risk of preeclampsia
- 2016-2017 Thromboembolic outcomes with the FEIBA and rFVIIa  
Baxalta  
Principal investigator  
To conduct the assessment of thromboembolic outcomes associated with the FEIBA and/or rFVIIa in hemophilia A and hemophilia B patients with inhibitors
- 2017 FDA Scientific Inquiry related to Opioid Prescribing  
Lead Investigator  
Study defined opioid prescribing patterns in the primary care setting in response to a FDA request under Scientific Program to Support Pharmacoepidemiologic Investigations of Safety Related Issues of Marketed Drugs, and Evaluations of Risk Communications and Management Programs contract
- 2016-2017 Using Claims Data to Define Opioid Misuse and Abuse  
Pfizer Inc. (PI: Bateman)  
Principal Investigator  
To implement published claims-based algorithms to identify patients with potential opioid misuse/abuse based on opioid filling patterns and to validate these algorithms with outcomes of physician-diagnosed opioid abuse or overdose. To identify those components of the previously described algorithms with the best performance characteristics and to integrate these into a novel, claims-based algorithm for identifying opioid abuse/misuse based on opioid filling patterns.
- 2013-2017 Hypertensive disorders and diabetes during pregnancy and development: A nationwide study of the Icelandic birth cohort (PI: Zoega)  
Icelandic Centre for Research 130814-051  
Co-Principal Investigator  
Goal: To examine the long-term neurocognitive effects of in-utero exposure to maternal hypertensive disorders and diabetes
- 2013-2018 Comparative safety and effectiveness of antihypertensives in pregnancy National Institute Of Child Health & Human Development of the National Institutes of Health/K08HD075831 (PI: Bateman)  
Principal Investigator  
To define the comparative safety and effectiveness of antihypertensive medications commonly used during pregnancy

- 2016-2018    Observational Studies to Assess Maternal and Fetal Outcomes Following Exposure to a Pain Medication (PI: Huybrechts)  
Eli Lilly and Company  
Co-Principal Investigator  
To evaluate maternal and fetal/infant outcomes associated with exposure to a pain medication in order to meet the Food and Drug Administration requirement for post-marketing surveillance.
- 2017-2019    Ondansetron and risk of congenital malformations  
NIH: National Institute of Child Health and Human Development/R03HD091699  
01(PI: Krista Huybrechts)  
Co-Investigator  
R03 reviewed in October 2016 and received an impact score of 10, 1st percentile. The study objective is to evaluate the risk of congenital heart defects and cleft palate associated with ondansetron use during pregnancy in a national cohort we developed of 1.6 million pregnancies covered by Medicaid.
- 2017-2019    Pregnancy Registries Nested in International Pooled Health Care Databases  
NIH: National Institute of Child Health and Human Development/R21HD092879  
01(PI: Sonia Hernandez-Diaz)  
Co-Investigator  
To develop methodology to for pooling data from the United States, Denmark, Finland, Iceland, Norway, and Sweden to study drug safety in pregnancy.
- 2016-2018    Observational Cohort Study to Assess Maternal Asthma During Pregnancy and Fetal Outcomes  
GSK  
Site-PI (PI: Sonia Hernandez-Diaz)  
specifically identifying asthma and asthma severity in women in the MAX pregnancy cohort and the impact of this condition on relevant infant outcomes.
- 2019-2021    Engaging clinicians to improve opioid safety and reduce overdose risk  
Centers for Disease Control and Prevention  
(PI: Michael Fischer)  
Co-Investigator  
The goal of the proposed study is to evaluate the impact of an academic detailing program that aims to improve opioid prescribing.
- 9/15/2017-  
7/31/2021    The Impact of Prescription Opioid Use on Pregnancy Outcomes  
NIH: National Institute on Drug Abuse/1R01DA044293-01A1 (PI: Brian Bateman)  
Principal investigator  
*Reviewed in June 2017 and received an impact score of 14, 1st percentile.*  
The goal of the proposed study is to provide robust information on the effects of prescription opioid use during pregnancy.
- 9/28/2017-  
9/27/2021    Developing the Capability of Using National Medicaid Data for FDA Post-Marketing Surveillance to Assess Medication Safety During Pregnancy  
Food and Drug Administration (PI: Krista Huybrechts)

Co- Principal Investigator

The goal of the proposed study is to define methods to use nationwide Medicaid healthcare utilization data to study medication safety during pregnancy.

8/1/2018-  
5/31/2021

Epidemiology and risk of antipsychotic use in hospitalized elderly with delirium  
NIH: National Institutes of Aging/1R01AG056368-01A1

Co-Investigator (PI: Dae Kim)

To determine the epidemiology and risk of the off-label use of antipsychotics and their alternatives in hospitalized older adults with postoperative delirium.

7/1/2018-  
6/30/2021

Acute Pain Management and Long-term Opioid Use after Surgery  
National Institute of Drug Abuse of the National Institutes of Health/1R01DA042299-01A1

Co-Investigator (PI: Wunsch/Neuman)

Using data from the US and Canada, this study will identify which patients are at highest risk of taking opioid medications long-term after surgery and will assess ways to try to decrease that risk.

2019-2021

Randomized cardiovascular trials duplicated using prospective longitudinal insurance claims: applying techniques of epidemiology (RCT DUPLICATE)

NIH: National Heart, Lung, and Blood Institute

Co-Investigator (PI: Jessica Franklin)

The proposed project provides fundamental knowledge on what types of clinical questions can be answered with real world data and with which methods. Findings will impact public health by improving the conduct of real-world data studies.

8/2020-  
7/2021

Postpartum Opioid Related Mortality in Medicaid Patients

NIH: National Institute on Drug Abuse/ 3R01DA049822-01(PI: Bateman/  
Huybrechts)

Principal Investigator

Administrative supplement

To define patterns of opioid-related mortality in pregnancy and the postpartum in Medicaid beneficiaries

**Current**

9/1/2019-  
5/31/2024

Comparative Safety of Non-Insulin Agents in Pregnant Women with Pregestational Diabetes.

NIH: National Institute of Child Health and Human Development/R01HD097778 (PI: Sonia Hernandez-Diaz)

Co-Investigator

The goal of the proposed studies are to define the comparative safety of medications used to treat pre-existing diabetes in pregnancy.

- 6/15/2018-3/31/2023 In-utero exposure to psychotropic medications and the risk of neurodevelopmental disorders  
 NIH: National Institutes of Mental Health/1 R01 MH116194-01  
 Co-Investigator (PI: Krista Huybrechts)  
 To identify the impact of psychotropic medication use during pregnancy on the risk of neurodevelopmental disorders in the offspring.
- 4/1/2020-12/30/2023 The Comparative Effectiveness and Safety of Pharmacotherapies for the Treatment of Opioid Use Disorder in Pregnancy  
 NIH: National Institute on Drug Abuse/ 1R01DA049822-01 (PI: Bateman/Huybrechts)  
 Principal investigator  
*Reviewed in June 2019 and received an impact score of 16*  
 The goal of the study is to establish the approach to the treatment of opioid use disorder in pregnancy that is safest and most effective.
- 9/2020-7/2024 Drug interactions and opioid-related emergency room visits and hospitalizations among older adults  
 Agency for Healthcare Research and Quality/ /R01HS027623 (PI:Gagne)  
 Co-Investigator  
 To evaluate drug-drug interactions and the risk for increasing opioid-related adverse outcomes.
- 4/2021-3/2025 Active Surveillance of the Safety of Antipsychotic Medications in Pregnancy  
 National Institutes of Health/ 1R01HD104646-01 (PI: Huybrechts)  
 Co-Investigator  
 To develop and employ active surveillance methods (e.g., TreeScan) to study the safety of antipsychotic use in pregnancy.

### **Projects Submitted for Funding**

- 2020-2023 (Pending) Safety of Benzodiazepines and Non-Benzodiazepine Sedative Hypnotics in Pregnancy  
 NIMH (PI: Bateman/ Huybrechts)  
 Principal investigator  
 The goal is to evaluate the safety of benzodiazepines and sedative hypnotics when used during etiologically relevant periods in pregnancy.

### **Training Grants and Mentored Trainee Grants**

- 2019- Genome Wide Association Study of Patients with History of Postpartum Hemorrhage

Mentored Research Training Grant, Foundation for Anesthesia Education and Research

Co-Mentor/PI: Vesela Kovacheva

To define maternal genetic variants by performing the first genome-wide association study of PPH. These results will identify novel targets for PPH prediction and therapy.

2019-2020 Second-line Uterotonics in Postpartum Hemorrhage: A Randomized Clinical Trial.  
BWH Faculty Career Development Award  
Mentor/PI: Naida Cole  
To evaluate the comparative effectiveness of methergine versus hemabate for the treatment of uterine atony

2019- Tranexamic Acid Administered After Delivery: Maternal Pharmacokinetics, Pharmacodynamics, and Coagulation Status.  
Society of Obstetric Anesthesia and Perinatology (SOAP) Young Investigator Grant  
Mentor/PI: Sara Seifert  
To model the PK/PD of tranexamic acid for the prevention of severe postpartum hemorrhage

2019- Tranexamic Acid and ROTEM  
BWH Anesthesiology seed grant  
Mentor/PI: Michaela Farber  
To examine the relationship between TXA PK/PD and ROTEM parameters

### **Report of Local Teaching and Training**

#### **Formal Teaching of Residents, Clinical Fellows and Research Fellows (post-docs):**

2011-2012	Introduction to airway management Anesthesia Residents	Massachusetts General Hospital 2 hours/year
2011-2016	Sedative/hypnotic drugs Anesthesia Residents	Massachusetts General Hospital 2 hours/year
2011-2016	Obstetric emergencies Anesthesia Residents	Massachusetts General Hospital 2 hours/year
2013-2015	Drug safety study in perioperative setting Medicine Residents	Brigham and Women's Hospital 1 hour/year
2017-	Lectures in obstetric anesthesia	Brigham and Women's Hospital 2-3 hours/month

### **Clinical Supervisory and Training Responsibilities:**

2011-present	Supervise residents in the operating room and on labor and delivery floor	1 day per week and during call
2012-2014	Leader, Departmental Journal Club; Department of Anesthesia, Critical Care, and Pain Medicine, Massachusetts General Hospital	4 times per year, anesthesia residents, fellows, faculty

### **Formally Mentored Harvard Medical, Dental and Graduate Students:**

2014-2015	James Baker/Harvard Dental Student	Mentored student in a study examining patterns of opioid prescribing after dental surgery; Awarded the Judah Folkman Prize for Clinical / Translational Science Research at the Soma Weiss Student Research Day at HMS; Research published in <i>JAMA</i> . Manuscript #78 in the <u>Report of Scholarship</u>
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### **Other Mentored Trainees and Faculty:**

2011	Vanessa Olbrecht/ Assistant Professor in the Department of Anesthesia at Cincinnati Children's Hospital Medical Center	Mentored resident in completion of research project on subarachnoid hemorrhage in the peripartum period; 2 <sup>nd</sup> prize in Gertie Marx completion at Society of Obstetric Anesthesiology and Perinatology Annual Meeting; Research published in <i>Anesthesiology</i> . Publication #21 in the <u>Report of Scholarship</u>
2011	Jonathan Wanderer/ Associate Professor, Department of Anesthesiology, Vanderbilt University	Mentored resident in completion of research project on peripartum ICU utilization; oral presentation at Society of Obstetric Anesthesiology and Perinatology Annual Meeting; Research published in <i>Critical Care Medicine</i> . Publication #40 in the <u>Report of Scholarship</u>
2012	Matthew Sigakis/Faculty, University of Michigan	Mentored resident in completion of research project on ICD 9 validation of obstetric morbidity diagnoses; poster presentation at Society of Obstetric Anesthesiology and

Perinatology Annual Meeting; Research published in *Anesthesia and Analgesia*.  
Publication #88 in the Report of Scholarship

2012 Ade Haastrup/Private Practice

Mentored resident in completion of research project on peripartum cardiomyopathy; poster presentation at Society of Obstetric Anesthesiology and Perinatology Annual Meeting

2014 Ayumi Maeda/Faculty, Tokyo

Mentored resident in completion of research project on opioid abuse and obstetric outcomes; Top 6 abstracts selected for Gertie Marx resident research completion at Society of Obstetric Anesthesiology and Perinatology Annual Meeting; Research published in *Anesthesiology*. Publication #49 in the Report of Scholarship

2014-2015 Karim Ladha/Faculty, University of Toronto

Mentored this fellow during his participation in the Health Services Research Fellowship; this work led to the completion of 2 manuscripts published in *Anesthesiology*; #81, 82 in the Report of Scholarship

2016 Emily McQuaid/Private Practice, Montana

Mentored this fellow in the completion of a research project during her OB anesthesia fellowship/Podium presentation, SOAP meeting, manuscript published in *Obstetrics and Gynecology*, Publication #107 in the Report of Scholarship

2016 Fridgeir Andri Sverrisson/Doctoral student

External advisor for Master's thesis, University of Reykjavík

2015-2018 Malavika Prabhu/Maternal Fetal Medicine Fellow

Mentored fellow in completion of a research project during her MFM fellowship, manuscripts published in *Obstetrics and Gynecology*, Publication #107, in the Report of Scholarship

2015-2017 Mallika Mundkur/Medical officer, Food and Drug Administration,

Mentored fellow in completion of a research project during her general medicine fellowship; manuscript published in *Pharmacoepidemiology and Drug Safety*, Publication #126 the Report of Scholarship

2016-2017 Kathryn Rough/ Scientist at Google

Mentored as doctoral student at the Harvard School of Public Health and as a postdoctoral fellow. Publications #87 and 150 in the Report of Scholarship

- 2017-2018 Naida Cole/Faculty at BWH  
Mentored this fellow in the completion of a research project during her OB anesthesia fellowship. Manuscript in preparation
- 2017-2019 Sarah Rae Easter/Faculty at BWH  
Mentored fellow in completion of a research project during her MFM fellowship, manuscripts published in *Obstetrics and Gynecology* and the *American Journal of Obstetrics and Gynecology*, Publication #139 and 140 in the Report of Scholarship
- 2017-2019 Erica Holland/Faculty at Boston Medical Center  
Mentored fellow in completion of a research project during her MFM fellowship, manuscripts published in *Obstetrics and Gynecology*. Publication #140 in the Report of Scholarship
- 2017-2019 Emily Naoum/Fellow at University of Michigan  
Mentored resident in completion of a review article, manuscript published in *Anesthesiology*. Publication #15 in Review articles.
- 2016-2018 Yoonyoung Park/Scientist at IBM  
Part of team that mentored student during her doctoral studies at the Harvard School of Public Health; manuscripts published in *American Journal of Psychiatry* and *BMJ*. See publication #128, 129 in the Report of Scholarship
- 2017- Vesela Kovacheva/Faculty at Brigham and Women's Hospital  
Co-mentor for Foundation for Anesthesia Research (FAER) grant career development award
- 2018-2019 Rochelle Molitor/Faculty at the Mayo Clinic  
Mentored fellow in a project examining location of delivery for women with abnormal placentation. Abstract presented at the Society for Obstetric Anesthesia and Perinatology. Manuscript in preparation
- 2017-2019 Yanmin Zhu, PhD/Postdoctoral Fellow at Brigham and Women's Hospital
- 2018- Daina Esposito, MPH/ Doctoral Student at Boston University School of Public Health
- 2018- Sara Seifert, MD/ Obstetric Anesthesia Fellow
- 2018-2020 Jenny Sun, MS/Doctoral Student at Harvard T.H. Chan School of Public Health
- 2018- David Combs, MD, PhD/Obstetric Anesthesia Fellow



### Local Invited Presentations:

*No presentations below were sponsored by 3<sup>rd</sup> parties/outside entities*

- 2008            “Postpartum Hemorrhage: Epidemiology and Approach to Treatment”/ Case Conference, Speaker  
Department of Anesthesia and Critical Care, MGH
- 2008            “POISE trial: Implications for Our Practice of Perioperative Beta-Blockade”/Department Conference, Speaker  
Department of Anesthesia and Critical Care, MGH
- 2011            “Antihypertensive Medications in Pregnancy” / Seminar  
Division of Pharmacoepidemiology and Pharmacoeconomics, BWH
- 2013            “The Epidemiology of Postpartum Hemorrhage” / Grand Rounds speaker  
Beth Israel Deaconess Medical Center, Boston, MA
- 2014            “Familial Aggregation of Postpartum Hemorrhage”/ MGH Center for Human Genetic Research seminar  
Massachusetts General Hospital, Boston, MA
- 2015            “The Epidemiology of Postpartum Hemorrhage” / Grand Rounds speaker  
South Shore Hospital, South Weymouth, MA
- 2016            “Epidemiology of Postpartum Hemorrhage”/Visiting Professor  
Department of Anesthesiology  
Brigham and Women’s Hospital  
Boston, MA
- 2018            “Opioid Use in Pregnancy and the Postpartum”/Visiting Professor  
Beth Israel Deaconess Medical Center  
Boston, MA
- 2018            “Opioid Use in Pregnancy and the Postpartum”/Visiting Professor  
Tufts School of Medicine  
Boston, MA
- 2019            “HELLP! How to Keep Moms with Preeclampsia Safe”/ Invited presentation  
Harvard Anesthesia Review Course, Boston, MA

## **Report of Regional, National and International Invited Teaching and Presentations**

*No presentations below were sponsored by 3<sup>rd</sup> parties/outside entities*

### **Regional**

- 2012      “Maternal Hemorrhage”/Invited presentation  
Massachusetts Perinatal Quality Collaborative (March of Dimes)  
Boston, MA
- 2014      “Interpreting Comparative Effectiveness and Safety Studies Based on  
Healthcare Utilization Data” /Invited presentation  
Harvard Anesthesia Review Course  
Boston, MA
- 2015      “Epidemiology of Postpartum Hemorrhage” / Invited presentation  
Massachusetts Perinatal Quality Collaborative's Spring 2015 Summit, Waltham, MA

### **National**

- 2008      "The Epidemiology of Postpartum Hemorrhage in a Nationwide Sample of Deliveries  
in the United States"/ Podium Presentation. Obstetrics Session  
American Society of Anesthesiologist Annual Meeting  
Orlando, FL
- 2009      "Temporal Trends in the Epidemiology of Severe Postoperative Sepsis Following  
Elective Surgery: A Large, Nationwide Sample " / Oral Presentation. Best Abstracts of  
the Meeting: Anesthesiology Editors' Picks Special Session  
American Society of Anesthesiologist Annual Meeting  
New Orleans, LA
- 2011      “Peripartum hysterectomy—Nationwide 14-year experience” / Oral Presentation. Best  
Abstracts of the Meeting  
Society of Obstetric Anesthesiology and Perinatology Annual Meeting  
Las Vegas, NV
- 2012      “Recurrence of Postpartum Hemorrhage—the Swedish Medical Birth Register” / Oral  
Presentation. Best Abstracts of the Meeting  
Society of Obstetric Anesthesiology and Perinatology Annual Meeting  
Monterey, CA
- 2012      “Coagulopathy: Nuts and Bolts to Cutting Edge” / Research Symposium  
Society of Obstetric Anesthesiology and Perinatology Annual Meeting  
Monterey, CA

- 2012 “The Epidemiology of Postpartum Hemorrhage”/ Invited presentation  
Vanderbilt University  
Nashville, TN
- 2012 “Use of claims data in clinical research” /Invited Presentation  
Multicenter Perioperative Outcomes Group Consortium Meeting  
American Society of Anesthesiologist, Annual Meeting  
Washington, DC
- 2013 “The Epidemiology of Postpartum Hemorrhage” / Visiting Professor  
University of Michigan, Department of Anesthesiology  
Ann Arbor, MI
- 2013 “Patterns of Antihypertensive Use in Pregnancy” / Invited Lecture  
Center for Disease Control and Prevention,  
Atlanta, GA, by Teleconference
- 2013 “Development and Validation of an Obstetric Comorbidity Index” / Consultative  
working group on obstetric morbidity in the United States  
Centers for Disease Control and Prevention  
Atlanta, GA
- 2013 “Role of hypertension genetic factors in susceptibility to preeclampsia” / Presentation.  
Best Abstracts of the Meeting  
Society of Obstetric Anesthesiology and Perinatology Annual Meeting  
San Juan, PR
- 2013 “Familial clustering of postpartum hemorrhage in the Swedish population” / Oral  
Presentation  
Society of Obstetric Anesthesiology and Perinatology Annual Meeting  
San Juan, PR
- 2013 “Methyergonovine maleate and the Risk of Myocardial Ischemia and Infraction”/ Oral  
Presentation  
Society of Obstetric Anesthesiology and Perinatology Annual Meeting  
San Juan, PR
- 2013 “Interpreting Comparative Effectiveness Studies in Ambulatory Surgery” / Invited  
lecture  
American Society of Anesthesiology Annual Meeting  
San Francisco, CA
- 2014 “The Epidemiology of Postpartum Hemorrhage” / Invited lecture  
State Postpartum Hemorrhage Collaborative Meeting  
Newark, NJ
- 2014 “The Epidemiology of Postpartum Hemorrhage” / Invited lecture  
State Postpartum Hemorrhage Collaborative Meeting  
Atlanta, GA

- 2014 “Interesting Questions in Anesthesia and Approaches to Answer Them” / Invited lecture  
Investigators in Health Services Research in Anesthesiology, sponsored by ASA Health Policy Research and FAER  
American Society of Anesthesiology Annual Meeting  
New Orleans, LA
- 2014 “Comparative Safety of Anesthetic Technique for Hip Fracture Surgery in Adults” / Oral presentation  
American Society of Anesthesiology Annual Meeting  
New Orleans, LA
- 2014 “Perioperative  $\beta$ -blocker Utilization in Patients Undergoing Intermediate to High Risk Non-Cardiac Surgery” / Oral presentation  
American Society of Anesthesiology Annual Meeting  
New Orleans, LA
- 2014 “Methylergonovine maleate and the Risk of MI” / Invited lecture  
Department of Anesthesiology, University of Chicago  
Chicago, IL
- 2014 “10 Things You Should Know About Preeclampsia to Care for Your Obstetric Patients” / Invited lecture University of Chicago, 28<sup>th</sup> Annual Conference, Challenges for Clinicians  
Chicago, IL
- 2014 “Postpartum Hemorrhage: Coming Soon to a Hospital Near You”/Invited lecture  
University of Chicago, 28<sup>th</sup> Annual Conference, Challenges for Clinicians  
Chicago, IL
- 2015 “Risk Assessment for Postpartum Hemorrhage” / Invited presentation  
New Jersey State Postpartum Hemorrhage Consortium by teleconference
- 2015 “Risk Assessment for Postpartum Hemorrhage” / Invited presentation  
Georgia State Postpartum Hemorrhage Consortium by teleconference
- 2015 “Obstetric Comorbidity Score” / Invited presentation  
CDC-American College of Obstetricians and Gynecologists, Maternal Mortality meeting,  
San Francisco, CA
- 2015 “Postpartum Hemorrhage” / Grand Rounds  
Englewood Hospital  
Englewood, NJ

- 2015 “Genetics of preeclampsia” / Invited presentation; Gertie Marx Grant Awardees Session  
Society of Obstetric Anesthesiology and Perinatology Annual Meeting  
Colorado Springs, CO
- 2015 Labor Induction and Offspring Risk of Autism Spectrum Disorder / Presentation.  
(Best Abstracts of the Meeting)  
Society of Obstetric Anesthesiology and Perinatology Annual Meeting  
Colorado Springs, CO
- 2015 “Epidemiology of Postpartum Hemorrhage”/ Visiting Professor  
Department of Anesthesia, Stanford University  
Palo Alto, CA
- 2015 “Epidemiology of Postpartum Hemorrhage”/ Invited presentation  
California Perinatal Quality Care Collaborative  
Palo Alto, CA
- 2015 “Factor 7a in Postpartum Hemorrhage” / Invited presentation  
New Jersey State Postpartum Hemorrhage Consortium by teleconference
- 2015 “Factor 7a in Postpartum Hemorrhage” / Invited presentation  
Georgia State Postpartum Hemorrhage Consortium by teleconference
- 2016 “Epidemiology of Postpartum Hemorrhage”/ Visiting Professor  
Department of Anesthesia, Columbia University  
New York, NY
- 2016 “What’s New in Postpartum Hemorrhage Management?” / Invited presentation  
New Jersey State Postpartum Hemorrhage Consortium  
Newark NJ
- 2016 “What’s New in Postpartum Hemorrhage Management?” / Invited presentation  
Georgia State Postpartum Hemorrhage Consortium  
Atlanta, GA
- 2016 “Peripartum pain management—special considerations to ensure appropriate pain management, to prevent postpartum relapse and a risk of overdose”/Invited presentation  
Opioid Use in Pregnancy, Neonatal Abstinence Syndrome, and Childhood Outcomes Workshop, Co-sponsored by NICHD/ACOG/AAP/SMFM/CDC/MOD  
Rockville, MD
- 2016 “Using the Medicaid Analytic Extract for Pregnancy Research”/Invited Presentation  
Brown University Center for the Study of Children at Risk  
Providence, RI

- 2016 “Opioid Use Following Cesarean Delivery”/Invited lecturer  
National Meeting on Opioid Use, Abuse, and Overdose in Women  
Office of Women’s Health  
Department of Health and Human Services  
Washington, DC
- 2016 “Uterine Atony”/ Invited presentation  
American Society of Anesthesiology Annual Meeting  
Chicago, IL
- 2016 “The Epidemiology of Postpartum Hemorrhage”/ Visiting Professor  
Wayne State University/Detroit Medical Center  
Detroit, MI
- 2016 “Big Data for OB and OB Anesthesia Research”/Invited Speaker  
Society for Technology in Anesthesia  
San Diego, CA
- 2016 “The Epidemiology of Postpartum Hemorrhage”, “Big Data for OB and OB  
Anesthesia Research”/Visiting Professor  
University of Texas Southwestern  
Dallas, TX
- 2017 “The Epidemiology of Postpartum Hemorrhage”/Visiting Professor  
Washington University School of Medicine  
St. Louis, MI
- 2017 “What’s New in Obstetric Anesthesia”: Ostheimer Memorial Lecture  
Society for Obstetric Anesthesia and Perinatology Annual Meeting  
Seattle, WA
- 2017 “What’s New in Obstetric Anesthesia”/ Visiting Professor  
Weill Cornell Medical College  
New York, NY
- 2017 “Opioid Use in Pregnancy and the Postpartum”/Visiting Professor  
Wake Forest School of Medicine  
Winston Salem, NC
- 2017 “Opioid Use in Pregnancy and the Postpartum”/Invited speaker  
Program Project Grant Symposium, Pain Mechanism Laboratory  
Wake Forest School of Medicine  
Winston Salem, NC
- 2017 “What’s New in Obstetric Anesthesia”/ Visiting Professor  
University of Illinois Chicago School of Medicine  
Chicago, IL

- 2017 “Opioid Use in Pregnancy and the Postpartum”, “The Epidemiology of Postpartum Hemorrhage”/ Visiting Professor  
Department of Anesthesiology, Feinberg Northwestern School of Medicine  
Chicago, IL
- 2017 “Eating during labor”/ Invited presentation  
American Society of Anesthesiology Annual Meeting  
Boston, MA
- 2017 “Consequential Epidemiology: can population medicine improve maternal morbidity?”/Invited Presentation  
Foundation for Anesthesia Education and Research Panel, American Society of Anesthesiology Annual Meeting  
Boston, MA
- 2017 “Opioid Use in Pregnancy and the Postpartum”/Invited presentation  
Connecticut Hospital Association/ Connecticut Perinatal Quality Collaborative Conference  
Hartford, CT
- 2018 “Pain Management: antepartum, intrapartum, postpartum and beyond”/Invited Speaker Workshop on Substance Use Disorders in Pregnancy, Co-sponsored by the Society for Fetal and Maternal Medicine, the American College of Obstetrics and Gynecology, and the American Society of Addiction Medicine  
Dallas Texas
- 2018 “Opioid Use in Pregnancy and the Postpartum”/Visiting Professor  
Mayo School of Medicine  
Rochester, MI
- 2018 “Sam Hughes Memorial Lecture: What’s New In Obstetric Anesthesia”/Invited Lecture Sol Snider Meeting  
San Francisco, CA
- 2018 “Opioid Use in Pregnancy and the Postpartum”/Invited Lecture  
Sol Snider Meeting  
San Francisco, CA
- 2018 “Maternal Early Warning Criteria”/Invited Lecture  
Sol Snider Meeting  
San Francisco, CA
- 2018 “Opioids In Pregnancy and the Postpartum: Overview and Research Gaps”/ Invited workshop presentation  
Society for Obstetric Anesthesia and Perinaology Annual Meeting  
Miami, FL
- 2018 “Research symposium, Opioids in Pregnancy”/Invited Lecture

- Society for Obstetric Anesthesia and Perinaology Annual Meeting  
Miami, FL
- 2018 “Opioid Use In Pregnancy and the Postpartum”/Visiting Professor  
Department of Anesthesiology, University of Colorado Medical School  
Denver. CO
- 2018 “Big Data in OB and OB Anesthesia Research”/ Research Seminar  
Department of Anesthesiology, University of Colorado Medical School  
Denver. CO
- 2018 “The Correlation of Perioperative Anesthesia Approaches with  
Long-Term Post-Op Opioid Use”/Invited lecture  
International Society of Anesthetic Pharmacology Annual Meeting  
San Francisco, CA
- 2018 “Preeclampsia Refresher Course”/ Invited lecture  
American Society of Anesthesiology Annual Meeting  
San Francisco, CA
- 2018 “Neurological etiologies of postpartum headache”/ Invited lecture  
American Society of Anesthesiology Annual Meeting  
San Francisco, CA
- 2018 “Opioid Use In Pregnancy and the Postpartum”/Invited lecture  
Perinatal Quality Institute Webinar
- 2018 “Opioid Use In Pregnancy and the Postpartum”/Visiting Professor  
Westchester Medical Center/ New York Medical College  
Valhalla, NY
- 2019 “Big Data to Study Drug Safety in Pregnancy”/Invited presentation  
Columbia University Medical Center  
New York, NY
- 2019 “Why You Should Care About Maternal Levels of Care”/Panelist  
Society for Obstetric Anesthesia and Perinatology Annual Meeting  
Phoenix, AZ
- 2019 “Opioid Prescription Use After Vaginal Delivery and Subsequent Persistent Opioid  
Use and Misuse”/Invited presentation  
Best Papers Session, Society for Obstetric Anesthesia and Perinatology Annual  
Meeting, Phoenix, AZ
- 2019 “Pain in Pregnancy and the Postpartum”/Invited presentation  
14<sup>th</sup> annual NIH Pain Consortium Symposium, Advances in Pain Research, Pain  
Across the Lifespan  
Bethesda MD



- 2019 “Opioids after Vaginal and Cesarean Delivery”/Invited presentation  
Workshop on Identifying Research Gaps in Clinical Practice Guidelines for Prescribing Opioids for Acute Pain, National Academy of Medicine  
Washington, DC
- 2019 “HELLP! How to Keep Women with Preeclampsia Safe” Obstetrics Refresher Course/  
Invited lecture  
American Society of Anesthesiology Annual Meeting  
Orlando, FL
- 2019 “Evaluating the Safety of Medications in Pregnancy”, Invited lecture, Stanford  
University School of Medicine
- 2020 "What Do You Need to Know from SOAP Consensus Statements"/Invited lecture  
American Society of Anesthesiology Annual Meeting (Virtual)
- 2020 Society for Obstetric Anesthesia and Perinatology, Town Hall, “Epidurals and the  
Risk for Autism” (Virtual)
- 2020 Visiting Professor, New York University School of Medicine—Cancelled due to  
COVID 19
- 2021 Visiting Professor, University of Arkansas School of Medicine (virtual)
- 2021 “Preeclampsia and the Future Health of the Infant”/Invited lecture  
Society for Maternal Fetal Medicine/Preeclampsia Foundation, Workshop on  
Preeclampsia (virtual)

## **International**

- 2012 “Epidemiology of Postpartum Hemorrhage” by video conference / Invited lecture  
Awareness Rational Use of Blood Conference, Centro Médico Teknon  
Barcelona, Spain
- 2013 Methyergonovine maleate and the Risk of Myocardial Ischemia and Infraction / Oral  
presentation  
International Society of Pharmacoepidemiology Annual Meeting  
Montreal, CA
- 2013 Type of stress ulcer prophylaxis and the risk of nosocomial pneumonia in cardiac  
surgical patients: a cohort study / Oral presentation  
International Society of Pharmacoepidemiology Annual Meeting  
Montreal, CA
- 2014 “Risk Factors for Postpartum Hemorrhage” / Invited lecture  
19<sup>th</sup> Annual Internacional de Anestesia Obstetrica Conference

Sao Paulo, Brazil

- 2014 “Update on Cardiac Arrest” / Invited lecture  
19<sup>th</sup> Annual Internacional de Anestesia Obstetrica Conference  
Sao Paulo, Brazil
- 2014 “Genetics of Preeclampsia” / Invited lecture  
19<sup>th</sup> Annual Internacional de Anestesia Obstetrica Conference  
Sao Paulo, Brazil
- 2014 “Introduction to Big Data for Use in OB Research Including Methodological Considerations”/Invited lecture  
Society for Obstetric Anesthesia and Perinatology Annual Meeting  
Toronto, Canada
- 2014 “Statins and the Risk of Congenital Malformations: A Cohort Study”/ Oral presentation  
International Society of Pharmacoepidemiology, Annual Meeting  
Taipei, Taiwan
- 2014 “Opioid Use Following Cesarean Delivery” / Oral presentation  
International Society of Pharmacoepidemiology, Annual Meeting  
Taipei, Taiwan
- 2015 “Postpartum Hemorrhage: Morbidity and How to Prevent It”/Seminar  
Department of Anesthesia, Karolinska Institut  
Stockholm, Sweden
- 2015 “Methodological Considerations in Studying Drug Safety in Pregnancy”/Course instructor  
International Society of Pharmacoepidemiology, Annual Meeting  
Boston, MA
- 2015 “Inductions and the Risk of Autism Spectrum Disorder”/ Oral presentation  
International Society of Pharmacoepidemiology, Annual Meeting  
Boston, MA
- 2015 “ACE Inhibitor Exposure and the Risk of Congenital Malformations”/ Oral presentation  
International Society of Pharmacoepidemiology, Annual Meeting  
Boston, MA
- 2015 “The Safety of First Trimester Exposure to ADHD Medications”/ Oral presentation  
International Society of Pharmacoepidemiology, Annual Meeting  
Boston, MA

- 2015 “Late Pregnancy Exposure to Beta Blockers and the Risks of Neonatal Bradycardia and Hypoglycemia”/ Oral presentation  
International Society of Pharmacoepidemiology, Annual Meeting  
Boston, MA
- 2016 “Methodological Considerations in Studying Drug Safety in Pregnancy”/Course instructor  
International Society of Pharmacoepidemiology, Annual Meeting  
Dublin, Ireland
- 2016 “Pregnancy outcomes in women with chronic hypertension initiated on labetalol versus methyldopa”  
International Society of Pharmacoepidemiology, Annual Meeting  
Dublin, Ireland
- 2017 “What’s New in Obstetric Anesthesia 2016”/Invited lecture  
Obstetric Anaesthetists' Association Meeting  
London, UK
- 2017 “Big data for obstetric and obstetric anesthesia research”/Invited lecture  
Obstetric Anaesthetists' Association Meeting  
London, UK
- 2017 “What’s New in Obstetric Anesthesia 2016”/ Invited lecture  
24th International Conference of the Israeli Society of Anesthesiologists  
Tel Aviv, Israel
- 2017 “Big data for obstetric and obstetric anesthesia research”/Invited lecture  
24th International Conference of the Israeli Society of Anesthesiologists  
Tel Aviv, Israel
- 2017 “Methodological Considerations in Studying Drug Safety in Pregnancy”/Invited presentation  
International Society of Pharmacoepidemiology, Annual Meeting  
Montreal, Canada
- 2017 “Beta Blockers and the Risk for Congenital Malformations”/Invited presentation  
International Society of Pharmacoepidemiology, Annual Meeting  
Montreal, Canada
- 2018 “Opioid Use in Pregnancy and the Postpartum Period”/ Visiting Professor  
British Columbia Women’s Hospital  
University of British Columbia  
Vancouver, Canada

- 2018 “What’s New In Obstetric Anesthesia”/ Visiting Professor  
Vancouver General Hospital, University of British Columbia  
Vancouver, Canada
- 2018 “What’s New In Obstetric Anesthesia”/ Visiting Professor  
Royal Columbian Hospital, University of British Columbia  
Vancouver, Canada
- 2018 “What’s New In Obstetric Anesthesia”/Invited presentation  
Annual Internacional de Anestesia Obstetrica Conference  
Sao Paulo, Brazil
- 2018 “Applying Early Warning Criteria in Obstetrics”/ Invited presentation  
Beijing 2018 National High Risk Obstetric Analgesia and Anesthesia Symposium  
Beijing, China
- 2018 “Methodological Considerations in Studying Drug Safety in Pregnancy”/Course  
instructor  
International Society of Pharmacoepidemiology, Annual Meeting  
Prague, Czech Republic
- 2018 “Update on Preeclampsia”/Invited presentation  
11th Annual Conference of Association of Obstetric Anesthesiologists  
Jodhpur India
- 2019 “Update on Preeclampsia”/Invited presentation  
Hanoi Hospital for Obstetrics and Gynecology  
Hanoi, Vietnam
- 2019 “Risk Stratification in Obstetrics”/Invited presentation  
International Conference on Anesthesia for Obstetrics and Gynecology  
Hanoi, Vietnam
- 2019 “Update on Preeclampsia”/Invited presentation  
Congresso Paulista De Anestesiologia,  
São Paulo, Brazil
- 2019 “Early Warning Systems and Risk Stratification”/Invited presentation  
Congresso Paulista De Anestesiologia  
São Paulo, Brazil
- 2019 “Opioids After Cesarean Delivery and the Opioid Epidemic”/Invited presentation  
International Anesthesia Research Society

Montreal, Canada

- 2019 “Update on Preeclampsia”/Invited presentation  
14<sup>th</sup> National Congress on Obstetric Anesthesia  
Baotau, China
- 2019 “Threats to the Validity of Studies of Drug Safety in Pregnancy”/Invited presentation.  
International Society of Pharmacoepidemiology, Annual Meeting  
Philadelphia, PA
- 2019 “Big Data in Obstetric Anesthesia-what have we learned?”/Invited presentation.  
International Congress of Obstetric Anaesthesia, Cape Town, South Africa
- 2019 “Pain During Cesarean Delivery”/Invited presentation.  
International Congress of Obstetric Anaesthesia, Cape Town, South Africa
- 2020 Invited speaker, Annual Scientific Meeting in Anaesthesiology, Hong Kong College  
of Anesthesia, Hong Kong (cancelled due to civil unrest)
- 2020 “Risk Stratification in Obstetrics”/Invited presentation.  
Euroanesthesia, European Society of Anesthesiology, Barcelona, Spain (converted to  
virtual meeting due to COVID)
- 2020 “Medication Safety in Pregnancy”/Invited presentation.  
Euroanesthesia, European Society of Anesthesiology, Barcelona, Spain (converted to  
virtual meeting due to COVID)
- 2020 Invited speaker 25th International Conference of the Israeli Society of  
Anesthesiologists, Tel Aviv, Israel (Cancelled due to COVID)
- 2021 “Risk Stratification in Obstetrics”/Invited presentation.  
Association of Obstetric Anaesthesiologists, India 13th National Conference (virtual  
meeting due to COVID)
- 2021 “Using Big Data to Study the Safety of Medications in Pregnancy”/Invited  
presentation  
Obstetric Anaesthetists' Association Annual Meeting, United Kingdom (virtual  
meeting due to COVID)
- 2021 “Methodological Considerations in Studying Drug Safety in Pregnancy”/Course  
instructor  
International Society of Pharmacoepidemiology, Annual Meeting  
(virtual meeting due to COVID)

- 2021 “Using Big Data to Study the Safety of Medications in Pregnancy”/Invited presentation  
Annual Scientific Meeting in Anaesthesiology, Hong Kong College of Anesthesia, Hong Kong
- 2021 “Risk Stratification in Obstetrics”/Invited presentation Annual Scientific Meeting in Anaesthesiology, Hong Kong College of Anesthesia, Hong Kong

**Report of Clinical Activities and Innovations**

**Current Licensure and Certification:**

- 2006-2010 Restricted License, Massachusetts
- 2006- ACLS Certification
- 2010- Full License, Massachusetts
- 2011- Primary certification, American Board of Anesthesiology  
Participating in Maintenance of Certification

**Practice Activities:**

- |           |   |  |  |
|-----------|---|--|--|
| 2011-2017 | Attending anesthesiologist (Massachusetts General Hospital) | Main operating theatre, Labor and delivery | 1 day per week + call (70 to 80 patient contact hours per month) |
| 2017-     | Attending anesthesiologist (Brigham and Women’s Hospital)   | Labor and delivery, Main operating theatre | 1 day per week + call  |

**Clinical Innovations:**

Shared decision making for opioid prescribing after cesarean delivery

Our group pioneered the use of a shared decision-making approach to opioid prescribing after cesarean delivery. In this approach, women are educated about the risks of opioids and select the quantity of opioids they want to be prescribed up to a defined limit, thereby better aligning the quantity of opioids prescribed with patient needs and reducing the leftover opioids available for diversion and misuse. Citing our work, the use of shared

decision making to guide postpartum opioid prescriptions was listed as a key recommendation in the recent American College of Obstetrician and Gynecologist guidelines on postpartum pain management. The approach is currently being evaluated in a 14 center, 5,500 patient RCT by the NIH-funded Maternal Fetal Medicine Units Network. Our approach has also been adapted for use in other surgeries by other investigators and has been shown to be effective.

Creation of Maternal  
Obstetric  
Comorbidity Index  
(OB-CMI)

I led the development of a Maternal Obstetric Comorbidity Index (OB-CMI). This score has been validated in independent studies in several other countries and is now an accepted and widely used method by researchers and public health officials for tracking the burden of comorbid illness and for risk adjustment in health services/ epidemiological research. Our group recently adapted the OB-CMI for use in routine clinical practice as a risk stratification tool and validated its performance at BWH. It has now been built into the EMR for use across Partners hospitals.

Safety of  
cardiovascular  
medications in  
pregnancy

Our group pregnancy using cutting edge epidemiological methods applied to large retrospective databases to study the safety of cardiovascular medications in pregnancy including statins, beta blockers, ACE inhibitors, and calcium channel blockers. This work has been cited in national and international guidelines (e.g., ADA, ACC, ESC) and review articles on the management of cardiovascular disease in pregnancy. It informed labelling changes regarding statin use during pregnancy by the FDA.

Safety of  
prescription opioids  
in pregnancy

Our research group was the first to describe nationwide patterns of prescription opioid utilization during pregnancy, finding that 14% of pregnant women in a nationwide, commercially insured cohort and 21% of pregnant women in a nationwide, Medicaid cohort were exposed to an opioid medication at some point during pregnancy, suggesting that the epidemic of prescription opioid use extends into pregnancy. We have worked to define the risks associated with this exposure during pregnancy, including the risk of neonatal abstinence syndrome associated with varying doses and timing of opioid exposure and the risk of congenital malformations associated with first trimester use. This work has helped to elevate concern about the risks associated with prescription opioid use in pregnancy. It has been cited extensively in work from CDC on this topic, subsequent investigations, and review articles related to the treatment of pain and substance use disorder in pregnancy.

Safety of  
ondansetron in  
pregnancy

Ondansetron is a commonly used antiemetic in pregnancy. Our group conducted the largest observational study to date examining the risks associated with its use in the first trimester. We found no increase in the risk for cardiac malformations or malformations overall, but a small increase in the risk for oral clefts. This resulted in the European Medicines Agency changing the label for ondansetron to state it should not be used in the first trimester of pregnancy.

Safety of psychotropic medications in pregnancy	Our group has a series of studies evaluating the safety of psychotropic medications in pregnancy including antidepressants, antipsychotics, stimulants, and mood stabilizers. This work has been cited widely in clinical review articles.
Safety of medications in the used on labor and delivery units	Our group has evaluated important safety concerns regarding medications prescribed around the time of delivery including uterotonics and opioids. We published a study that refuted a previously postulated link between induction of labor and the risk for autism. We evaluated the association between methylergonovine maleate and myocardial infarction. We quantified the risk of persistent opioid use in opioid-naïve women after cesarean delivery. We defined normative opioid requirements after cesarean delivery. The work has been published in leading clinical journals widely cited, including in clinical guidelines and reviews.
Patterns and predictors of maternal morbidity	I have led studies on a range of pregnancy-related complications, often in collaboration with investigators for the Centers of Disease Control and Prevention including stroke, postpartum hemorrhage, hypertensive disorders, peripartum hysterectomy, sepsis, and cardiac arrest. These articles have been highly cited in subsequent investigations, review articles, and clinical guidelines.
Obstetric Anesthesia Center of Excellence Initiative	I served on a five-person committee that developed the criteria, application and review process for a international Obstetric Anesthesia Center of Excellence Designation by the Society for Obstetric Anesthesia and Perinatology. This designation has subsequently been awarded to approximately 40 institutions. The goal of this initiative is to raise the standards for the practice of obstetric anesthesia both in the US and internationally.

## **Report of Scholarship**

### **Peer-Reviewed Scholarship in print or other media (h-index 66)**

#### **Research Investigations**

1. **Bateman BT**, Donegan NP, Jarry TM, Palma M, Cheung AL. Evaluation of a tetracycline-inducible promoter in *Staphylococcus aureus* in vitro and in vivo and its application in demonstrating the role of sigB in microcolony formation. *Infection and immunity* 2001;69:7851-7.
2. Cheung AL, Schmidt K, **Bateman B**, Manna AC. SarS, a SarA homolog repressible by agr, is an activator of protein A synthesis in *Staphylococcus aureus*. *Infection and immunity* 2001;69:2448-55.
3. **Bateman BT**, Pile-Spellman J, Gutin PH, Berman MF. Meningioma resection in the elderly: nationwide inpatient sample, 1998-2002. *Neurosurgery* 2005;57:866-72; discussion -72.



4. **Bateman BT**, Schumacher HC, Boden-Albala B, Berman MF, Mohr JP, Sacco RL, Pile-Spellman J. Factors associated with in-hospital mortality after administration of thrombolysis in acute ischemic stroke patients: an analysis of the nationwide inpatient sample 1999 to 2002. *Stroke* 2006;37:440-6. (published with editorial)
5. **Bateman BT**, Schumacher HC, Bushnell CD, Pile-Spellman J, Simpson LL, Sacco RL, Berman MF. Intracerebral hemorrhage in pregnancy: frequency, risk factors, and outcome. *Neurology* 2006;67:424-9.
6. **Bateman BT**, Simpson LL. Higher rate of stillbirth at the extremes of reproductive age: a large nationwide sample of deliveries in the United States. *American journal of obstetrics and gynecology* 2006;194:840-5.
7. Choi JH, **Bateman BT**, Mangla S, Marshall RS, Prabhakaran S, Chong J, Mohr JP, Mast H, Pile-Spellman J. Endovascular recanalization therapy in acute ischemic stroke. *Stroke* 2006;37:419-24.
8. Ford AA, **Bateman BT**, Simpson LL. Vaginal birth after cesarean delivery in twin gestations: a large, nationwide sample of deliveries. *American journal of obstetrics and gynecology* 2006;195:1138-42.
9. **Bateman BT**, Claassen J, Willey JZ, Hirsch LJ, Mayer SA, Sacco RL, Schumacher HC. Convulsive status epilepticus after ischemic stroke and intracerebral hemorrhage: frequency, predictors, and impact on outcome in a large administrative dataset. *Neurocritical care* 2007;7:187-93.
10. Claassen J, **Bateman BT**, Willey JZ, Inati S, Hirsch LJ, Mayer SA, Sacco RL, Schumacher HC. Generalized convulsive status epilepticus after nontraumatic subarachnoid hemorrhage: the nationwide inpatient sample. *Neurosurgery* 2007;61:60-4; discussion 4-5.
11. Ford AA, **Bateman BT**, Simpson LL, Ratan RB. Nationwide data confirms absence of 'July phenomenon' in obstetrics: it's safe to deliver in July. *Journal of perinatology* 2007;27:73-6. (published with editorial)
12. Louis ED, Henschcliff C, **Bateman BT**, Schumacher C. Young-onset Parkinson's disease: hospital utilization and medical comorbidity in a nationwide survey. *Neuroepidemiology* 2007;29:39-43.
13. Schumacher HC, **Bateman BT**, Boden-Albala B, Berman MF, Mohr JP, Sacco RL, Pile-Spellman J. Use of thrombolysis in acute ischemic stroke: analysis of the Nationwide Inpatient Sample 1999 to 2004. *Annals of emergency medicine* 2007;50:99-107.
14. **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;110:231-8. (published with editorial)
15. **Bateman BT**, Berman MF, Riley LE, Leffert LR. The epidemiology of postpartum hemorrhage in a large, nationwide sample of deliveries. *Anesthesia and analgesia* 2010;110:1368-73.

16. **Bateman BT**, Schmidt U, Berman MF, Bittner EA. Temporal trends in the epidemiology of severe postoperative sepsis after elective surgery: a large, nationwide sample. *Anesthesiology* 2010;112:917-25.
17. Mhyre JM, **Bateman BT**, Leffert LR. Influence of patient comorbidities on the risk of near-miss maternal morbidity or mortality. *Anesthesiology* 2011;115:963-72.
18. **Bateman BT**, Bansil P, Hernandez-Diaz S, Mhyre JM, Callaghan WM, Kuklina EV. Prevalence, trends, and outcomes of chronic hypertension: a nationwide sample of delivery admissions. *American journal of obstetrics and gynecology* 2012;206:134 e1-8.
19. **Bateman BT**, Hernandez-Diaz S, Huybrechts KF, Palmsten K, Mogun H, Ecker JL, Fischer MA. Patterns of outpatient antihypertensive medication use during pregnancy in a Medicaid population. *Hypertension* 2012;60:913-20.
20. **Bateman BT**, Mhyre JM, Callaghan WM, Kuklina EV. Peripartum hysterectomy in the United States: nationwide 14 year experience. *American journal of obstetrics and gynecology* 2012;206:63 e1-8.
21. **Bateman BT**, Olbrecht VA, Berman MF, Minehart RD, Schwamm LH, Leffert LR. Peripartum subarachnoid hemorrhage: nationwide data and institutional experience. *Anesthesiology* 2012;116:324-33. (published with editorial)
22. **Bateman BT**, Shaw KM, Kuklina EV, Callaghan WM, Seely EW, Hernandez-Diaz S. Hypertension in women of reproductive age in the United States: NHANES 1999-2008. *PLoS one* 2012;7:e36171.
23. Brunelli SM, Waikar SS, **Bateman BT**, Chang TI, Lii J, Garg AX, Winkelmayr WC, Choudhry NK. Preoperative statin use and postoperative acute kidney injury. *The American journal of medicine* 2012;125:1195-204 e3. (published with editorial)
24. Bryant A, Mhyre JM, Leffert LR, Hoban RA, Yakoob MY, **Bateman BT**. The association of maternal race and ethnicity and the risk of postpartum hemorrhage. *Anesthesia and analgesia* 2012;115:1127-36.
25. Grosse-Sundrup M, Henneman JP, Sandberg WS, **Bateman BT**, Uribe JV, Nguyen NT, Ehrenfeld JM, Martinez EA, Kurth T, Eikermann M. Intermediate acting non-depolarizing neuromuscular blocking agents and risk of postoperative respiratory complications: prospective propensity score matched cohort study. *BMJ* 2012;345:e6329. (published with editorial)
26. Lee LK, **Bateman BT**, Wang S, Schumacher HC, Pile-Spellman J, Saposnik G. Trends in the hospitalization of ischemic stroke in the United States, 1998-2007. *International journal of stroke : official journal of the International Stroke Society* 2012;7:195-201.
27. Terry AR, Barker FG, 2<sup>nd</sup>, Leffert L, **Bateman BT**, Souter I, Plotkin SR. Outcomes of hospitalization in pregnant women with CNS neoplasms: a population-based study. *Neuro-oncology* 2012;14:768-76.

28. **Bateman BT**, Bykov K, Choudhry NK, Schneeweiss S, Gagne JJ, Polinski JM, Franklin JM, Doherty M, Fischer MA, Rassen JA. Type of stress ulcer prophylaxis and risk of nosocomial pneumonia in cardiac surgical patients: cohort study. *BMJ* 2013;347:f5416.
29. **Bateman BT**, Hernandez-Diaz S, Huybrechts KF, Palmsten K, Mogun H, Ecker JL, Seely EW, Fischer MA. Outpatient calcium-channel blockers and the risk of postpartum haemorrhage: a cohort study. *BJOG : an international journal of obstetrics and gynaecology* 2013;120:1668-76. (published with editorial)
30. **Bateman BT**, Huybrechts KF, Hernandez-Diaz S, Liu J, Ecker JL, Avorn J. Methylergonovine maleate and the risk of myocardial ischemia and infarction. *American journal of obstetrics and gynecology* 2013;209:459 e1- e13.
31. **Bateman BT**, Mhyre JM, Ehrenfeld J, Kheterpal S, Abbey KR, Argalious M, Berman MF, Jacques PS, Levy W, Loeb RG, Paganelli W, Smith KW, Wethington KL, Wax D, Pace NL, Tremper K, Sandberg WS. The risk and outcomes of epidural hematomas after perioperative and obstetric epidural catheterization: a report from the Multicenter Perioperative Outcomes Group Research Consortium. *Anesthesia and analgesia* 2013;116:1380-5. (published with editorial)
32. **Bateman BT**, Mhyre JM, Hernandez-Diaz S, Huybrechts KF, Fischer MA, Creanga AA, Callaghan WM, Gagne JJ. Development of a comorbidity index for use in obstetric patients. *Obstetrics and gynecology* 2013;122:957-65. (published with editorial)
33. **Bateman BT**, Rassen JA, Schneeweiss S, Bykov K, Franklin JM, Gagne JJ, Polinski JM, Liu J, Kulik A, Fischer MA, Choudhry NK. Adjuvant vancomycin for antibiotic prophylaxis and risk of Clostridium difficile infection after coronary artery bypass graft surgery. *The Journal of thoracic and cardiovascular surgery* 2013;146:472-8.
34. Bauer ME, **Bateman BT**, Bauer ST, Shanks AM, Mhyre JM. Maternal sepsis mortality and morbidity during hospitalization for delivery: temporal trends and independent associations for severe sepsis. *Anesthesia and analgesia* 2013;117:944-50.
35. Brueckmann B, Villa-Uribe JL, **Bateman BT**, Grosse-Sundrup M, Hess DR, Schlett CL, Eikermann M. Development and validation of a score for prediction of postoperative respiratory complications. *Anesthesiology* 2013;118:1276-85. (published with editorial)
36. Dietz PM, Kuklina EV, **Bateman BT**, Callaghan WM. Assessing cardiovascular disease risk among young women with a history of delivering a low-birth-weight infant. *American journal of perinatology* 2013;30:267-73.
37. Hyder O, Yaster M, **Bateman BT**, Firth PG. Surgical procedures and outcomes among children with sickle cell disease. *Anesthesia and analgesia* 2013;117:1192-6.
38. Mhyre JM, Shilkrut A, Kuklina EV, Callaghan WM, Creanga AA, Kaminsky S, **Bateman BT**. Massive blood transfusion during hospitalization for delivery in New York State, 1998-2007. *Obstetrics and gynecology* 2013;122:1288-94.

39. Terry AR, Barker FG, 2<sup>nd</sup>, Leffert L, **Bateman BT**, Souter I, Plotkin SR. Neurofibromatosis type 1 and pregnancy complications: a population-based study. *American journal of obstetrics and gynecology* 2013;209:46 e1-8.
40. Wanderer JP, Leffert LR, Mhyre JM, Kuklina EV, Callaghan WM, **Bateman BT**. Epidemiology of obstetric-related ICU admissions in Maryland: 1999-2008. *Critical care medicine* 2013;41:1844-52. (published with editorial)
41. Yakoob MY, **Bateman BT**, Ho E, Hernandez-Diaz S, Franklin JM, Goodman JE, Hoban RA. The risk of congenital malformations associated with exposure to beta-blockers early in pregnancy: a meta-analysis. *Hypertension* 2013;62:375-81.
42. **Bateman BT**, Hernandez-Diaz S, Rathmell JP, Seeger JD, Doherty M, Fischer MA, Huybrechts KF. Patterns of opioid utilization in pregnancy in a large cohort of commercial insurance beneficiaries in the United States. *Anesthesiology* 2014;120:1216-24. (published with editorial)
43. **Bateman BT**, Tsen LC, Liu J, Butwick AJ, Huybrechts KF. Patterns of second-line uterotonic use in a large sample of hospitalizations for childbirth in the United States: 2007-2011. *Anesthesia and analgesia* 2014;119:1344-9.
44. Cea Soriano L, **Bateman BT**, Garcia Rodriguez LA, Hernandez-Diaz S. Prescription of antihypertensive medications during pregnancy in the UK. *Pharmacoepidemiology and drug safety* 2014;23:1051-8.
45. Creanga AA, **Bateman BT**, Kuklina EV, Callaghan WM. Racial and ethnic disparities in severe maternal morbidity: a multistate analysis, 2008-2010. *American journal of obstetrics and gynecology* 2014;210:435 e1-8.
46. Creanga AA, **Bateman BT**, Mhyre JM, Kuklina E, Shilkrut A, Callaghan WM. Performance of racial and ethnic minority-serving hospitals on delivery-related indicators. *American journal of obstetrics and gynecology* 2014;211:647 e1-16.
47. Desai RJ, Hernandez-Diaz S, **Bateman BT**, Huybrechts KF. Increase in prescription opioid use during pregnancy among Medicaid-enrolled women. *Obstetrics and gynecology* 2014;123:997-1002.
48. Hernandez-Diaz S, Boeke CE, Romans AT, Young B, Margulis AV, McElrath TF, Ecker JL, **Bateman BT**. Triggers of spontaneous preterm delivery—why today? *Paediatric and perinatal epidemiology* 2014;28:79-87. (published with editorial)
49. Maeda A, **Bateman BT**, Clancy CR, Creanga AA, Leffert LR. Opioid abuse and dependence during pregnancy: temporal trends and obstetrical outcomes. *Anesthesiology* 2014;121:1158-65.
50. Mhyre JM, Tsen LC, Einav S, Kuklina EV, Leffert LR, **Bateman BT**. Cardiac arrest during hospitalization for delivery in the United States, 1998-2011. *Anesthesiology* 2014;120:810-8. (published with editorial)

51. Oberg AS, Hernandez-Diaz S, Frisell T, Greene MF, Almqvist C, **Bateman BT**. Genetic contribution to postpartum haemorrhage in Swedish population: cohort study of 466,686 births. *BMJ* 2014;349:g4984. (published with editorial)
52. Oberg AS, Hernandez-Diaz S, Palmsten K, Almqvist C, **Bateman BT**. Patterns of recurrence of postpartum hemorrhage in a large population-based cohort. *American journal of obstetrics and gynecology* 2014;210:229 e1-8.
53. Patorno E, Neuman MD, Schneeweiss S, Mogun H, **Bateman BT**. Comparative safety of anesthetic type for hip fracture surgery in adults: retrospective cohort study. *BMJ* 2014;348:g4022.
54. **Bateman BT**, Hernandez-Diaz S, Fischer MA, Seely EW, Ecker JL, Franklin JM, Desai RJ, Allen-Coleman C, Mogun H, Avorn J, Huybrechts KF. Statins and congenital malformations: cohort study. *BMJ* 2015;350:h1035. (published with editorial)
55. **Bateman BT**, Huybrechts KF, Fischer MA, Seely EW, Ecker JL, Oberg AS, Franklin JM, Mogun H, Hernandez-Diaz S. Chronic hypertension in pregnancy and the risk of congenital malformations: a cohort study. *American journal of obstetrics and gynecology* 2015;212:337 e1-14.
56. **Bateman BT**, Huybrechts KF, Maeda A, Desai R, Patorno E, Seely EW, Ecker JL, Allen-Coleman C, Mogun H, Hernandez-Diaz S, Fischer MA. Calcium Channel Blocker Exposure in Late Pregnancy and the Risk of Neonatal Seizures. *Obstetrics and gynecology* 2015;126:271-8.
57. **Bateman BT**, Kesselheim AS. Propofol as a transformative drug in anesthesia: insights from key early investigators. *Drug discovery today* 2015;20:1012-7.
58. Butwick AJ, Carvalho B, Blumenfeld YJ, El-Sayed YY, Nelson LM, **Bateman BT**. Second-line uterotonics and the risk of hemorrhage-related morbidity. *American journal of obstetrics and gynecology* 2015;212:642 e1-7.
59. Creanga AA, **Bateman BT**, Butwick AJ, Raleigh L, Maeda A, Kuklina E, Callaghan WM. Morbidity associated with cesarean delivery in the United States: is placenta accrete an increasingly important contributor? *American journal of obstetrics and gynecology* 2015;213:384 e1-11.
60. Desai RJ, Huybrechts KF, Hernandez-Diaz S, Mogun H, Patorno E, Kaltenbach K, Kerzner LS, **Bateman BT**. Exposure to prescription opioid analgesics in utero and risk of neonatal abstinence syndrome: population based cohort study. *BMJ* 2015;350:h2102.
61. Huybrechts KF, **Bateman BT**, Palmsten K, Desai RJ, Patorno E, Gopalakrishnan C, Levin R, Mogun H, Hernandez-Diaz S. Antidepressant use late in pregnancy and risk of persistent pulmonary hypertension of the newborn. *JAMA* 2015;313:2142-51.
62. Kulik A, Bykov K, Choudhry NK, **Bateman BT**. Non-steroidal anti-inflammatory drug administration after coronary artery bypass surgery: utilization persists despite the boxed warning. *Pharmacoepidemiology and drug safety* 2015;24:647-53.

63. Leffert LR, Clancy CR, **Bateman BT**, Bryant AS, Kuklina EV. Hypertensive disorders and pregnancy-related stroke: frequency, trends, risk factors, and outcomes. *Obstetrics and gynecology* 2015;125:124-31.
64. Leffert LR, Clancy CR, **Bateman BT**, Cox M, Schulte PJ, Smith EE, Fonarow GC, Schwamm LH, Kuklina EV, George MG. Patient Characteristics and Outcomes After Hemorrhagic Stroke in Pregnancy. *Circulation Cardiovascular quality and outcomes* 2015;8:S170-8.
65. MacDonald SC, **Bateman BT**, McElrath TF, Hernandez-Diaz S. Mortality and Morbidity During Delivery Hospitalization Among Pregnant Women With Epilepsy in the United States. *JAMA neurology* 2015;72:981-8.
66. Menendez ME, Ring D, **Bateman BT**. Preoperative Opioid Misuse is Associated With Increased Morbidity and Mortality After Elective Orthopaedic Surgery. *Clinical orthopaedics and related research* 2015;473:2402-12.
67. Patorno E, Wang SV, Schneeweiss S, Liu J, **Bateman BT**. Patterns of beta-blocker initiation in patients undergoing intermediate to high-risk noncardiac surgery. *American heart journal* 2015;170:812-20 e6. (published with editorial)
68. Phiri K, Hernandez-Diaz S, Tsen LC, Puopolo KM, Seeger JD, **Bateman BT**. Accuracy of ICD-9-CM coding to identify small for gestational age newborns. *Pharmacoepidemiology and drug safety* 2015;24:381-8.
69. Terry AR, Merker VL, Barker FG, 2<sup>nd</sup>, Leffert L, **Bateman BT**, Souter I, Plotkin SR. Pregnancy complications in women with rare tumor suppressor syndromes affecting central and peripheral nervous system. *American journal of obstetrics and gynecology* 2015;213:108-9.
70. Thompson JL, Kuklina EV, **Bateman BT**, Callaghan WM, James AH, Grotegut CA. Medical and Obstetric Outcomes Among Pregnant Women With Congenital Heart Disease. *Obstetrics and gynecology* 2015;126:346-54.
71. Zaremba S, Mueller N, Heisig AM, Shin CH, Jung S, Leffert LR, **Bateman BT**, Pugsley LJ, Nagasaka Y, Duarte IM, Ecker JL, Eikermann M. Elevated upper body position improves pregnancy-related OSA without impairing sleep quality or sleep architecture early after delivery. *Chest* 2015;148:936-44.
72. Baker JA, Avorn J, Levin R, **Bateman BT**. Opioid Prescribing After Surgical Extraction of Teeth in Medicaid Patients, 2000-2010. *JAMA* 2016;315:1653-4.
73. **Bateman BT**, Franklin JM, Bykov K, Avorn J, Shrank WH, Brennan TA, Landon JE, Rathmell JP, Huybrechts KF, Fischer MA, Choudhry NK. Persistent opioid use following cesarean delivery: patterns and predictors among opioid-I women. *American journal of obstetrics and gynecology* 2016;215:353 e1- e18.

74. **Bateman BT**, Patorno E, Desai RJ, Seely EW, Mogun H, Maeda A, Fischer MA, Hernandez-Diaz S, Huybrechts KF. Late Pregnancy beta Blocker Exposure and Risks of Neonatal Hypoglycemia and Bradycardia. *Pediatrics* 2016;138. (published with editorial)
75. Bingham D, Scheich B, Byfield R, Wilson B, **Bateman BT**. Postpartum Hemorrhage Preparedness Elements Vary Among Hospitals in New Jersey and Georgia. *Journal of obstetric, gynecologic, and neonatal nursing : JOGNN* 2016;45:227-38.
76. Desai RJ, Huybrechts KF, **Bateman BT**, Hernandez-Diaz S, Mogun H, Gopalakrishnan C, Patorno E, Kim SC. Brief Report: Patterns and Secular Trends in Use of Immunomodulatory Agents During Pregnancy in Women With Rheumatic Conditions. *Arthritis & rheumatology* 2016;68:1183-9.
77. Friedman AM, Wright JD, Ananth CV, Siddiq Z, D'Alton ME, **Bateman BT**. Population-based risk for peripartum hysterectomy during low- and moderate-risk delivery hospitalizations. *American journal of obstetrics and gynecology* 2016;215:640 e1- e8.
78. Gudnadottir TA, **Bateman BT**, Hernandez-Diaz S, Luque-Fernandez MA, Valdimarsdottir U, Zoega H. Body Mass Index, Smoking and Hypertensive Disorders during Pregnancy: A Population Based Case-Control Study. *PloS one* 2016;11:e0152187.
79. Huybrechts KF, Hernandez-Diaz S, Patorno E, Desai RJ, Mogun H, Dejene SZ, Cohen JM, Panchaud A, Cohen L, **Bateman BT**. Antipsychotic Use in Pregnancy and the Risk for Congenital Malformations. *JAMA psychiatry* 2016;73:938-46. (published with editorial)
80. Kumamaru KK, Kumamaru H, **Bateman BT**, Gronsbell J, Cai T, Liu J, Higgins LD, Aoki S, Ohtomo K, Rybicki FJ, Patorno E. Limited Hospital Variation in the Use and Yield of CT for Pulmonary Embolism in Patients Undergoing Total Hip or Total Knee Replacement Surgery. *Radiology* 2016;281:826-34.
81. Ladha KS, Patorno E, Huybrechts KF, Liu J, Rathmell JP, **Bateman BT**. Variations in the Use of Perioperative Multimodal Analgesic Therapy. *Anesthesiology* 2016;124:837-45.
82. Ladha KS, Patorno E, Liu J, **Bateman BT**. Impact of Perioperative Epidural Placement on Postdischarge Opioid Use in Patients Undergoing Abdominal Surgery. *Anesthesiology* 2016;124:396-403.
83. Leffert LR, Clancy CR, **Bateman BT**, Cox M, Schulte PJ, Smith EE, Fonarow GC, Kuklina EV, George MG, Schwamm LH. Treatment patterns and short-term outcomes in ischemic stroke in pregnancy or postpartum period. *American journal of obstetrics and gynecology* 2016;214:723 e1- e11.
84. Menendez ME, Lu N, Huybrechts KF, Ring D, Barnes CL, Ladha K, **Bateman BT**. Variation in Use of Blood Transfusion in Primary Total Hip and Knee Arthroplasties. *The Journal of arthroplasty* 2016;31:2757-63 e2.
85. Oberg AS, D'Onofrio BM, Rickert ME, Hernandez-Diaz S, Ecker JL, Almquist C, Larsson H, Lichtenstein P, **Bateman BT**. Association of Labor Induction With Offspring Risk of Autism Spectrum Disorders. *JAMA pediatrics* 2016;170:e160965. (published with editorial)

86. Patorno E, Wang SV, Schneeweiss S, Liu J, **Bateman BT**. Initiation patterns of statin therapy among adult patients undergoing intermediate to high-risk non-cardiac surgery. *Pharmacoepidemiology and drug safety* 2016;25:64-72.
87. Rough K, **Bateman BT**, Patorno E, Desai RJ, Park Y, Hernandez-Diaz S, Huybrechts KF. Suppression of Substance Abuse Claims in Medicaid Data and Rates of Diagnoses for Non-Substance Abuse Conditions. *JAMA* 2016;315:1164-6.
88. Sigakis MJ, Leffert LR, Mirzakhani H, Sharawi N, Rajala B, Callaghan WM, Kuklina EV, Creanga AA, Mhyre JM, **Bateman BT**. The Validity of Discharge Billing Codes Reflecting Severe Maternal Morbidity. *Anesthesia and analgesia* 2016;123:731-8.
89. Weiniger CF, Lyell DJ, Tsen LC, Butwick AJ, Shachar B, Callaghan WM, Creanga AA, **Bateman BT**. Maternal outcomes of term breech presentation delivery: impact of successful external cephalic version in a nationwide sample of delivery admissions in the United States. *BMC pregnancy and childbirth* 2016;16:150.
90. Kahan BC, Koulenti D, Arvaniti K, Beavis V, Campbell D, Chan M, Moreno R, Pearse RM; International Surgical Outcomes Study (ISOS) group. Critical care admission following elective surgery was not associated with survival benefit: prospective analysis of data from 27 countries. *Intensive Care Med.* 2017 Jul;43(7):971-979.
91. **Bateman BT**, Cole NM, Maeda A, Burns SM, Houle TT, Huybrechts KF, Clancy CR, Hopp SB, Ecker JL, Ende H, Grewe K, Raposo Corradini B, Schoenfeld RE, Sankar K, Day LJ, Harris L, Booth JL, Flood P, Bauer ME, Tsen LC, Landau R, Leffert LR. Patterns of Opioid Prescription and Use After Cesarean Delivery. *Obstetrics and gynecology* 2017;130:29-35. (published with editorial)
92. **Bateman BT**, Patorno E, Desai RJ, Seely EW, Mogun H, Dejene SZ, Fischer MA, Friedman AM, Hernandez-Diaz S, Huybrechts KF. Angiotensin-Converting Enzyme Inhibitors and the Risk of Congenital Malformations. *Obstetrics and gynecology* 2017;129:174-84.
93. Bykov K, Bohn RL, Ewenstein BM, Seeger JD, Avorn J, **Bateman BT**. Use of Bypassing Agents and Risk of Thromboembolic Events in Patients with Haemophilia and Inhibitors. *Thrombosis and haemostasis* 2017;117:2267-73.
94. Cauley CE, Anderson G, Haynes AB, Menendez M, **Bateman BT**, Ladha K. Predictors of In-hospital Postoperative Opioid Overdose After Major Elective Operations: A Nationally Representative Cohort Study. *Annals of surgery* 2017;265:702-8. (published with editorial)
95. Cohen JM, Hernandez-Diaz S, **Bateman BT**, Park Y, Desai RJ, Gray KJ, Patorno E, Mogun H, Huybrechts KF. Placental Complications Associated With Psychostimulant Use in Pregnancy. *Obstetrics and gynecology* 2017;130:1192-201.
96. Desai RJ, **Bateman BT**, Huybrechts KF, Patorno E, Hernandez-Diaz S, Park Y, Dejene SZ, Cohen J, Mogun H, Kim SC. Risk of serious infections associated with use of immunosuppressive agents in pregnant women with autoimmune inflammatory conditions: cohort study. *BMJ* 2017;356:j895.



97. Desai RJ, Rothman KJ, **Bateman BT**, Hernandez-Diaz S, Huybrechts KF. A Propensity-score-based Fine Stratification Approach for Confounding Adjustment When Exposure Is Infrequent. *Epidemiology* 2017;28:249-57.
98. Huybrechts KF, **Bateman BT**, Desai RJ, Hernandez-Diaz S, Rough K, Mogun H, Kerzner LS, Davis JM, Stover M, Bartels D, Cottral J, Patorno E. Risk of neonatal drug withdrawal after intrauterine co-exposure to opioids and psychotropic medications: cohort study. *BMJ* 2017;358:j3326. (published with editorial)
99. Kim DH, Huybrechts KF, Patorno E, Marcantonio ER, Park Y, Levin R, Abdurrob A, **Bateman BT**. Adverse Events Associated with Antipsychotic Use in Hospitalized Older Adults After Cardiac Surgery. *Journal of the American Geriatrics Society* 2017;65:1229-37.
100. Kim DH, Lee J, Kim CA, Huybrechts KF, **Bateman BT**, Patorno E, Marcantonio ER. Evaluation of algorithms to identify delirium in administrative claims and drug utilization database. *Pharmacoepidemiology and drug safety* 2017;26:945-53.
101. Kim SC, Choudhry N, Franklin JM, Bykov K, Eikermann M, Lii J, Fischer MA, **Bateman BT**. Patterns and predictors of persistent opioid use following hip or knee arthroplasty. *Osteoarthritis and cartilage* 2017;25:1399-406.
102. Ladha KS, Kato R, Tsen LC, **Bateman BT**, Okutomi T. A prospective study of post-caesarean delivery hypoxia after spinal anesthesia with intrathecal morphine 150µg. *International journal of obstetric anesthesia* 2017;32:48-53.
103. Lee LO, **Bateman BT**, Kheterpal S, Klumpner TT, Housey M, Aziz MF, Hand KW, MacEachern M, Goodier CG, Bernstein J, Bauer ME, Multicenter Perioperative Outcomes Group I. Risk of Epidural Hematoma after Neuraxial Techniques in Thrombocytopenic Parturients: A Report from the Multicenter Perioperative Outcomes Group. *Anesthesiology* 2017;126:1053-63.
104. Meng ML, Landau R, Viktorsdottir O, Banayan J, Grant T, **Bateman B**, Smiley R, Reitman E. Pulmonary Hypertension in Pregnancy: A Report of 49 Cases at Four Tertiary North American Sites. *Obstetrics and gynecology* 2017;129:511-20.
105. Park Y, Huybrechts KF, Cohen JM, **Bateman BT**, Desai RJ, Patorno E, Mogun H, Cohen LS, Hernandez-Diaz S. Antipsychotic Medication Use Among Publicly Insured Pregnant Women in the United States. *Psychiatric services* 2017;68:1112-9.
106. Patorno E, **Bateman BT**, Huybrechts KF, MacDonald SC, Cohen JM, Desai RJ, Panchaud A, Mogun H, Pennell PB, Hernandez-Diaz S. Pregabalin use early in pregnancy and the risk of major congenital malformations. *Neurology* 2017;88:2020-5.
107. Patorno E, Huybrechts KF, **Bateman BT**, Cohen JM, Desai RJ, Mogun H, Cohen LS, Hernandez-Diaz S. Lithium Use in Pregnancy and the Risk of Cardiac Malformations. *The New England journal of medicine* 2017;376:2245-54.
108. Prabhu M, McQuaid-Hanson E, Hopp S, Burns SM, Leffert LR, Landau R, Lauffenburger JC, Choudhry NK, Kaimal A, **Bateman BT**. A Shared Decision-Making

Intervention to Guide Opioid Prescribing After Cesarean Delivery. *Obstetrics and gynecology* 2017;130:42-6. (published with editorial)

109. Rough K, Sun JW, Seage GR, 3<sup>rd</sup>, Williams PL, Huybrechts KF, **Bateman BT**, Hernandez-Diaz S. Zidovudine use in pregnancy and congenital malformations. *Aids* 2017;31:1733-43.
110. Sun EC, **Bateman BT**, Memtsoudis SG, Neuman MD, Mariano ER, Baker LC. Lack of Association Between the Use of Nerve Blockade and the Risk of Postoperative Chronic Opioid Use Among Patients Undergoing Total Knee Arthroplasty: Evidence From the Marketscan Database. *Anesthesia and analgesia* 2017;125:999-1007.
111. Abbott TEF, Ahmad T, Phull MK, Fowler AJ, Hewson R, Biccard BM, Chew MS, Gillies M, Pearse RM; International Surgical Outcomes Study (ISOS) group. The surgical safety checklist and patient outcomes after surgery: a prospective observational cohort study, systematic review and meta-analysis. *Br J Anaesth.* 2018 Jan;120(1):146-155.
112. Wiggs KK, Rickert ME, Hernandez-Diaz S, **Bateman BT**, Almqvist C, Larsson H, Lichtenstein P, Oberg AS, D'Onofrio BM. A Family-Based Study of the Association Between Labor Induction and Offspring Attention-Deficit Hyperactivity Disorder and Low Academic Achievement. *Behavior genetics* 2017;47:383-93.
113. Bartels DD, McCann ME, Davidson AJ, Polaner DM, Whitlock EL, **Bateman BT**. Estimating pediatric general anesthesia exposure: Quantifying duration and risk. *Paediatric anaesthesia* 2018;28:520-7.
114. **Bateman BT**, Heide-Jorgensen U, Einarsdottir K, Engeland A, Furu K, Gissler M, Hernandez-Diaz S, Kieler H, Lahesmaa-Korpinen AM, Mogun H, Norgaard M, Reutfors J, Selmer R, Huybrechts KF, Zoega H. beta-Blocker Use in Pregnancy and the Risk for Congenital Malformations: An International Cohort Study. *Annals of internal medicine* 2018;169:665-73. (published with editorial)
115. Bauer ME, Housey M, Bauer ST, Behrmann S, Chau A, Clancy C, Clark EAS, Einav S, Langen E, Leffert L, Lin S, Madapu M, Maile MD, McQuaid-Hanson E, Priessnitz K, Sela HY, Shah A, Sobolewski P, Toledo P, Tsen LC, **Bateman BT**. Risk Factors, Etiologies, and Screening Tools for Sepsis in Pregnant Women: A Multicenter Case-Control Study. *Anesthesia and analgesia* 2018.
116. Bermas BL, Kim SC, Huybrechts K, Mogun H, Hernandez-Diaz S, **Bateman BT**, Desai RJ. Trends in use of hydroxychloroquine during pregnancy in systemic lupus erythematosus patients from 2001 to 2015. *Lupus* 2018:961203317749046. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
117. Bingham D, Scheich B, **Bateman BT**. Structure, Process, and Outcome Data of AWHONN's Postpartum Hemorrhage Quality Improvement Project. *Journal of obstetric, gynecologic, and neonatal nursing : JOGNN* 2018;47:707-18.

118. Bortoletto P, Prabhu M, Garry EM, Huybrechts KF, Anchan RM, **Bateman BT**. Opioid dispensing patterns after oocyte retrieval. *Fertility and sterility* 2018;110:905-9. (published with editorial)
119. Butwick AJ, Abreo A, **Bateman BT**, Lee HC, El-Sayed YY, Stephansson O, Flood P. Effect of Maternal Body Mass Index on Postpartum Hemorrhage. *Anesthesiology* 2018;128:774-83. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
120. Gray KJ, Kovacheva VP, Mirzakhani H, Bjornes AC, Almoguera B, DeWan AT, Triche EW, Saftlas AF, Hoh J, Bodian DL, Klein E, Huddleston KC, Ingles SA, Lockwood CJ, Hakonarson H, McElrath TF, Murray JC, Wilson ML, Norwitz ER, Karumanchi SA, **Bateman BT**, Keating BJ, Saxena R. Gene-Centric Analysis of Preeclampsia Identifies Maternal Association at PLEKHG1. *Hypertension* 2018;72:408-16. (published with editorial) (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
121. Hernandez-Diaz S, Huybrechts KF, Desai RJ, Cohen JM, Mogun H, Pennell PB, **Bateman BT**, Patorno E. Topiramate use early in pregnancy and the risk of oral clefts: A pregnancy cohort study. *Neurology* 2018;90:e342-e51. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
122. Huybrechts KF, Broms G, Christensen LB, Einarsdottir K, Engeland A, Furu K, Gissler M, Hernandez-Diaz S, Karlsson P, Karlstad O, Kieler H, Lahesmaa-Korpinen AM, Mogun H, Norgaard M, Reutfors J, Sorensen HT, Zoega H, **Bateman BT**. Association Between Methylphenidate and Amphetamine Use in Pregnancy and Risk of Congenital Malformations: A Cohort Study From the International Pregnancy Safety Study Consortium. *JAMA psychiatry* 2018;75:167-75. (published with editorial)
123. Huybrechts KF, Hernandez-Diaz S, Straub L, Gray KJ, Zhu Y, Patorno E, Desai RJ, Mogun H, **Bateman BT**. Association of Maternal First-Trimester Ondansetron Use With Cardiac Malformations and Oral Clefts in Offspring. *JAMA* 2018;320:2429-37. (published with editorial)
124. Kim DH, Mahesri M, **Bateman BT**, Huybrechts KF, Inouye SK, Marcantonio ER, Herzig SJ, Ely EW, Pisani MA, Levin R, Avorn J. Longitudinal Trends and Variation in Antipsychotic Use in Older Adults After Cardiac Surgery. *Journal of the American Geriatrics Society* 2018;66:1491-8. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
125. Ladha KS, **Bateman BT**, Houle TT, De Jong MAC, Vidal Melo MF, Huybrechts KF, Kurth T, Eikermann M. Variability in the Use of Protective Mechanical Ventilation During General Anesthesia. *Anesthesia and analgesia* 2018;126:503-12. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
126. Ladha KS, Gagne JJ, Patorno E, Huybrechts KF, Rathmell JP, Wang SV, **Bateman BT**. Opioid Overdose After Surgical Discharge. *JAMA* 2018;320:502-4.

127. Merriam AA, Wright JD, Siddiq Z, D'Alton ME, Friedman AM, Ananth CV, **Bateman BT**. Risk for postpartum hemorrhage, transfusion, and hemorrhage-related morbidity at low, moderate, and high volume hospitals. *The journal of maternal-fetal & neonatal medicine* 2018;31:1025-34.
128. Mundkur ML, Rough K, Huybrechts KF, Levin R, Gagne JJ, Desai RJ, Patorno E, Choudhry NK, **Bateman BT**. Patterns of opioid initiation at first visits for pain in United States primary care settings. *Pharmacoepidemiology and drug safety* 2018;27:495-503.
129. Panchaud A, Cohen JM, Patorno E, Huybrechts KF, Desai RJ, Gray KJ, Mogun H, Hernandez-Diaz S, **Bateman BT**. Anticonvulsants and the risk of perinatal bleeding complications: A pregnancy cohort study. *Neurology* 2018;91:e533-e42.
130. Park Y, **Bateman BT**, Kim DH, Hernandez-Diaz S, Patorno E, Glynn RJ, Mogun H, Huybrechts KF. Use of haloperidol versus atypical antipsychotics and risk of in-hospital death in patients with acute myocardial infarction: cohort study. *BMJ* 2018;360:k1218. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
131. Park Y, Hernandez-Diaz S, **Bateman BT**, Cohen JM, Desai RJ, Patorno E, Glynn RJ, Cohen LS, Mogun H, Huybrechts KF. Continuation of Atypical Antipsychotic Medication During Early Pregnancy and the Risk of Gestational Diabetes. *The American journal of psychiatry* 2018;175:564-74. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
132. Prabhu M, Clapp MA, McQuaid-Hanson E, Ona S, O'Donnell T, James K, **Bateman BT**, Wylie BJ, Barth WH, Jr. Liposomal Bupivacaine Block at the Time of Cesarean Delivery to Decrease Postoperative Pain: A Randomized Controlled Trial. *Obstetrics and gynecology* 2018;132:70-8. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
133. Prabhu M, Dubois H, James K, Leffert LR, Riley LE, **Bateman BT**, Henderson M. Implementation of a Quality Improvement Initiative to Decrease Opioid Prescribing After Cesarean Delivery. *Obstetrics and gynecology* 2018;132:631-6. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
134. Prabhu M, Garry EM, Hernandez-Diaz S, MacDonald SC, Huybrechts KF, **Bateman BT**. Frequency of Opioid Dispensing After Vaginal Delivery. *Obstetrics and gynecology* 2018;132:459-65.
135. Sayal P, **Bateman BT**, Menendez M, Eikermann M, Ladha KS. Opioid Use Disorders and the Risk of Postoperative Pulmonary Complications. *Anesthesia and analgesia* 2018;127:767-74. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
136. Sverrisson FA, **Bateman BT**, Aspelund T, Skulason S, Zoega H. Preeclampsia and academic performance in children: A nationwide study from Iceland. *PloS one* 2018;13:e0207884. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)

137. International Surgical Outcomes Study (ISOS) group. Prospective observational cohort study on grading the severity of postoperative complications in global surgery research. *Br J Surg*. 2019 Jan;106(2):e73-e80.
138. Schaap T, Bloemenkamp K, Deneux-Tharaux C, Knight M, Langhoff-Roos J, Sullivan E, van den Akker T; INOSS. Defining definitions: a Delphi study to develop a core outcome set for conditions of severe maternal morbidity. *BJOG*. 2019 Feb;126(3):394-401
139. Cohen JM, **Bateman BT**, Huybrechts KF, Mogun H, Yland J, Schatz M, Wurst KE, Hernandez-Diaz S. Poorly Controlled Asthma During Pregnancy Remains Common in the United States. *The journal of allergy and clinical immunology In practice* 2019. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
140. Cohen JM, Huybrechts KF, Patorno E, Desai RJ, Mogun H, **Bateman BT**, Hernandez-Diaz S. Anticonvulsant Mood Stabilizer and Lithium Use and Risk of Adverse Pregnancy Outcomes. *The Journal of clinical psychiatry* 2019;80. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
141. Dave CV, Patorno E, Franklin JM, Huybrechts K, Sarpatwari A, Kesselheim AS, **Bateman BT**. Impact of State Laws Restricting Opioid Duration on Characteristics of New Opioid Prescriptions. *Journal of general internal medicine* 2019.
142. Desai RJ, Jin Y, Franklin PD, Lee YC, **Bateman BT**, Lii J, Solomon DH, Katz JN, Kim SC. Association of Geography and Access to Health Care Providers With Long-Term Prescription Opioid Use in Medicare Patients With Severe Osteoarthritis: A Cohort Study. *Arthritis & rheumatology* 2019;71:712-21. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
143. Easter SR, **Bateman BT**, Sweeney VH, Manganaro K, Lasey SC, Gagne JJ, Robinson JN. A comorbidity-based screening tool to predict severe maternal morbidity at the time of delivery. *American journal of obstetrics and gynecology* 2019;221:271 e1- e10. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
144. Fujita N, Grabitz SD, Shin CH, Hess PE, Mueller N, **Bateman BT**, Ecker JL, Takahashi O, Houle TT, Nagasaka Y, Eikermann M. Nocturnal desaturation early after delivery: impact of delivery type and the beneficial effects of Fowler's position. *British journal of anaesthesia* 2019;122:e64-e6. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
145. Gagne JJ, He M, **Bateman BT**. Trends in Opioid Prescription in Children and Adolescents in a Commercially Insured Population in the United States, 2004-2017. *JAMA pediatrics* 2019;173:98-9.
146. Gaulton TG, Wunsch H, Gaskins LJ, Leonard CE, Hennessy S, Ashburn M, Brensinger C, Newcomb C, Wijeyesundera D, **Bateman BT**, Bethell J, Neuman MD. Preoperative Sedative-hypnotic Medication Use and Adverse Postoperative Outcomes.

- Annals of surgery* 2019. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
147. Holland E, **Bateman BT**, Cole N, Taggart A, Robinson LA, Sugrue R, Xu X, Robinson JN. Evaluation of a Quality Improvement Intervention That Eliminated Routine Use of Opioids After Cesarean Delivery. *Obstetrics and gynecology* 2019;133:91-7. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
  148. Prabhu M, Dolisca S, Wood R, James K, **Bateman BT**, Barth WH, Jr., Wylie BJ. Postoperative Opioid Consumption After Scheduled Compared With Unscheduled Cesarean Delivery. *Obstetrics and gynecology* 2019;133:354-63. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
  149. Rough K, Huybrechts KF, Hernandez-Diaz S, Desai RJ, Patorno E, **Bateman BT**. Using prescription claims to detect aberrant behaviors with opioids: comparison and validation of 5 algorithms. *Pharmacoepidemiology and drug safety* 2019;28:62-9.
  150. Sigakis MJG, Jewell E, Maile MD, Cinti SK, **Bateman BT**, Engoren M. Culture-Negative and Culture-Positive Sepsis: A Comparison of Characteristics and Outcomes. *Anesthesia and analgesia* 2019. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
  151. Somerville NJ, Nielsen TC, Harvey E, Easter SR, **Bateman B**, Diop H, Manning SE. Obstetric Comorbidity and Severe Maternal Morbidity Among Massachusetts Delivery Hospitalizations, 1998-2013. *Maternal and child health journal* 2019;23:1152-8. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
  152. Straub L, Huybrechts KF, **Bateman BT**, Mogun H, Gray KJ, Holmes LB, Hernandez-Diaz S. The Impact of Technology on the Diagnosis of Congenital Malformations. *American journal of epidemiology* 2019. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
  153. Reale SC, Easter SR, Xu X, **Bateman BT**, Farber MK. Trends in Postpartum Hemorrhage in the United States From 2010 to 2014. *Anesth Analg.* 2019 Sep 18. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
  154. Khan NF, **Bateman BT**, Landon JE, Gagne JJ. Association of Opioid Overdose With Opioid Prescriptions to Family Members. *JAMA internal medicine* 2019. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
  155. Ladha KS, Neuman MD, Broms G, Bethell J, **Bateman BT**, Wijeyesundera DN, Bell M, Hallqvist L, Svensson T, Newcomb CW, Brensinger CM, Gaskins LJ, Wunsch H. Opioid Prescribing After Surgery in the United States, Canada, and Sweden. *JAMA network open* 2019;2:e1910734. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)

156. Mundkur ML, Franklin JM, Abdia Y, Huybrechts KF, Paterno E, Gagne JJ, Meyer TE, Staffa J, **Bateman BT**. Days' Supply of Initial Opioid Analgesic Prescriptions and Additional Fills for Acute Pain Conditions Treated in the Primary Care Setting – United States, 2014. *MMWR Morbidity and mortality weekly report* 2019;68:140-3.
157. Easter SR, Robinson JN, Menard MK, Creanga AA, Xu X, Little SE, **Bateman BT**. Potential Effects of Regionalized Maternity Care on U.S. Hospitals. *Obstetrics and gynecology* 2019;134:545-52.
158. Huybrechts KF, Hernandez-Diaz S, Straub L, Gray KJ, Zhu Y, Mogun H, **Bateman BT**. Intravenous Ondansetron in Pregnancy and Risk of Congenital Malformations. *JAMA*. 2020 Jan 28;323(4):372-374.
159. Goel A, McGuinness B, Jivraj NK, Wijesundera DN, Mittleman MA, **Bateman BT**, Clarke H, Kotra LP, Ladha KS. Cannabis Use Disorder and Perioperative Outcomes in Major Elective Surgeries: A Retrospective Cohort Analysis. *Anesthesiology*. 2019 Nov 25. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
160. Cesta CE, Cohen JM, Pazzagli L, **Bateman BT**, Bröms G, Einarsdóttir K, Furu K, Havard A, Heino A, Hernandez-Diaz S, Huybrechts KF, Karlstad Ø, Kieler H, Li J, Leinonen MK, Gulseth HL, Tran D, Yu Y, Zoega H, Odsbu I. Antidiabetic medication use during pregnancy: an international utilization study. *BMJ Open Diabetes Res Care*. 2019 Nov 2;7(1):e000759. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
161. Hernández-Díaz S, **Bateman BT**, Palmsten K, Schneeweiss S, Huybrechts KF. Using nationally representative survey data for external adjustment of unmeasured confounders: An example using the NHANES data. *Pharmacoepidemiol Drug Saf*. 2019 Dec 20. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
162. Yland JJ, **Bateman BT**, Huybrechts KF, Brill G, Schatz MX, Wurst KE, Hernández-Díaz S. Perinatal Outcomes Associated with Maternal Asthma and its Severity and Control during Pregnancy. *J Allergy Clin Immunol Pract*. 2020 Jan 22. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
163. Bethell J, Neuman MD, **Bateman BT**, Hill AD, Ladha KS, Wijesundera DN, Wunsch H. Age and postoperative opioid prescriptions: a population-based cohort study of opioid-naïve adults. *Pharmacoepidemiol Drug Saf*. 2020 Feb 13. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
164. Huybrechts KF, **Bateman BT**, Pawar A, Bessette LG, Mogun H, Levin R, Li H, Motsko S, Scantamburlo Fernandes MF, Upadhyaya HP, Hernandez-Diaz S. Maternal and Fetal Outcomes Following Exposure to Duloxetine in Pregnancy: Cohort Study. *BMJ*. 2020 Feb 19;368:m237. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)

165. Neuman MD, Hennessy S, Small DS, Newcomb C, Gaskins L, Brensinger CM, Wijeyesundera DN, **Bateman BT**, Wunsch H. Drug Enforcement Agency 2014 Hydrocodone Rescheduling Rule and Opioid Dispensing after Surgery. *Anesthesiology*. 2020 Feb 19. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
166. He M, Huybrechts KF, Dejene SZ, Straub L, Bartels D, Burns S, Combs DJ, Cottral J, Gray KJ, Manning-Geist BL, Mogun H, Reimers RM, Hernandez-Diaz S, **Bateman BT**. Validation of algorithms to identify adverse perinatal outcomes in the Medicaid Analytic Extract database. *Pharmacoepidemiol Drug Saf*. 2020 Mar 2.
167. Barenie RE, Gagne JJ, Kesselheim AS, Pawar A, Tong A, Luo J, **Bateman BT**. Rates and Costs of Dispensing Naloxone to Patients at High Risk for Opioid Overdose in the United States, 2014-2018. *Drug Saf*. 2020 Mar 16.
168. Lassey SC, Little SE, Saadeh M, Patton N, Farber M, **Bateman BT**, Robinson JN. A Double-Blind Randomized Controlled Trial of a Cephalic Elevation Device for Second Stage Cesarean Delivery. *Obstetrics and Gynecology*. 2020 Apr;135(4):879-884. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
169. Reutfors J, Cesta CE, Cohen JM, **Bateman BT**, Brauer R, Einarsdóttir K, Engeland A, Furu K, Gissler M, Havard A, Hernandez-Diaz S, Huybrechts KF, Karlstad Ø, Leinonen MK, Li J, Man KKC, Pazzagli L, Schaffer A, Schink T, Wang Z, Yu Y, Zoega H, Bröms G. Antipsychotic drug use in pregnancy: A multinational study from ten countries. *Schizophr Res*. 2020 Apr 12. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
170. Reale SC, Tsen LC, Camann WR, **Bateman BT**, Farber MK. The Most Influential Publications in Obstetric Anesthesiology, 1998-2017: Utilizing the Delphi Method for Expert Consensus. *Anesth Analg*. 2020 Apr 10. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
171. Jivraj NK, Raghavji F, Bethell J, Wijeyesundera DN, Ladha KS, **Bateman BT**, Neuman MD, Wunsch H. Persistent Postoperative Opioid Use: A Systematic Literature Search of Definitions and Population-based Cohort Study. *Anesthesiology*. 2020 Mar 31. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
172. Zhu Y, **Bateman BT**, Gray K, Hernandez-Diaz S, Mogun H, Straub L, Huybrechts KF. Oral Fluconazole Use in the First Trimester and Risk of Congenital Malformations. *BMJ*. 2020 May 20;369:m1494. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
173. Naoum EE, Chalupka A, Haft J, MacEachern M, Vandeven CJM, Easter SR, Maile M, **Bateman BT**, Bauer ME. Extracorporeal Life Support in Pregnancy: A Systematic Review. *J Am Heart Assoc*. 2020 Jun 24:e016072. doi: 10.1161/JAHA.119.016072. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)



174. Mahic M, Hernandez-Diaz S, Wood M, Kieler H, Odsbu I, Nørgaard M, Öztürk B, **Bateman BT**, Hjellvik V, Skurtveit S, Handal M. In utero opioid exposure and risk of infections in childhood: A multinational Nordic cohort study. *Pharmacoepidemiol Drug Saf.* 2020 Aug 7. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
175. Gray KJ, Kovacheva VP, Mirzakhani H, Bjornes AC, Almoguera B, Wilson ML, Ingles SA, Lockwood CJ, Hakonarson H, McElrath TF, Murray JC, Norwitz ER, Karumanchi SA, **Bateman BT**, Keating BJ, Saxena R. Risk of preeclampsia in patients with maternal genetic predisposition to common medical conditions: a case-control study. *BJOG.* 2020 Aug 2. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
176. Sun JW, Hernandez-Diaz S, Haneuse S, Bourgeois FT, Vine SM, Olfson M, **Bateman BT**, Huybrechts KF. Selective Serotonin Reuptake Inhibitors and the Risk of Type 2 Diabetes in Children and Adolescents. *JAMA Psychiatry.* 2020 Sep 2. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
177. Chen ST, Huybrechts KF, **Bateman BT**, Hernandez-Diaz S. Trends in human papillomavirus vaccination in commercially insured children in the United States. *Pediatrics.* 2020 Sep 14. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
178. Sun JW, Franklin JM, Rough K, Desai RJ, Hernández-Díaz S, Huybrechts KF, **Bateman BT**. Predicting overdose among individuals prescribed opioids using routinely collected healthcare utilization data. *PLoS One.* 2020;15(10):e0241083.
179. Reale S, Fields KG, Lumbreras-Marquez MI, King CH, Burns S, Huybrechts KF, **Bateman BT**. The Association between the Number of In-Person Healthcare Visits and SARS-CoV-2 Infection in Obstetrical Patients. *JAMA.* 2020 Aug 14:e2015242.
180. Messinger CJ, Lipsitch M, **Bateman BT**, He M, Huybrechts KF, MacDonald S, Mogun H, Mott K, Hernández-Díaz S. Association Between Congenital Cytomegalovirus and the Prevalence at Birth of Microcephaly in the United States. *JAMA Pediatr.* 2020 Sep 14. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
181. Patorno E, Hernandez-Diaz S, Huybrechts KF, Desai RJ, Cohen JM, Mogun H, **Bateman BT**. Gabapentin in pregnancy and the risk of adverse neonatal and maternal outcomes: A population-based cohort study nested in the US Medicaid Analytic eXtract dataset. *PLoS Med.* 2020 Sep 1;17(9):e1003322.
182. Kissler SM, Kishore N, Prabhu M, Goffman D, Beilin Y, Landau R, Gyamfi-Bannerman C, **Bateman BT**, Snyder J, Razavi AS, Katz D, Gal J, Bianco A, Stone J, Larremore D, Buckee CO, Grad YH. Reductions in commuting mobility correlate with geographic differences in SARS-CoV-2 prevalence in New York City. *Nature Commun.* 2020 Sep 16;11(1):4674. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)

183. Huybrechts KF, **Bateman BT**, Zhu Y, Straub L, Mogun H, Kim SC, Desai RJ, Hernandez-Diaz S. Hydroxychloroquine early in Pregnancy and Risk of Birth Defects. *Am J Obstet Gynecol*. 2020 Sep 19:S0002-9378(20)31064-4. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
184. Sun JW, Hernández-Díaz S, Bourgeois FT, Haneuse S, Brill G, **Bateman BT**, Huybrechts KF. Antidiabetic Medication Use in Commercially-Insured Children and Adolescents in the United States from 2004 to 2019. *Diabetes Obes Metab*. 2020 Oct 29. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
185. Sun JW, Bourgeois FT, Haneuse S, Hernández-Díaz S, Landon JE, **Bateman BT**, Huybrechts KF. Development and Validation of a Pediatric Comorbidity Index. *Am J Epidemiol*. 2020 Oct 30:kwa244. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
186. Bykov K, **Bateman BT**, Franklin JM, Vine SM, Patorno E. Association of gabapentinoids with the risk of opioid-related adverse events in surgical patients in the US. *JAMA Netw Open*. 2020 Dec 1;3(12):e2031647. . (published with editorial) (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
187. Bykov K, Patorno E, Franklin JM, Vine SM, **Bateman BT**. Postoperative inpatient utilization of opioid and opioid-sparing analgesics in the United States hospitals, 2007-2017. *Pharmacoepidemiol Drug Saf*. 2020 Dec 23.
188. Zhu Y, Huybrechts KF, Desai RJ, Franklin JM, Hernandez-Diaz S, Krumme A, Straub L, Neuman M, Wunsch H, Levin R, Mogun H, **Bateman BT**. Prescription Opioid Use After Vaginal Delivery and Subsequent Persistent Opioid Use and Misuse. *Am J Obstet Gynecol MFM*. 2020 Dec 28:100304.
189. Huybrechts KF, Kulldorff M, Hernández-Díaz S, **Bateman BT**, Zhu Y, Mogun H, Wang SV. Active Surveillance of the Safety of Medications Used in Pregnancy. *Am J Epidemiol*. 2021 Jan 11:kwa288. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
190. Straub L, Huybrechts KF, Hernandez-Diaz S, Zhu Y, Vine S, Desai RJ, Gray KJ, **Bateman BT**. Chronic Prescription Opioid Use in Pregnancy in the United States. *Pharmacoepidemiol Drug Saf*. 2021 Jan 11.
191. Reale SC, Lumbreras-Marquez MI, King CH, Burns SL, Fields KG, Diouf K, Goldfarb IT, Ciaranello AL, Robinson JN, Gregory KE, Huybrechts KF, **Bateman BT**. Patient characteristics associated with SARS-CoV-2 infection in parturients admitted for labour and delivery in Massachusetts during the spring 2020 surge: A prospective cohort study. *Paediatr Perinat Epidemiol*. 2021 Jan;35(1):24-33. (published with editorial)
192. Wall-Wieler E, **Bateman BT**, Hanlon-Dearman A, Roos LL, Butwick AJ. Association of Epidural Labor Analgesia with Offspring Risk of Autism Spectrum Disorders.

- JAMA Pediatrics*. 2021 Jul 1;175(7):698-705 (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
193. Szmulewicz A, **Bateman BT**, Levin R, Huybrechts KF. Concomitant Use of Z-drugs With Prescription Opioids and The Risk of Overdose: A Population-Based Cohort Study. *American Journal of Psychiatry*. 2021 Apr 26 (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
  194. Esposito DB, **Bateman BT**, Werler M, Straub L, Hernandez-Diaz S, Mogun H, Huybrechts KF. Ischemic placental disease, preterm delivery, and their association with opioid use during pregnancy. *American Journal of Epidemiology*. In press (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
  195. Chiuve SE, Kilpatrick RD, Hornstein MD, Petruski-Ivleva N, Wegrzyn LR, Dabrowski EC, Velentgas P, Snabes MC, **Bateman BT**. Chronic opioid use and complication risks in women with endometriosis: a cohort study in US administrative claims. *Pharmacoepidemiol Drug Saf*. 2021 Feb 21.
  196. Cole NM, Abushoshah I, Fields KG, Carusi DA, Robinson JN, **Bateman BT**, Farber MK. The interrater reliability and agreement of a 0 to 10 uterine tone score in cesarean delivery. *Am J Obstet Gynecol MFM*. 2021 Feb 27;3(3):100342 Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
  197. Combs DJ, Gray KJ, Schulman S, **Bateman BT** Associations of thrombocytopenia, transaminase elevations, and transfusion with laboratory coagulation tests in women with preeclampsia: a cross-sectional study. *Int J Obstet Anesth*. 2021 Mar 11;46:102972
  198. Katz D, **Bateman BT**, Kjaer K, Turner DP, Spence NZ, Habib AS, George RB, Toledano RD, Grant G, Madden HE, Butwick AJ, Lynde G, Minehart RD, Beilin Y, Houle TT, Sharpe EE, Kodali B, Bharadwaj S, Farber MK, Palanisamy A, Prabhu M, Gonzales NY, Landau R, Leffert L. The Society for Obstetric Anesthesia and Perinatology (SOAP) COVID-19 Registry: An analysis of outcomes among pregnant women delivering during the initial SARS-CoV-2 outbreak in the United States. *Anesth Analg*. 2021 Apr 8. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
  199. Hernandez-Diaz S, **Bateman BT**, Straub L, Zhu Y, Mogun H, Fischer M, Huybrechts KF. Safety of Tenofovir Disoproxil Fumarate (TDF) for Pregnant Women facing the COVID-19 Pandemic. *Am J Epidemiol*. 2021 Apr 13:kwab109. (Helped design the study, interpret the data, and revise the manuscript critically for important intellectual content)
  200. **Bateman BT**, Hernandez-Diaz S, Straub L, Zhu Y, Gray KJ, Desai RJ, Mogun H, Gautam N, Huybrechts KF. Association of First Trimester Prescription Opioid Use with Congenital Malformations in the Offspring: Population Based Cohort Study. *BMJ*. 2021 Feb 10;372:n102.
  201. Gyamfi-Bannerman C, Huang Y, **Bateman BT**, Benson RJ, Pack AM, Wright JD, D'Alton ME, Friedman AM. Maternal morbidity and mortality associated with epilepsy. *J Matern Fetal Neonatal Med*. 2021 Jun 21:1-7.

202. Sutherland TN, Wunsch H, Pinto R, Newcomb C, Brensinger C, Gaskins L, **Bateman BT**, Neuman MD. Association of the 2016 US Centers for Disease Control and Prevention Opioid Prescribing Guideline With Changes in Opioid Dispensing After Surgery. *JAMA Netw Open*. 2021 Jun 1;4(6):e2111826.
203. Straub L, Huybrechts KF, Hernandez-Diaz S, Zhu Y, Vine S, Desai RJ, Gray KJ, **Bateman BT**. Trajectories of Prescription Opioid Utilization During Pregnancy Among Pre-Pregnancy Chronic Users and Risk of Neonatal Opioid Withdrawal Syndrome. *Am J Epidemiol*. 2021 Oct 13:kwab249
204. Wood ME, Chen ST, Huybrechts KF, **Bateman BT**, Gray KJ, Seely EW, Zhu Y, Mogun H, Patorno E, Hernández-Díaz S. Validation of a Claims-based Algorithm to Identify Pregestational Diabetes Among Pregnant Women in the United States. *Epidemiology*. 2021 Nov 1;32(6):855-859.
205. Ende HB, Landau R, Cole NM, Burns SM, **Bateman BT**, Bauer ME, Booth JL, Flood P, Leffert LR, Houle TT, Tsen LC. Labor prior to cesarean delivery associated with higher post-discharge opioid consumption *PLoS One*. 2021 Jul 9;16(7):e0253990.
206. Gibbs LR, Pisc JA, Braaten KP, **Bateman BT**, Garry EM. Prescription opioid fills following surgical abortion. *Contraception*. 2021 Jul 28:S0010-7824(21)00340-1.
207. Szmulewicz AG, **Bateman BT**, Levin R, Huybrechts KF. Risk of Overdose Associated With Co-prescription of Antipsychotics and Opioids: A Population-Based Cohort Study. *Schizophr Bull*. 2021 Sep 28:sbab116.
208. Straub L, **Bateman BT**, Hernandez-Diaz S, York C, Zhu Y, Suarez EA, Lester B, Gonzalez L, Hanson R, Hildebrandt C, Homsí J, Kang D, Lee KWK, Lee Z, Li L, Longacre M, Shah N, Tukan N, Wallace F, Williams C, Zerriny S, Mogun H, Huybrechts KF. Validity of claims-based algorithms to identify neurodevelopmental disorders in children. *Pharmacoepidemiol Drug Saf*. 2021 Oct 8.

## Other peer-reviewed scholarship

## Reviews, chapters, monographs and editorials

### Reviews

209. **Bateman BT**, Meyers PM, Schumacher HC, Mangla S, Pile-Spellman J. Conducting stroke research with an exception from the requirement for informed consent. *Stroke* 2003;34:1317-23.
210. **Bateman BT**, Lin E, Pile-Spellman J. Definitive embolization of meningiomas. A review. *Interventional neuroradiology : journal of peritherapeutic neuroradiology, surgical procedures and related neurosciences* 2005;11:179-88.

211. Pan J, Konstas AA, **Bateman B**, Ortolano GA, Pile-Spellman J. Reperfusion injury following cerebral ischemia: pathophysiology, MR imaging, and potential therapies. *Neuroradiology* 2007;49:93-102.
212. **Bateman BT**, Alston TA. Commonly used eponyms in anesthesia. *Journal of clinical anesthesia* 2009;21:67-71.
213. Kikura M, **Bateman BT**, Tanaka KA. Perioperative ischemic stroke in non-cardiovascular surgery patients. *Journal of anesthesia* 2010;24:733-8.
214. Henke VG, **Bateman BT**, Leffert LR. Focused review: spinal anesthesia in severe preeclampsia. *Anesthesia and analgesia* 2013;117:686-93.
215. Hah JM, **Bateman BT**, Ratliff J, Curtin C, Sun E. Chronic Opioid Use After Surgery: Implications for Perioperative Management in the Face of the Opioid Epidemic. *Anesthesia and analgesia* 2017;125:1733-40.
216. Prabhu M, Bortoletto P, **Bateman BT**. Perioperative pain management strategies among women having reproductive surgeries. *Fertility and sterility* 2017;108:200-6.
217. Trotter Davis M, **Bateman B**, Avorn J. Educational Outreach to Opioid Prescribers: The Case for Academic Detailing. *Pain physician* 2017;20:S147-S51.
218. McQuaid-Hanson, Leffert LR, **Bateman BT**. The Role of the Anesthesiologist in Preventing Severe Maternal Morbidity and Mortality. *Clinical obstetrics and gynecology* 2018;61:372-86.
219. **Bateman BT**. What's New in Obstetric Anesthesia: a focus on maternal morbidity and mortality. *International journal of obstetric anesthesia* 2019;37:68-72.
220. **Bateman BT**. What Is New in Obstetric Anesthesia: The 2017 Gerard W. Ostheimer Lecture. *Anesthesia and analgesia* 2019;128:123-7.
221. Birnbach DJ, **Bateman BT**. Obstetric Anesthesia: Leading the Way in Patient Safety. *Obstetrics and gynecology clinics of North America* 2019;46:329-37.
222. Ecker J, Abuhamad A, Hill W, Bailit J, **Bateman BT**, Berghella V, Blake-Lamb T, Guille C, Landau R, Minkoff H, Prabhu M, Rosenthal E, Terplan M, Wright TE, Yonkers KA. Substance use disorders in pregnancy: clinical, ethical, and research imperatives of the opioid epidemic: a report of a joint workshop of the Society for Maternal-Fetal Medicine, American College of Obstetricians and Gynecologists, and American Society of Addiction Medicine. *American journal of obstetrics and gynecology* 2019;221:B5-B28.
223. Naoum EE, Leffert LR, Chitilian HV, Gray KJ, **Bateman BT**. Acute Fatty Liver of Pregnancy: Pathophysiology, Anesthetic Implications, and Obstetrical Management. *Anesthesiology* 2019;130:446-61.
224. Neuman MD, **Bateman BT**, Wunsch H. Inappropriate opioid prescription after surgery. *Lancet* 2019;393:1547-57.

225. Huybrechts KF, **Bateman BT**, Hernandez-Diaz S. Use of real-world evidence from healthcare utilization data to evaluate drug safety during pregnancy. *Pharmacoepidemiology and drug safety* 2019;28:906-22.
226. Soens MA, He J, **Bateman BT**. Anesthesia considerations and post-operative pain management in pregnant women with chronic opioid use. *Seminars in perinatology* 2019;43:149-61.
227. Kim SC, **Bateman BT**. Methodological Challenges in Conducting Large-Scale Real-World Data Analyses on Opioid Use in Musculoskeletal Disorders. *J Bone Joint Surg Am.* 2020 Apr 3

### **Editorials**

228. Kuklina EV, **Bateman BT**. Pregnancy complications and prevention of cardiovascular disease in women: stay tuned. *Journal of women's health* 2011;20:657-9.
229. **Bateman BT**, Eikermann M. Obstructive sleep apnea predicts adverse perioperative outcome: evidence for an association between obstructive sleep apnea and delirium. *Anesthesiology* 2012;116:753-5.
230. **Bateman BT**, Tsen LC. Anesthesiologist as epidemiologist: insights from registry studies of obstetric anesthesia-related complications. *Anesthesiology* 2014;120:1311-2.
231. **Bateman BT**, Brenner GJ. An important step forward in the safe use of epidural steroid injections. *Anesthesiology* 2015;122:964-6.
232. **Bateman BT**, Gagne JJ. The Obstetric Comorbidity Index predicts severe maternal morbidity. *BJOG : an international journal of obstetrics and gynaecology* 2015;122:1756.
233. Mhyre JM, **Bateman BT**. Stemming the Tide of Obstetric Morbidity: An Opportunity for the Anesthesiologist to Embrace the Role of Peridelivery Physician. *Anesthesiology* 2015;123:986-9.
234. **Bateman BT**, Choudhry NK. Limiting the Duration of Opioid Prescriptions: Balancing Excessive Prescribing and the Effective Treatment of Pain. *JAMA internal medicine* 2016;176:583-4.
235. Cahana A, **Bateman BT**, Landau R. The Death of a Prince: Chronicle of a Death Foretold. *Pain practice.* 2016;16:788-90.
236. **Bateman BT**, Smiley R. The 2017 Virginia Apgar Collection Part II: Maternal Safety and Abstract Reasoning. *Anesthesia and analgesia* 2017;124:724-5.
237. Carvalho B, **Bateman BT**. Not Too Little, Not Too Much: Finding the Goldilocks Zone for Spinal Anesthesia to Facilitate External Cephalic Version. *Anesthesiology* 2017;127:596-8.

238. Farber MK, **Bateman BT**. Phenylephrine Infusion: Driving a Wedge in Our Practice of Left Uterine Displacement? *Anesthesiology* 2017;127:212-4.
239. Mhyre JM, **Bateman BT**. Tipping our CAPS to the UKOSS cardiac arrest in pregnancy study. *BJOG : an international journal of obstetrics and gynaecology* 2017;124:1382.
240. Podovei M, **Bateman BT**. The Consensus Bundle on Hypertension in Pregnancy and the Anesthesiologist: Doing All the Right Things for All the Patients All of the Time. *Anesthesia and analgesia* 2017;125:383-5.
241. Prabhu M, **Bateman BT**. Postpartum anemia: missed opportunities for prevention and recognition. *Transfusion* 2017;57:3-5.
242. Mhyre JM, **Bateman BT**. Measuring What Matters to Moms Most. *Anesthesiology* 2019;131:223-5.
243. **Bateman BT**, Carvalho B. Addressing Racial and Ethnic Disparities in Pain Management in the Midst of the Opioid Crisis. *Obstet Gynecol.* 2019 Nov 4.
244. Huybrechts KF, Hernandez-Diaz S, **Bateman BT**. Contextualizing Potential Risks of Medications in Pregnancy for the Newborn: The Case of Ondansetron. *JAMA Pediatrics.* 2020 Jun 1.
245. **Bateman BT**, Robinson JN. Getting Risk Prediction Right. *Obstet Gynecol.* 2020 Aug 6. 2
246. **Bateman BT**, Huybrechts KF. Drug-drug Interactions in Pregnancy: An Important Frontier for Pharmacoepidemiology. *Paediatr Perinat Epidemiol.* 2020 Dec 22
247. Reale SC, Bateman BT, Farber MK. Exploring New Risk Factors for Postpartum Hemorrhage: Time to Consider Gestational Age? *Anesthesiology.* 2021 Jun 1;134(6):832-834.
248. Kharasch ED, Avram MJ, **Bateman BT**, Clark JD, Culley DJ, Davidson AJ, Houle TT, Jiang Y, Levy JH, London MJ, Sleight JW, Vutskits L. Authorship and Publication Matters: Credit and Credibility. *Anesthesiology.* 2021 May 27.

## **Chapters**

249. **Bateman BT**, Ortiz V. Perioperative Hemodynamic Control. In: Wilton Levine (Eds). *Clinical Anesthesia Procedures of the Massachusetts General Hospital*, 2010 Lippencott, Williams&Wilkins. 8<sup>th</sup> Edition p.290.
250. Nozari A, Bagchi A, Saxena R, **Bateman BT**. In: Ronald D. Miller, Lars I. Eriksson, Lee A Fleisher, Jeanine P. Wiener-Kronish, Neal H Cohen, William L. Young (Eds). *Neuromuscular disorders and other genetic disorders. Miller's Anesthesia Textbook*. 2014 8<sup>th</sup> edition. Elsevier Health Sciences: 2014. p. 1266 Chapter 42

251. **Bateman BT**, Polley L. Hypertensive Disorders of Pregnancy. In: David H. Chestnut, Cynthia A Wong (Eds). Chestnut's Obstetric Anesthesiology 5<sup>th</sup> edition. Elsevier Health Sciences: 2014. Chapter 36
252. Tsen LC, **Bateman BT**. Anesthesia for Cesarean Delivery. In: Authors: David H. Chestnut & Cynthia A Wong, MD & Lawrence C Tsen, MD & Warwick D Ngan Kee & Yaakov Beilin & Jill Mhyre & Brian T. Bateman & Naveen Nathan (Eds). Chestnut's Obstetric Anesthesia: Principles and Practice, 6th Edition: 2019 Chapter 26
253. Dyer R, **Bateman BT**. Anesthesia for Cesarean Delivery. In: Authors: David H. Chestnut & Cynthia A Wong, MD & Lawrence C Tsen, MD & Warwick D Ngan Kee & Yaakov Beilin & Jill Mhyre & Brian T. Bateman & Naveen Nathan (Eds). Chestnut's Obstetric Anesthesia: Principles and Practice, 6th Edition: 2019 Chapter 35
254. Padilla C, Easter SR, **Bateman BT**. Identifying the Critically Ill Parturient. In: Einav S., Weiniger C.F., Landau R. (eds) Principles and Practice of Maternal Critical Care. 2020. Springer, Cham.

#### Books/textbooks for the medical or scientific community

255. Editor. *Chestnut's Obstetric Anesthesia: Principles and Practice*. 6<sup>th</sup> edition

#### Case reports

256. Charnin JE, **Bateman BT**, Bittner EA. Pus in the ventricles of a patient with a lumbar cerebrospinal fluid drain for a thoracoabdominal aneurysm repair. *Anesthesiology* 2011;115:1302.
257. Maxey-Jones CL, Palmerton A, Farmer JR, **Bateman BT**. Difficult Airway Management Caused by Local Anesthetic Allergy During Emergent Cesarean Delivery: A Case Report. *A & A case reports* 2017;9:84-6.

#### Letters to the Editor

258. **Bateman BT**, Meyers PM. Protection of research subjects. *The New England journal of medicine* 2003;349:188-92; author reply -92.
259. **Bateman BT**, Callaghan WM, Kuklina EV. Reply: To PMID 22405526. *American journal of obstetrics and gynecology* 2012;206:e5-6.
260. Meyer MJ, **Bateman BT**, Kurth T, Eikermann M. Neostigmine reversal doesn't improve postoperative respiratory safety. *BMJ* 2013;346:f1460.
261. **Bateman BT**, Sandberg WS. In response. *Anesthesia and analgesia* 2014;119:1452.
262. Desai RJ, Hernandez-Diaz S, **Bateman BT**, Huybrechts KF. In Reply: Cho et al. *Obstetrics and gynecology* 2014;124:638.



263. Oberg AS, **Bateman BT**. Authors' reply to Sholapurkar. *BMJ* 2014;349:g6210.
264. Patorno E, **Bateman BT**. Authors' reply to Gupta. *BMJ* 2014;349:g4873.
265. Wanderer JP, **Bateman BT**, Rathmell JP. Opioid use is rising. *Anesthesiology* 2014;121:A23.
266. **Bateman BT**, Butwick AJ, Huybrechts KF. In Response. *Anesthesia and analgesia* 2015;121:1397-8.
267. Huybrechts KF, **Bateman BT**, Hernandez-Diaz S. Maternal Antidepressant Use and Persistent Pulmonary Hypertension of the Newborn--Reply. *JAMA* 2015;314:1294.
268. Ladha KS, **Bateman BT**. In Reply. *Anesthesiology* 2016;125:440-1.
269. McQuaid-Hanson E, Leffert LR, **Bateman BT**. Oral intake during labor: an alternative interpretation of recent data. *American journal of obstetrics and gynecology* 2016;215:672.
270. Sun EC, **Bateman BT**, Memtsoudis SG, Neuman MD, Mariano ER, Baker LC. In Response. *Anesthesia and analgesia* 2018;126:732.
271. **Bateman BT**, Huybrechts KF, Hernandez-Diaz S, Kieler H, Zoega H. beta-Blocker Use in Pregnancy and the Risk for Congenital Malformations. *Annals of internal medicine* 2019;170:909-10.
272. Easter SR, Robinson JN, Menard MK, Creanga AA, Xu X, Little SE, **Bateman BT**. Response to Letter. *Obstet Gynecol.* 2020 Jan;135(1):220-221
273. Huybrechts KF, Hernandez-Diaz S, **Bateman BT**. Ondansetron Use in Pregnancy and Congenital Malformations-Reply. *JAMA.* 2020 May 26;323(20):2097-2098.
274. Huybrechts KF, Hernández-Díaz S, **Bateman BT**. Reporting System Database Analyses?-Reply. *JAMA Pediatr.* 2021 Jan 11.
275. Huybrechts KF, **Bateman BT**, Hernandez-Diaz S. Hydroxychloroquine early in pregnancy and risk of birth defects: Absence of evidence is not the same as evidence of absence. *Am J Obstet Gynecol.* 2021 Jan 9:S0002-9378(21)00021-1.

**Professional educational materials or reports, in print or other media:**

1. **Continuing medical education modules used in the academic detailing programs described below.**
  - a. **Bateman B**, Kim D, Avorn J, Choudhry NK, Fischer M, Hurley E, and Dancel E. *Managing Pain in the elderly*. Alosa Foundation: Boston, MA. Nov 2014

- b. **Bateman B**, Choudhry NK, Fischer M, Avorn J, Kim D, Luo J and Dancel E. *Managing chronic pain in the elderly*. Alosa Health: Boston, MA. January 2018.
- c. **Bateman B**, Avorn J, Fischer M, Choudhry NK, Kim D, Luo J and Dancel E. *Managing acute pain in the elderly*. Alosa Health: Boston, MA. April 2018.
- d. Barenie R, **Bateman B**, Avorn J, Fischer M, Luo J, and Dancel E. *Helping patients manage opioid use disorder*. Alosa Health: Boston MA. September 2019.
- e. Lauffenburger J, **Bateman B**, Avorn J, Fischer M, Luo J, and Dancel E. *Treating acute pain without overusing opioids: Evidence-based management approaches*. Alosa Health: Boston, MA. August 2019.
- f. **Bateman B**, Bykov K, Avorn J, Fischer M, Luo J, and Dancel E. *Managing chronic non-cancer pain: The most recent evidence on effective, safe strategies*. Alosa Health: Boston, MA. August 2019.

These materials were used for the following academic detailing program focused on the treatment of pain without overusing opioids. I also participated in training seminars for the academic detailers involved in these projects.

Massachusetts: The Bureau of Substance Addiction Services provided emergency funding to launch an educational outreach program to primary care providers in Massachusetts in response to the opioid epidemic. This program ran from February to June 2015 and reached over 200 prescribers in the Commonwealth of Massachusetts. Four clinical educators visited prescribers in communities most significantly impacted with opioid overdose deaths to provide education about improving the safety of opioid use, tapering opioid doses, and prescribing or recommending naloxone to reduce overdose risk.

Pharmaceutical Contract for the Elderly (PACE) through the Pennsylvania Department of Aging: Alosa Health's long-standing partnership with the PACE program reaches over 900 prescribers in the state annually on a variety of topics impacting primary care in older adults. The first module launched in 2014 focused on reducing the risks of opioid prescribing for patients with chronic pain and was delivered in Philadelphia, Pittsburgh, Harrisburg, and Wilkes-Barre areas of the Commonwealth. In early 2018, a launch of updated materials focused primary care provider education on non-opioid pain management options, specifically more robust evaluation of the data for non-pharmacologic option for managing pain, emphasis on tapering, prescribing naloxone, and identification of patients with possible opioid use disorder. Coverage expanded to include the Erie area as well. Funding for the PACE program and the subsequent Alosa work is provided via the state lottery system.

PACE/Department of Aging and Department of Health: In September 2019, a joint program through PACE/Dept of Aging and the PA Department of Health will reach providers in Pennsylvania who write opioid prescriptions, without the restriction of providing care to PACE card holders. It is anticipated that this program will expand coverage in the state to include counties in Central PA that are not already engaged through the PACE program as well as providing additional detailing support in areas such as Pittsburgh. Funding for this work was provided to Pennsylvania from the Centers for Disease Control and Prevention.

Aetna: Beginning in December 2018, Alosa launched a clinical education outreach initiative around acute pain, chronic non-cancer pain, and opioid use disorder in Illinois, Maine, Ohio,

Pennsylvania, and West Virginia. This initiative was made possible by an unrestricted educational grant from Aetna.

Maine Independent Clinical Information Service: The 2014 managing pain in the elderly module was but also launched in Maine. This long-standing program through the Maine Medical Society canvases the state using two academic detailers to do one-on-one and small group interactions utilizing materials created by Alosa Health.

2. Co-author of Interim Considerations for Obstetric Anesthesia Care related to COVID19 from the Society for Obstetric Anesthesia and Perinatology.

I currently serve as Professor and Chair of the Department of Anesthesiology, Perioperative, and Pain Medicine at Stanford University School of Medicine.

### **Research**

My scholarship has focused on three main areas of relevance to the practice of obstetric anesthesia: (1) the effects of prescription opioid use in pregnancy and the postpartum, and approaches to improve prescribing practices, (2) the study of medication safety in pregnancy (with a focus on medications commonly used by anesthesiologists), and (3) predictors and management of maternal morbidity. Our group has conducted a series of studies examining the impact of prescription opioid use in pregnancy. We were the first to describe the high prevalence of prescription opioid use during pregnancy in the US using nationwide data. We have subsequently studied risks associated with prescription opioid use in pregnancy, including neonatal abstinence syndrome, ischemic placental complications, and congenital malformations. Ongoing work in this area is funded by an R01 from NIDA for which I am PI (the grant proposal was scored at the 1st percentile). I am also co-PI for a second R01 that aims to evaluate the comparative effectiveness and safety of buprenorphine and methadone in pregnancy (the grant proposal received an impact score of 16; no percentile). We have also worked extensively on defining risks associated with excessive prescribing after delivery and on establishing best practices in relation to opioid prescribing in this context. This is an important focus, as delivery is the most common indication for hospitalization in the US. Our group pioneered the use of a shared decision-making approach to opioid prescribing after cesarean delivery. In this approach, women are educated about the risks and benefits of opioids and select the quantity of opioids they want to be prescribed up to a defined limit, thereby better aligning the quantity of opioids prescribed with patient needs and reducing the leftover opioids available for diversion and misuse. Citing our work, the use of shared decision making to guide postpartum opioid prescriptions was listed as a key recommendation in the recent American College of Obstetrician and Gynecologist guidelines on postpartum pain management. The approach is currently being evaluated in a 14 center, 5,500 patient RCT by the NIH-funded Maternal Fetal Medicine Units Network.

I have been invited to serve on expert panels/workshops related to opioids sponsored by the National Academy of Medicine, the FDA, the NIH, the CDC, and the Department of Health and Human Services. I served as a technical advisor for the recent revision of the Joint Commission's pain management standards. In April 2021, I was appointed to a 4-year term as the Chairperson of FDA's Anesthetic and Analgesic Drug Products Advisory Committee. I previously served a 4-year term (2015-2019) as a voting member of this Committee. Finally, I am currently chairing a Task Force sponsored by the Society for Obstetric Anesthesia and Perinatology/Society of Maternal-Fetal Medicine/American Society for Regional Anesthesia to develop guidelines for peri-delivery analgesia for opioid dependent women.

My second area of emphasis is on the study of medication safety in pregnancy with a focus on medications commonly used by anesthesiologists. With Drs. Sonia Hernandez-Diaz (HSPH) and Krista Huybrechts (BWH), I co-founded and co-direct the Harvard Program in Perinatal and Pediatric Pharmacoepidemiology (H4P). Our group has pioneered the use of advanced epidemiological techniques applied to large, routinely collected healthcare utilization data to evaluate the safety of medications in pregnancy. The group is currently funded by five R01s (for which I serve as PI/co-PI on two, and as Co-I on three), an R01 supplement (for which I am co-PI) and a large FDA contract (for which I am co-PI). This research has been published in leading clinical journals including *JAMA*, *NEJM*, *BMJ*, *Annals of Internal Medicine*, *JAMA Pediatrics*, *JAMA Psychiatry*, and *Obstetrics and Gynecology*. Our work is frequently cited in clinical reviews and guidelines and has prompted labelling changes to medications, demonstrating its clinical impact. With Drs. Hernandez-Diaz and Huybrechts, I am also a founding member of the International Pregnancy Safety Study Consortium (InPress) which is a collaborative effort between investigators from the US and each of the five Nordic countries to pool data for studies evaluating the safety of medications.

My third area of focus is the study of predictors and management of maternal morbidity. This work was frequently done in collaboration with investigators from the Centers for Disease Control and Prevention. We have published studies on a range of pregnancy-related complications including stroke, postpartum hemorrhage, peripartum hysterectomy, and cardiac arrest. I led the development of a Maternal Obstetric Comorbidity Index (OB-CMI). This score has been validated in independent studies in several other countries and is now an accepted and widely used method for risk adjustment in health services/ epidemiological research. Our group recently adapted the OB-CMI for use in routine clinical practice as a risk stratification tool and validated its performance. My additional activities related to maternal morbidity include serving as an expert advisor on a multi-state postpartum hemorrhage quality improvement project and as a member of the Massachusetts Maternal Mortality Review Committee. I am also currently co-PI for a R01 supplement funded by NIDA to describe the epidemiology of postpartum opioid overdose in Medicaid beneficiaries. I also frequently lecture on the management of postpartum hemorrhage and hypertension nationally and internationally.

I served as an Associate Editor of the 6th edition of *Chestnut's Obstetric Anesthesia*, considered the leading textbook in the field. I served on the Society for Obstetric Anesthesia and Perinatology Board of Directors. Recently, I was a member of a five-person committee that developed the criteria for a nationwide Obstetric Anesthesia Center of Excellence Designation, which has subsequently been awarded to approximately 50 institutions. I served as an Associate Editor for *Anesthesiology* from 2014-2020, and as an Editor since 2021. I have served as an ad hoc reviewer for more than 35 journals, including leading clinical journals such as *NEJM*, *JAMA*, and *BMJ*. I have served on nine grant review panels at NIH, and as a reviewer for grant funding agencies from several other countries.

I have presented my work as an invited lecturer in over ten countries, and as a Visiting Professor at many leading anesthesia departments. My work has been recognized by the Society for Obstetric Anesthesia and Perinatology in my selection as the Gerard Ostheimer lecturer in 2017 and by the American Society of Anesthesiologists in my selection as the James E. Cottrell Presidential Scholar Awardee, which is given to one clinical-scientist each year within 10 years of initial faculty appointment for accomplishment in research, in 2018.