

Department of Obstetrics and Gynecology Leadership

Hope Ricciotti, MD

Chair

John Dalrymple, MD

Vice Chair, Faculty Development and Faculty Affairs

Toni Golen, MD

Vice Chair, Quality, Safety, and Performance Improvement

Michele Hacker, ScD

Vice Chair, Research

Christopher Awtrey, MD

Division Director, Gynecologic Oncology

Eman Elkadry, MD

Fellowship Director, Female Pelvic Medicine and Reconstructive Surgery

Mary Herlihy, MD

Director, BIDMC Ambulatory Practices

Hye-Chun Hur, MD, MPH

Division Director, Minimally Invasive Gynecologic Surgery

Fellowship Director, Minimally Invasive Gynecologic Surgery

Janet Li, MD

Section Chief, Female Pelvic Medicine and Reconstructive Surgery

Brianne Mahoney, MD

Assistant Residency Program Director

Bri Anne McKeon, MD

Assistant Medical Student Clerkship Director

Monica Mendiola, MD

Residency Program Director

Maureen Paul, MD, MPH

Division Director, Family Planning

Alan Penzias, MD

Fellowship Director, Reproductive Endocrinology and Infertility

Steven Ralston, MD, MPH

Division Director, Maternal-Fetal Medicine

Fellowship Director, Maternal-Fetal Medicine

Hope Ricciotti, MD

Division Director, General Obstetrics and Gynecology

Celeste Royce, MD

Medical Student Clerkship Director

Kim Thornton, MD

Division Director, Reproductive Endocrinology and Infertility

BIDMC OBGYN ANNUAL REPORT 2016

Contents

- 3 From the Chair
- 7 About BIDMC
- 10 Harvard Medical School
- 11 Living in Boston
- 12 A Medical History of BIDMC
- 18 Honors and Awards

20

QUALITY, SAFETY, AND PERFORMANCE IMPROVEMENT

- 22 Quality Assurance and Improvement
- 24 Research and Collaboration with Ariadne Labs
- 26 Simulation Training

28

RESEARCH

- 29 Program in Epidemiologic Research
- 33 Center for Advanced Biomedical Imaging and Photonics
- 34 Center for Vascular Biology Research

36

MEDICAL EDUCATION

46

GLOBAL AND COMMUNITY HEALTH

- 49 Community Health Consortium
- 51 BIDMC-Botswana
- 54 Global and Community Health: Areas of Activity

56

GENERAL OBSTETRICS AND GYNECOLOGY

- 57 Clinical Care

66

MATERNAL-FETAL MEDICINE

- 67 Clinical Care
- 70 Education
- 73 Research

76

GYNECOLOGIC ONCOLOGY

- 78 Clinical Care
- 80 Education
- 81 Research

84

FAMILY PLANNING

- 86 Clinical Care
- 88 Education
- 89 Research

90

REPRODUCTIVE ENDOCRINOLOGY AND INFERTILITY

- 91 Clinical Care
- 94 Education
- 96 Research

100

MINIMALLY INVASIVE GYNECOLOGIC SURGERY

- 102 Clinical Care
- 104 Education
- 106 Research

108

FEMALE PELVIC MEDICINE AND RECONSTRUCTIVE SURGERY

- 110 Clinical Care
- 112 Education
- 114 Research

118

DIVISION OF UROGYNECOLOGY AT MOUNT AUBURN HOSPITAL

- 119 Clinical Care

120

NEONATOLOGY

- 121 Clinical Care
- 123 Education
- 124 Research

126

NURSING

129

ADDITIONAL RESOURCES

- 130 Social Work
- 132 The Parent Connection

134

PUBLICATIONS

We are devoted to caring for people of diverse backgrounds.

Innovation and Care



Dr. Hope Ricciotti

We are creating a fundamentally different culture.

When you walk into our work space in the Department of OBGYN here at BIDMC, you know you're someplace different. It's immediately clear that our focus on innovation in clinical care, education, and research is unlike that of any other academic department.

The challenges we face in obstetrics and gynecology and in health care today require a new model. In the last century, the focus of health care discovery and advancement was on increasingly smaller functional units of health and disease, down to the level of the individual cell. The issues confronting medicine today beg for a different prototype of an academic department. Academic departments must not only respond to the call for cures but also ensure these cures reach patients safely, effectively, and cost-consciously by simultaneously addressing a wide range of highly complex systemic issues. For instance, how do we as a society

ensure patient safety, improve population health outcomes, and remain cost-conscious in our approach?

To address these and many other difficult yet critical questions, we in OBGYN at BIDMC are leading a fundamental transformation of health care delivery by transforming how we work together, how we think, and what we prioritize. We are creating a fundamentally different academic culture and health care environment by focusing on team integration, smart decision making, and collaborative problem solving among a diverse range of highly valued people.

In our offices, you can see the innovation in our open, bright, and modern physical space, wholly

conducive to collaboration (we'll forgive you for thinking you've entered the offices of a technology start-up). You can also see our difference in the close collaboration among our faculty, trainees, and staff, all bringing their unique perspectives and raising important questions that help us think differently to address the needs of a broad population.

You'll also see that we've left behind the idea of hierarchical protocol. We believe that the best ideas can come from any one of the incredibly smart, talented people on our team, and that everyone should work together as equals.

Perhaps the most important way we are different is palpable far beyond our own walls — resulting from our emphasis on community and social

justice. Many of our full-time faculty members, residents, and medical students deliver care in community health centers in underserved neighborhoods — and then return to BIDMC to lead some of our major educational programs.

I couldn't be more proud to be a part of this team and of our transformation of health care delivery and culture in obstetrics and gynecology.

We hope you will enjoy reading *Our Story*, our 2016 annual report. Here you may acquaint yourself with our clinical, research, and educational programs — all known for excellence, rigor, innovation, empathy, quality, and value. Thank you for reading it.



— Dr. Hope Ricciotti, Chair



Our Mission

To provide outstanding, compassionate patient-centered care, educate future leaders, and support research to improve health outcomes in obstetrics and gynecology, all in an innovative and progressive work environment.



Our Vision

To lead the transformation of health care delivery in obstetrics and gynecology.



Our Values

Integrity, justice, innovation, diversity, collaboration, transparency, compassion.



Who We Are

An affiliate of Harvard Medical School, BIDMC is among the most respected and innovative medical organizations in the world. We provide compassionate patient care, pioneering research, and innovative training for the next generation of clinicians — serving 750,000 patients each year at our flagship campus in the heart of Boston's medical community and at community-based clinics in several of the city's most underserved neighborhoods.

The BIDMC Department of OBGYN — one of the most sought-after teaching programs in the country — delivers a unique blend of patient- and family-centered care combined with academic nurturing.

The BIDMC Department of OBGYN — one of the most sought-after teaching programs in the country — delivers a unique blend of patient- and family-centered care combined with an academic culture that encourages residents and faculty to integrate their personal passions into their professional medical roles. We are driven by our mission to provide highly personalized treatment — from preventive care to complex, state-of-the-art services — to a highly diverse community of women with a broad range of health care needs. We focus our attention on providing the best care possible for each and every patient, including the more than 5,000 babies we deliver each year. As a nationally and internationally respected research facility, BIDMC consistently ranks among the top three recipients of biomedical research funding from the

National Institutes of Health. In all, research funding totals \$229.8 million annually, and BIDMC researchers

run more than 850 active, sponsored projects and 500 funded and nonfunded clinical trials.



THE BIDMC TEAM

- 6,000** Employees
- 819** Staff Physicians (100 OBGYN)
- 1,179** Registered Nurses (249 OBGYN)
- 3,600** Staff Members
- 12** OBGYN Scientists
- 212** OBGYN Support Staff



LICENSED BEDS

- 649** Licensed Beds
- 440** Medical and Surgical
- 77** Critical Care
- 81** Obstetrics
- 48** NICU



Harvard Medical School lives out its mission "to create and nurture a community of the best people committed to leadership in alleviating human suffering caused by disease"



Harvard Medical School

Since opening its doors in 1782 with only three faculty members teaching a handful of students, Harvard Medical School has grown to more than 11,000 faculty and 165 students selected from more than 5,000 applicants each year. In January 2017, Dr. Jeffrey Flier, the Caroline Shields Walker Professor of Medicine, will be succeeded by Dr. George Q. Daley as the dean of Harvard Medical School. Dr. Daley is an outstanding scientist, educator, and leader; a professor of biological chemistry and molecular pharmacology; and the Robert A. Stranaham Professor of Pediatrics.



Medical students at Gordon Hall

Living in Boston

Boston is intellectually and culturally vibrant, relaxed, and livable. It is clean, safe, and mirrors the quality and distinction you'll find at BIDMC. Whether you're new to Boston or a longtime resident, we think you will find living in "The Hub" an exciting experience.

Known worldwide for its state-of-the-art medical facilities, first-class educational institutions, and environment of entrepreneurship, Boston is a hub of history and culture. Today you'll see the city's full history comfortably intertwined with its future-oriented innovation, modernity, and style. BIDMC residents and faculty love the city's diverse neighborhoods, architecture, historical sites, shopping, and cultural offerings.

More than 50 area museums offer exhibits and attractions for art lovers of all ages, from family-oriented activities at the Boston Children's Museum or the Museum of Science to stunning galleries at the Isabella Stewart Gardner Museum. Cheer on the Boston Celtics, the Boston Bruins, and the New England Patriots, or stroll down the street to see the Boston Red Sox play in Fenway Park, the oldest major league ballpark. Boston is also in close proximity to both the mountains of Vermont and New Hampshire and the coastline of Maine and Massachusetts. From skiing in the winter, to hiking, swimming, and boating in the warmer months, there are endless opportunities for outdoor fun.

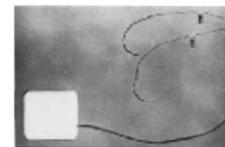


A Medical
History
of BIDMC

A Medical History of BIDMC

BIDMC enjoys a long legacy of being at the forefront of innovation in research, patient care, and education.

- ▶ BIDMC-related
- ▶ OBGYN-specific



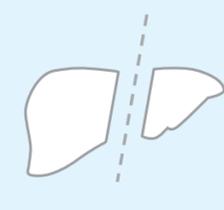
Beth Israel Hospital (BIH) develops first implantable cardiac pacemaker.

1960



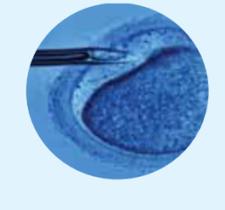
BIH implements nation's first Rights of Patients statement.

1972



Deaconess Hospital performs first successful liver transplant in New England.

1983



BIH delivers first baby conceived through in vitro fertilization in Massachusetts.

1986



BIH researchers are the first to discover evidence that abnormalities in the visual system of the brain help explain dyslexia symptoms.

1991



Deaconess Hospital performs New England's first minimally invasive coronary bypass surgery and implants first deep brain stimulator for treatment of Parkinson's.

1995



BIDMC performs first adult live donor liver transplant in New England.

1998



BIDMC cardiothoracic surgeon William Cohn issues patent for Cohn Cardiac Stabilizer, allowing coronary artery bypass surgery without a heart-lung machine.

2003



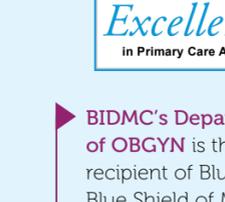
BIDMC researchers discover probable cause of preeclampsia and publish results in the *New England Journal of Medicine* and the *Journal of Clinical Investigation*.

2005



BIDMC reports the involvement of sFlt-1 in preeclampsia in *NEJM*.

2006



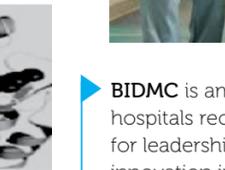
US News & World Report places BIDMC among nation's Best Hospitals in six clinical specialties.

2007



BIDMC's Department of OBGYN is the first recipient of Blue Cross Blue Shield of Massachusetts Health Care Excellence Award in patient safety programs.

2008



BIDMC reports in *Nature* that the COMT gene, known for its role in schizophrenia, also plays a role in preeclampsia.

2009



BIDMC is among three hospitals recognized for leadership and innovation in quality, safety, and commitment to patient care as an American Hospital Association–McKesson Quest for Quality Prize® finalist.

2010



BIDMC is awarded \$38.2 million from the National Institutes of Health as part of the American Recovery and Reinvestment Act.

2011



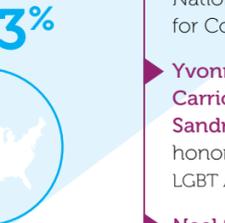
US News & World Report names BIDMC Top Hospital, plus Honorable Mention for gynecology.

2012



International Board of Lactation Consultant Examiners and International Lactation Consultant Association recognize BIDMC for excellence in lactation care.

2013



Becker's Hospital Review places BIDMC on its list of year's 100 Great Hospitals.

2014



BIDMC is designated as a Center of Excellence: Continence Care by the National Association for Continence.

2015



New England Center for Placental Disorders is created at BIDMC.

2016



Neel Shah, MD, MPP, is named one of the "40 Health Care Innovators Under 40" by MedTech Boston.

2016

Honors and Awards

The BIDMC family includes a large staff of dedicated employees, both working behind the scenes and caring for patients directly. Here is just a sample of special awards and honors received recently.



AWARD RECIPIENTS

Hope Ricciotti, MD, was honored with the **Charles J. Hatem Award** for Faculty Development in Medical Education at Harvard Medical School.

Katharyn Meredith Atkins, MD, received the 2016 **Grant V. Rodkey, MD Award for Outstanding Contributions to Medical Education** from the Massachusetts Medical Society.

She also won the **Charles McCabe, MD Faculty Prize for Excellence in Teaching** from BIDMC.

John Dalrymple, MD, became the **chair of the Clinical Skills Assessment Working Group** at Harvard Medical School.

Janet Li, MD and **Werner Neuhausser, MD, PhD**, received an **Eleanor and Miles Shore 50th Anniversary Fellowship** from BIDMC and Harvard Medical School.

Monica Mendiola, MD, has been accepted as a **Rabkin Fellow in Medical Education** from BIDMC.

Celeste Royce, MD, was awarded the **Curtis Prout Academy Fellowship in Medical Education** from Harvard Medical School.

Neel Shah, MD, MPP, was the premier speaker at the **Annual Meeting of the American College of Nurse-Midwives**.

BIDMC received its fourth **Excellence in Commuting Options Pinnacle Award** from the Massachusetts Department of Transportation.

The Leapfrog Group, an independent industry watchdog, gave all four hospitals in the BIDMC system "A" grades in their **Spring 2016 Hospital Safety Score**.

Our goal is to improve care through education. We highlight our successes and continuously question where we could do better.

Elevated to a formal division in 2011 with the appointment of Dr. Toni Golen as vice chair, the division works to analyze cases, identify opportunities for systematic process improvement, comply with regulatory guidelines, and create an environment of just culture. BIDMC's

institutional goal of eliminating preventable harm is embedded in quality improvement projects. Through teamwork, simulation, and transparency, we look critically at ourselves and identify opportunities to prevent adverse outcomes and improve patient satisfaction.

Quality, Safety, and
Performance Improvement

Quality Assurance and Improvement

Our program is structured around traditional case review, project-based quality improvement, and sentinel event analysis. The OBGYN Quality Assurance Committee — including attending physicians, residents, nurse-midwives, and nurses, representing all specialties — reviews cases based on indicators described by The Joint Commission, the American College of Obstetricians and Gynecologists, and the Harvard Risk Management Foundation. Staff members also submit specific concerns regarding a patient's care to the committee. Committee members serve as volunteers and commit to the goals of monitoring and enhancing the quality of patient care.

While the Quality Assurance Committee assesses individual cases, quality improvement groups develop systems for improving the processes involved in patient care. Many ideas for quality improvement projects are generated by Quality Assurance Committee case reviews, where gaps in systems-based practice are identified.

RECENT IMPROVEMENTS

- The initiation of a system to limit the number of elective inductions of labor
- Development of care pathways for patients undergoing urogynecologic and benign hysterectomy procedures
- Ongoing drills to improve team performance in emergency deliveries
- Reduction in cesarean delivery rate

Quality, Safety, and Performance Improvement Team

Toni Golen, MD
Vice Chair

Neel Shah, MD, MPP
Obstetrics and Gynecology Faculty
Faculty, Ariadne Labs for Health
Systems Innovation
Founder and Executive Director
www.CostsofCare.org

Jo Ann Jordan, BA
Assistant Director,
Quality Improvement
Specialist, Data Analysis

Roger Lefevre, MD
Vice Chair, Quality Assurance
Committee/Gynecology

Mary Vadnais, MD, MPH
Vice Chair, Quality Assurance
Committee/Obstetrics

Gina Murphy, RN
Elise Porter, MBA
Celeste Royce, MD
Co-Chairs, Quality Improvement
Committee/Gynecology

Toni Golen, MD
Elizabeth Kester, RN
Co-Chairs, Quality Improvement
Committee/Obstetrics

Toni Golen, MD
Philip Hess, MD
Hope Ricciotti, MD
Mary Vadnais, MD, MPH
Co-Directors, Obstetrical
Simulation Program

Susan Mann, MD
Director, Team Training
Didactic Course



Drs. Neel Shah, Toni Golen,
and Atul Gawande (left to right)



BIDMC faculty,
residents, and staff participate
in one of our simulation exercises

Research and Collaboration with Ariadne Labs

Through a close collaboration with Dr. Atul Gawande and Ariadne Labs, as well as BIDMC-based research projects, we aim to identify opportunities to improve care, design systematic interventions, measure outcomes, and make care safer for patients and families.

By bringing together expertise in obstetrics, nursing, management, engineering, and design, we are developing novel tools to improve the care that childbirth facilities provide.

OUR RECENT COLLABORATIONS

- With support from the Rx Foundation, we are leading a collaboration among 53 hospitals and have uncovered early evidence that competent management of childbirth facilities can help address the epidemic of unnecessary cesarean deliveries.
- In a first-of-its-kind study supported by the Robert Wood Johnson Foundation, we partnered with the MASS Design Group to investigate how facility design impacts the way clinical decisions are made.
- With support from Square Roots, we are developing data-driven methods to help families understand the differences in quality among childbirth facilities.
- With support from the CRICO/Harvard Risk Management Foundation, we partnered with the MIT Computer Science and Artificial Intelligence Laboratory to develop software to simulate the BIDMC labor and delivery unit. We have learned “rules of thumb” that nurses use to make complex decisions under challenging conditions. We are exploring opportunities to support nurses through research with the Boston College Connell School of Nursing.
- In collaboration with Aalborg University in Denmark, we are analyzing the world’s most comprehensive database of long-term outcomes to determine whether cesarean delivery may have a significant effect on future health. In addition, we analyzed data from 194 countries and found that national cesarean delivery rates greater than 19% are not associated with improvements in maternal and infant mortality.
- Aspects of this research were published in the *Journal of the American Medical Association*, *Birth*, and *The Lancet*; presented in keynote lectures around the world; and featured in CNN’s *Great Big Story*, *The Atlantic*, and on National Public Radio.



A recent simulation training exercise

Dr. Toni Golen explains a procedure

Simulation Training

The Department of OBGYN at BIDMC is a national leader in simulation training, which is a key aspect of our culture of safety and participation. Our obstetricians, midwives, and trainees undergo mandatory annual obstetrical simulation training; and our trainees perform semiannual gynecologic surgical skills simulation. Since 2007, the BIDMC Obstetrics Simulation program has grown from a simple exercise involving shoulder dystocia to a comprehensive, multidisciplinary program.

SIMULATION PROGRAM

- Complex clinical scenarios
- A rich collection of high-acuity, low-frequency events
- Immediate standardized feedback
- Structured debriefing
- A combination of high- and low-fidelity models

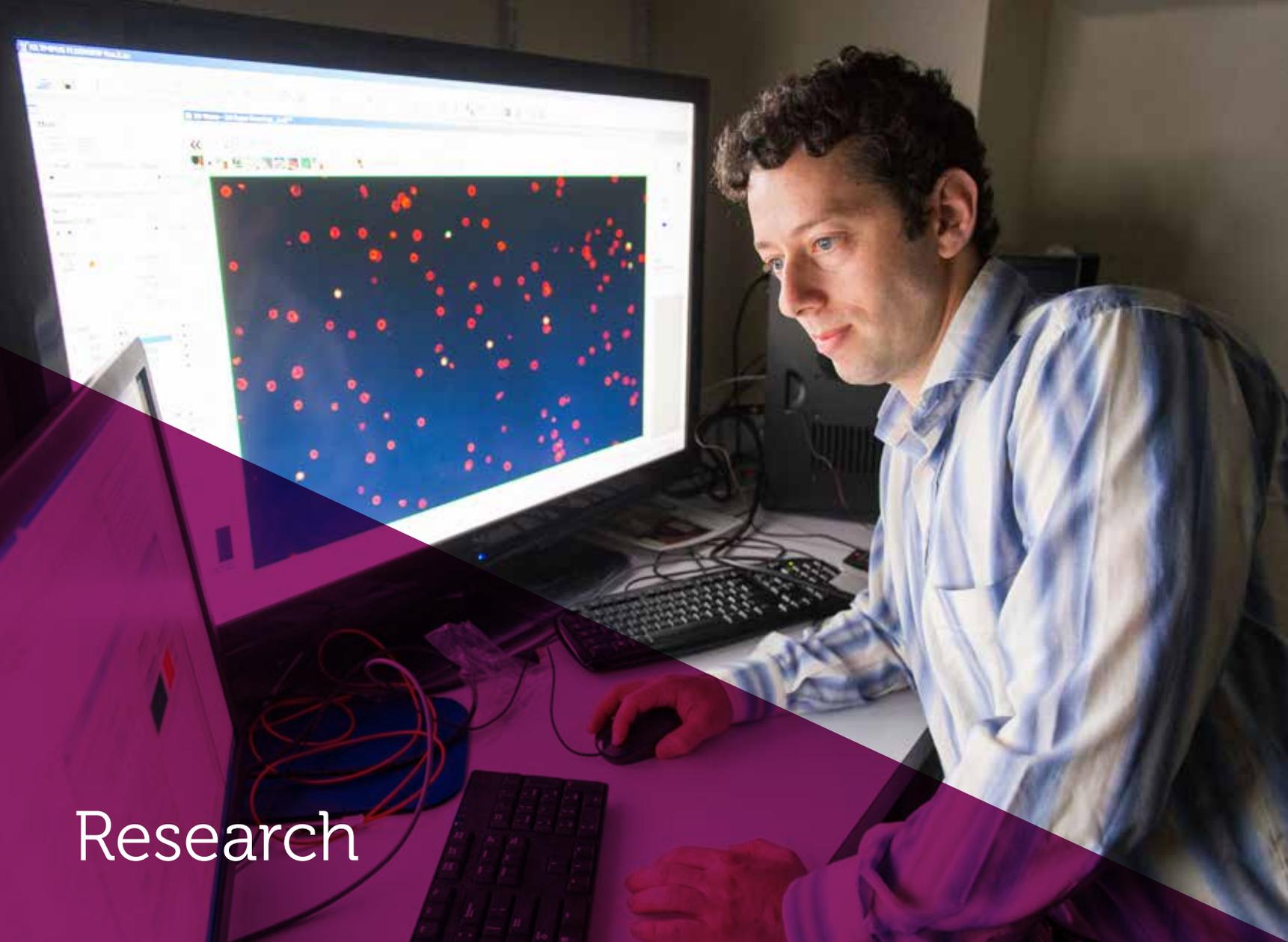
Our simulation program is based on the belief that teamwork and communication are the foundation on which clinical and technical skills are built. Learners are asked to demonstrate knowledge, technical skill, and teamwork behavior appropriate for these obstetrical events.

OBJECTIVES

- To provide a safe environment to demonstrate and improve teamwork communication and care, with a particular focus on high-acuity, low-frequency events
- To provide individual feedback in a structured, nonpunitive environment by using an objective assessment tool
- To provide related didactic education to physicians, midwives, and nurses

The Department of OBGYN has signed an agreement with CRICO/Harvard Risk Management Foundation that links participation to privileging.





Research

Program in Epidemiologic Research

The Program in Epidemiologic Research supports the department's basic science as well as translational, clinical, public health, and medical education projects that enhance the interests and expertise of the faculty, fellows, residents, and medical students. Mentorship and assistance with study design, protocol development, institutional review board approval, study implementation, data collection and management, data analysis, manuscript preparation, and grant writing are all provided, with an emphasis on the research endeavors of residents, fellows, and junior faculty.

Each academic year concludes with Resident Research Day, where both the department and hospital residents are honored for their outstanding projects.

Collaboration with other departments and institutions has also improved our understanding of disease and the delivery of health care. For example, a project on the pathogenesis of preeclampsia has led to exciting new findings and potential clinical therapies; an ongoing study of gene expression in pregnancies complicated by intrauterine growth restriction also holds promise.



We anticipate similarly interesting results from a prospective cohort study investigating the relationship between epigenetics of the cervix and spontaneous preterm birth, which is led by Dr. Heather Burris from the Department of Neonatology.

The department places special emphasis on epidemiology and public health policy as they relate to health among the vulnerable

and underserved, both locally and internationally.

Our faculty also works with academic, governmental, and nongovernmental partners to better understand health care needs during humanitarian crises. Current research addresses stigma after sexual violence, prevention of gender-based violence among refugee populations, and disaster preparedness in humanitarian settings.

Residents and fellows routinely present at national and international meetings and publish in peer-reviewed journals. Projects include prospective and retrospective observational studies, randomized controlled trials, mixed-methods surveys, and experimental animal models.

RESIDENT-INITIATED PROJECTS

- Investigation of patient-collected samples for HPV testing among women with limited access to medical care in Boston
- Assessment of the clinical characteristics of preeclampsia and eclampsia in rural Haiti
- Evaluation of postpartum IUD placement in Uganda

RECENT TOPICS

- Timing of voiding on the ability to accurately assess the cervix with transvaginal ultrasonography
- Botulinum toxin injections for chronic pelvic pain
- In vitro fertilization outcomes in young women
- Simulation training for minimally invasive surgery and obstetric complications
- Adolescent perspectives on family planning services
- Effect of maternal stress and resilience on the infant stress response
- The Resident-as-Teacher program
- Effectiveness of a new curriculum for teaching quality improvement
- Team training at ambulatory reproductive health centers

Dr. Le Qiu in the Center for
Advanced Biomedical Imaging and Photonics

Research Team

Michele Hacker, ScD, MSPH
Vice Chair, Research
Director, Program in
Epidemiologic Research

Lev Perelman, PhD
Director, Center for Advanced
Biomedical Imaging and Photonics

S. Ananth Karumanchi, MD, PhD
Director, Center for Vascular
Biology Research

Elisa Berson
Heather Burris, MD, MPH
Laura Dodge, ScD, MPH
Miriam Haviland, MSPH
Jonathan Hecht, MD, PhD
Irving Itzkan, PhD
Umar Khan
Yunping Li, MD
Anna Merport Modest, MPH

Dayna Neo, MPH
Werner Neuhausser, MD, PhD
Le Qiu, PhD
Saira Salahuddin, PhD
Alla Turshudzhian
Vladimir Turzhitsky, PhD
Edward Vitkin, PhD
Yuri Zakharov, PhD
Lei Zhang, PhD

Center for Advanced Biomedical Imaging and Photonics

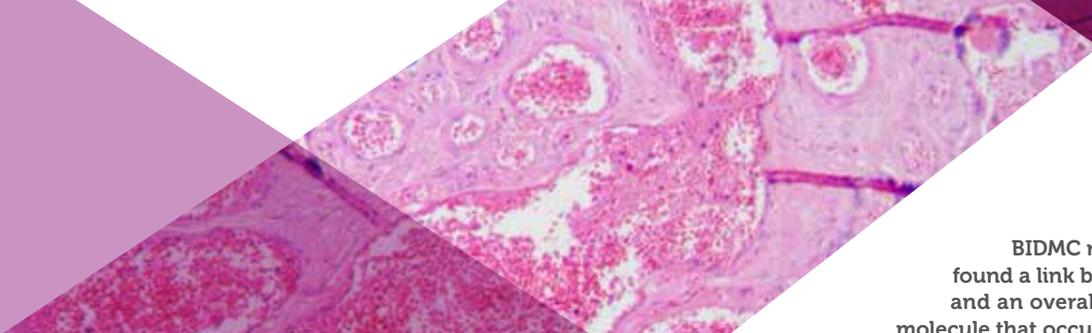
Lev Perelman, PhD, Director

Studies of in vivo optical detection of preinvasive cancer focus on optical scanning and multispectral imaging of the surface of various organs in the reproductive and gastrointestinal tracts in order to provide a diagnosis in near real time. This approach provides a tool for screening populations of patients for precancerous changes. BIDMC researchers pilot-tested this instrument on the esophagus and successfully guided biopsies to detect and map sites of invisible dysplasia that would have been missed by the current standard of care.

We are also investigating optical spectroscopic techniques for noninvasive prenatal diagnosis. The search has focused on fetal nucleated red blood cells. We have demonstrated that properties of fetal nucleated red blood cells provide a biomarker and enable isolation of these cells from maternal blood samples. This brings us closer to our goal of developing a non-invasive prenatal genetic testing technique.



Novel optical spectroscopic approaches are often vastly superior to traditional ones. They are noninvasive, rapid, and relatively inexpensive, and they will become powerful clinical tools of the near future. —Dr. Lev Perelman



BIDMC researchers first found a link between preeclampsia and an overabundance of sFlt-1, a molecule that occurs naturally in the placenta



Drs. Agnes Lo (left) and S. Ananth Karumanchi

Center for Vascular Biology Research

S. Ananth Karumanchi, MD, PhD
Director

Joint research with BIDMC's Department of Medicine has helped diagnose and treat preeclampsia — a disease that complicates 5% of pregnancies worldwide and is a cause of maternal and fetal mortality. BIDMC researchers first found a link between preeclampsia and an overabundance of sFlt-1, a molecule that occurs naturally in the placenta. In collaboration with the Hospital for Sick Children in Toronto, researchers

discovered that, when sFlt-1 combines with a second protein called soluble endoglin, preeclampsia can be life-threatening. Through this work, BIDMC has filed for patents on methods of diagnosing and treating preeclampsia. BIDMC researchers are testing whether these two molecules can be used as biomarkers to help



Our laboratory has identified a major pathogenic pathway linked to more than 95% of the cases of preeclampsia — one of the leading complications of pregnancy, with significant risk to mother and baby. —Dr. S. Ananth Karumanchi

clinicians make a more prompt and accurate diagnosis. Although drug-based therapies for preeclampsia may still be a few years away, researchers are optimistic.

Renal specialist Dr. S. Ananth Karumanchi directs this research program, which is also evaluating the pathogenesis of the excess cardiovascular disease noted in women with a history of preeclampsia, as well as noninvasive techniques to evaluate pregnancy in an animal model of preeclampsia.

Other research includes a collaboration with the Department of Neonatology examining the relationship between maternal hypertension and neonatal necrotizing enterocolitis in premature infants.

RESEARCH INITIATIVES

- Genetic and epigenetic studies in preeclampsia
- Molecular mechanisms of syncytialization and placental microparticle release
- Therapeutic studies in preeclampsia
- Mechanisms of preeclampsia-related cardiovascular disease
- Pathogenesis of idiopathic fetal growth restriction
- Novel biomarkers for hyperemesis gravidarum

Our residents become independent leaders who go on to improve health outcomes around the world.

As a major training center for Harvard Medical School, the BIDMC Department of OBGYN honors the academic tradition of excellence in research, patient care and medical education. Our residency program has the innovative qualities that allow our faculty to share their unique expertise while preparing our residents to be independent physician leaders who are needed to improve our nation's health outcomes. BIDMC is a tertiary care center that provides ambulatory and inpatient care to a diverse population through partnerships with healthcare centers that meet the needs of underserved communities. Our longstanding focus on quality and safety has made

us leaders in team training, simulation, and systems improvement. Additionally, our state-of-the-art simulation lab bridges our residents from learning the basics of hysteroscopy to the advanced laparoscopic skills for today's minimally invasive practice.

Our curriculum encompasses not only fundamental medical knowledge but also global and community health, physician wellness, quality improvement, and resident-as-teacher modules. Each resident does research in collaboration with a faculty member and research assistant who mentor them through the design process, data collection, statistical analysis, and manuscript preparation.

Medical Education



Education, along with patient care and research, is central to the department's mission



Graduate Medical Education Team

RESIDENCY PROGRAM LEADERSHIP

Monica Mendiola, MD
Director, Residency Program

Brianne Mahoney, MD
Assistant Director, Residency Program

Martina DiNapoli
Coordinator, Residency Program

RESIDENCY PROGRAM ROTATION DIRECTORS

Huma Farid, MD
Rotation Director, Labor and Delivery

Leslie Garrett, MD
Rotation Director, Gynecologic Oncology

Yvonne Gomez-Carrion, MD
Director, Resident Surgical Practice

Hye-Chun Hur, MD, MPH
Rotation Director, Minimally Invasive Gynecologic Surgery

Roger Lefevre, MD
Rotation Director, Female Pelvic Medicine and Reconstructive Surgery

Ronald Marcus, MD
Co-Director, Resident Ambulatory Practice

Siripanth Nippita, MD, MS
Rotation Director, Family Planning

Jennifer Scott, MD, MBA, MPH
Rotation Director, Global and Community Health

Kim Thornton, MD
Rotation Director, Reproductive Endocrinology and Infertility

Brett Young, MD
Rotation Director, Maternal-Fetal Medicine

Current Residents

CHIEF RESIDENTS

Atena Asiaii, MD, MPH

Erin Brooks, MD, MPH

Olivia Chang, MD, MPH

Jessica Kuperstock, MD

Kari Plewniak, MD

Elizabeth Roberts, MD

PGY3

Jennifer Chu, MD

Kristin Gerson, MD, PhD

Sarah Lambeth, MD

Michelle Lightfoot, MD, MPH

Tariro Mupombwa, MD

Emily Willner, MD

PGY2

Catherine Dieffenbach, MD

Eva Luo, MD, MBA

Sara McKinney, MD

Katherine Nosal, MD

Nisha Verma, MD

Rui Wang, MD

PGY1

Ashley Aluko, MD

Rachel Blake, MD

Anita Cheng, MD

Yamicia Connor, MD, PhD

Jennie Krasker, MD

Laura Smith, MD

Where Are They Now?

Katherine Armstrong, MD
Fellowship in Female Pelvic Medicine and Reconstructive Surgery, BIDMC/Mount Auburn Hospital, Boston, MA

Katherine Johnson, MD
Fellowship in Maternal-Fetal Medicine, BIDMC Boston, MA

Zoe McKee, MD
Faculty Generalist Mount Auburn Hospital Cambridge, MA

Bri Anne McKeon, MD
Faculty Generalist and Medical Student Assistant Clerkship Director, BIDMC Boston, MA

Sara Won, MD
Faculty Generalist, Kaiser Permanente Walnut Creek Medical Center, Walnut Creek, CA

Our fellowship programs attract from among the most gifted future subspecialists, who enrich the learning environment for students and residents as well

Fellowship Programs

FEMALE PELVIC MEDICINE AND RECONSTRUCTIVE SURGERY

Eman Elkadry, MD
Director, Fellowship Program

Lekha Hota, MD
Assistant Director, Fellowship Program

CLASS OF 2017

Hussein Warda, MBBCh
Residency: Hurley Medical Center, Michigan State University Program, Flint MI

CLASS OF 2018

Nabila Noor, MD
Residency: Mount Sinai Medical Center, New York, NY

CLASS OF 2019

Katherine Armstrong, MD
Residency: Beth Israel Deaconess Medical Center, Boston, MA

MINIMALLY INVASIVE GYNECOLOGIC SURGERY

Hye-Chun Hur, MD, MPH
Director, Fellowship Program

CLASS OF 2018

Roa Alammari, MD
Residency: Baystate Medical Center Springfield, MA

MATERNAL-FETAL MEDICINE

Steven Ralston, MD
Director, Fellowship Program

Barbara O'Brien, MD
Associate Director, Fellowship Program

CLASS OF 2017

Melissa Spiel, DO
Residency: University of Connecticut School of Medicine Farmington, CT

CLASS OF 2018

Ai-ris Collier, MD
Residency: University of California School of Medicine Los Angeles, CA

CLASS OF 2019

Bethany Mulla, MD
Residency: Naval Medical Center Portsmouth, VA

REPRODUCTIVE ENDOCRINOLOGY AND INFERTILITY

Alan Penzias, MD
Director, Fellowship Program

CLASS OF 2017

Nina Resetkova, MD, MBA
Residency: Johns Hopkins University School of Medicine Baltimore, MD

CLASS OF 2018

Lauren Albrecht Murphy, MD
Residency: New York Presbyterian/ Weill Cornell Medical Center New York, NY

CLASS OF 2019

Emily Seidler, MD
Residency: Washington University in Saint Louis St. Louis, MO



Drs. Celeste Royce and John Dalrymple discuss the clerkship program

Undergraduate Medical Education (UME)

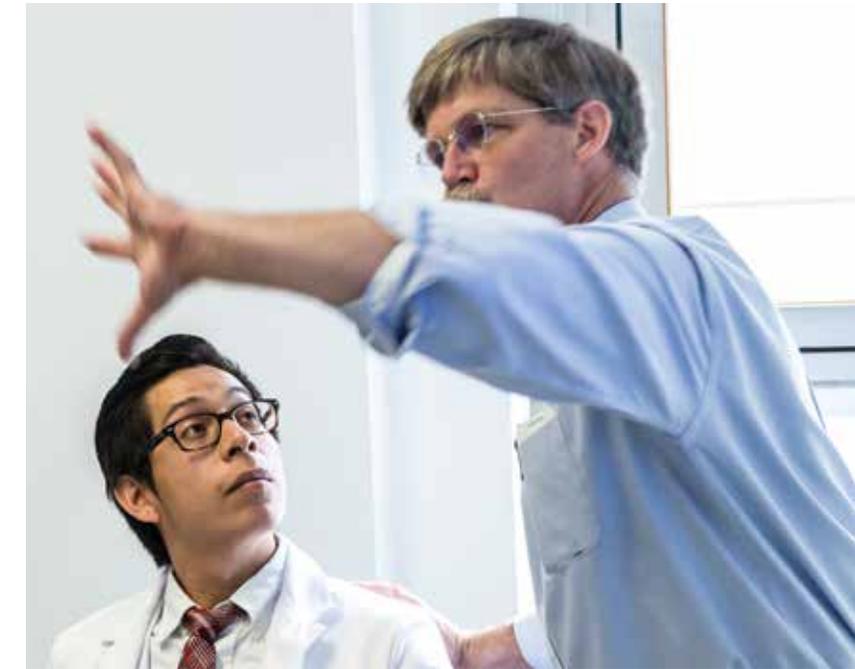
The OBGYN Clerkship educates one-third of the Harvard Medical School class each year, providing students with a well-balanced exposure to all areas of the specialty through ambulatory and inpatient clinical experiences. Our goals are to provide diverse opportunities to develop and refine clinical knowledge, critical thinking, and basic procedural skills; while promoting an awareness and understanding of cultural differences. By working as part of health care teams, students learn to care for individual patients while gaining a deeper understanding of health care systems.

Students rotate on all services, including Labor and Delivery, Maternal-Fetal Medicine, Gynecology, and Gynecologic Oncology, as well as in outpatient specialty clinics. In addition to weekly departmental grand rounds, resident- and student-led small group discussions occur on each service. Learning seminars led by faculty and residents occur throughout the week, and clerkship rounds are a chance for peer-to-peer teaching facilitated by the clerkship director. Skills are developed through workshops on suturing, IUD placement, and vaginal delivery. Unique among the Harvard Medical School teaching hospitals, our students are paired with a core preceptor generalist OBGYN faculty member for the duration of the

clerkship. Students and core preceptors see patients together regularly, providing the experience both of continuity of patient care, as well as continuity of education and professional development.

In August 2015, Harvard Medical School launched the Pathways curriculum, a complete transformation of the undergraduate medical education experience. Students now complete the clinical clerkship year during the second year of medical school, and spend the third and fourth years gaining specialized knowledge in clinical medicine, participating meaningfully in research and scholarly projects. In our department, students may work on quality and safety projects, serve as sub-interns on any of the Reproductive

Dr. Malcolm Mackenzie (below), presenting at a weekly medical student seminar





Dr. Celeste Royce
meets with students



Endocrinology, Gynecologic Oncology, Pelvic Medicine and Reconstructive Surgery, and High Risk Obstetric services, or work in our community health centers.

The goal of the new curriculum is to propel students from knowing to understanding, using the application of basic science knowledge to the analysis, evaluation, synthesis, and creation of solutions to clinical problems.

This approach to teaching medicine fosters habits of active, self-directed learning for continuous, life-long education. We hope students leave the OBGYN rotation at BIDMC with a deeper understanding of all aspects of women's reproductive healthcare, and gain an appreciation for the social context of health care for individuals, families and our wider communities.

OBGYN UME LEADERSHIP

Celeste Royce, MD
Director, Clerkship Program

Malcolm Mackenzie, MD
Associate Director, Clerkship Program

Bri Anne McKeon, MD
Assistant Director, Clerkship Program

L. Renata Vicari
Manager, Medical Education

BIDMC UME LEADERSHIP

Katharyn Meredith Atkins, MD
Director, Undergraduate Medical Education

HARVARD MEDICAL SCHOOL LEADERSHIP

John Dalrymple, MD
Director, Professional Development and Clinical Assessment Integration



Global and Community Health

We are committed to improving health care in an equitable, ethical manner, from Boston to Botswana.

The Global and Community Health Program supports innovative approaches to health care delivery that engage community partners and build capacity through education. We are committed to advancing reproductive health care in an equitable, ethical manner, whether in Boston or Sub-Saharan Africa.

We have a full-time faculty physician at Scottish Livingstone Hospital (SLH) in Molepolole, Botswana, to provide clinical care while educating residents. Trainees engage in service-based learning, including supervised electives and quality improvement projects. This program builds upon a collaboration between the BIDMC

Department of Medicine and the Botswana Harvard Partnership at SLH.

We work to improve global health care delivery and policy through engagement in Harvard-based committees and national and international organizations, including the American College of Obstetricians and Gynecologists, International Federation of Gynecology and Obstetrics, and World Health Organization.

We encourage faculty, staff, and students to participate in service-based projects with local and international partners. Residents may also conduct their clinics in Boston's medically underserved communities at Bowdoin



Our faculty, staff, and students
participate in service-based projects around the world



Street Health Center, BID Chelsea, and South Cove Community Health Center.

Residents may apply to a three-year program, the BIDMC Global Health Residency track. All OBGYN residents participate in cross-disciplinary collaboration and receive mentorship to pursue individual global and community health projects.

Global and Community Health Program Team

Jennifer Scott, MD, MBA, MPH
Director

Rebecca Lockett, MD, MPH

Rose Molina, MD

ADDITIONAL OPPORTUNITIES

- Ambulatory clinical rotation for postgraduate year one residents
- Longitudinal clinics at affiliated health centers
- Development of educational curricula and outreach for the community health center setting
- OBGYN departmental global and community health curriculum
- Hospital-wide global health curriculum and journal club

Community Health Consortium

Lucy Chie, MD, MPH
Program Director

The Community Health Consortium contributes to the goals of the Global and Community Health Program as it leads and develops projects in obstetrics and gynecology to address health disparities faced by the Boston area's diverse population. A network of community health centers staffed by our core teaching faculty provides culturally sensitive and patient-centered care for people from a wide range of ethnic and social



All people deserve the health care they need to live life to the fullest. We are committed to providing the highest quality of care and access to everyone. – Dr. Lucy Chie



Dr. Rose Molina works in Chiapas, Mexico, to implement a Safe Childbirth Checklist



Dr. Rebecca Lockett with two of her students at the Scottish Livingstone Hospital in Molepole, Botswana

backgrounds, including the LGBT community. Our centers function as ambulatory sites for resident practice and medical student programs. Health care leaders from each center come together quarterly at BIDMC to plan clinical programs, educational endeavors, public health research projects, and community service. A fourth-year Harvard Medical School student elective entitled “OBGYN and Women’s Health in Urban Community Settings” is offered to encourage future leaders in community health.

CLINICAL, RESEARCH, AND EDUCATIONAL INITIATIVES

- Urology and OBGYN clinical collaboration to provide urogynecologic care in Cape Verde
- Oncology and OBGYN research collaboration to improve cervical cancer screening in Zimbabwe
- Anesthesia and OBGYN educational collaboration in China to advance training in labor anesthesia

BIDMC-Botswana

In January 2016, the Department of OBGYN expanded the BIDMC-Botswana program by committing a full-time faculty member, Dr. Rebecca Lockett, to Scottish Livingstone Hospital in Molepole, Botswana. The program aims to improve health care and strengthen local capacity. It builds on five years of collaboration between SLH and BIDMC’s Department of Medicine, and on a 20-year pre-existing partnership between the Government of Botswana and the Harvard School of Public Health.

Having a full-time faculty member in Botswana has enabled the creation of a supervised clinical

rotation for BIDMC and other US-based OBGYN residents. In 2016, OBGYN residents Erin Brooks, Katherine Johnson, and Sarah Lambeth joined the Botswana team. They have contributed to important projects including the development of a medical education curriculum for Botswana trainees, the training of general practitioners in performing cesarean deliveries, the introduction of long-acting contraception, and the development of standardized protocols in the antenatal unit.

Dr. Fong Liu, from the Division of Gynecologic Oncology, also visited the Scottish Livingstone Hospital to explore ways in which that team might contribute in the future to the BIDMC-Botswana program.



A Sweet Surprise

*The following is an excerpt from Dr. Olivia Chang's journal entry about meeting "Mama."**

I first saw Mama coming down the hallway of the Antenatal Care Unit. She appeared older but fit as she wobbled down the hallway with a large handheld suitcase and another bag full of groceries. I remembered thinking that she could not have been in labor, as I have not seen many women porter their own luggage while enduring labor pains.

We assigned her Bed 2 out of an enclave of 10 beds for women all in the latent, or early, phase of labor. She tucked her suitcase underneath her bed and placed her bag in the small cabinet provided for patients. This is certainly not her first baby, I thought, as she seemed to know the routine

*"Mama" is an affectionate term used for pregnant women and mothers in Botswana. It is also used here to respect the patient's anonymity.

too well. Before she sat down on her bed, she retrieved her prenatal book from her bag, and while doing so, she appeared to have a contraction as the line between her brows seemed to furrow just softly.

I introduced myself as the *ngaka*, or doctor, in Setswana. She smiled and said, "What is your first name?" I replied, "Olivia." She appeared at ease, and I was not convinced that she was in labor.

"Ngaka, keep me here on the antenatal unit," she said. "This is my fifth baby, and I know that I will have my baby tomorrow."

The next day, Mama was pacing up and down the hallways of the Antenatal Care Unit; in a hospital where routine epidurals are not offered, the best way to endure contractions are by walking and chit-chatting with other pregnant women in the social room. All day, I found her giggling with the woman in Bed 6, holding her gravid uterus in pain, and then quickly sharing an orange with

the woman in Bed 1 before her next contraction came. In the afternoon I performed a vaginal exam, which confirmed that she was in active labor.

"Mama, let's go to the Labor ward," I told her. "You're going to have your baby!" She laughed and gave me an "I told you so" look as she packed up her suitcase and her bag. While at Labor and Delivery, I never heard her from behind the curtained area except for an occasional rustle of the bedsheets — as if to remind the medical staff that she was there. Every time that I checked in on her, she gave me a genuine smile and a "Thank you, Ngaka" in between her painful contractions.

Mama delivered shortly after my work shift ended. I saw her again the next morning on the Postpartum Unit with a beautiful little girl in her arms. It was three days after we had first met.

"Ngaka!" she called out to me. "Come meet my baby Olivia!"

Global and Community Health: Areas of Activity

With a focus on helping to build capacity for obstetric and gynecologic care around the world, the Global and Community Health Program is currently engaged in programs with local community partners across Latin America, Europe, Asia, and Africa.





General Obstetrics and Gynecology

CLINICAL CARE

We provide exceptional care, tailored to each patient and family.

This division provides comprehensive health care in obstetrics, contraception, menopause management, treatment of abnormal Pap tests and abnormal bleeding, and general well-person care. We are committed to caring for people of diverse backgrounds. We work with specialists in Maternal- Fetal Medicine, Gynecologic Oncology, Urogynecology, Family Planning, and Minimally

Invasive Gynecologic Surgery to provide exceptional and tailored care for each patient. Our physicians are available throughout the greater Boston area, including BIDMC, Chelsea, Chestnut Hill, Lexington, Milton, and Needham, as well as the community health centers at Bowdoin Street Health Center, The Dimock Center, South Cove Community Health Center, and Fenway Health.

BIDMC provides outstanding obstetrical and gynecologic care. We have a team of expertly trained doctors and nurses, the latest in technology, and state-of-the-art equipment, along with world-class diagnostic and treatment options in a friendly, comfortable, and safe environment.



Clinical Care Team

Hope Ricciotti, MD
Division Director

Mary Herlihy, MD
Director, Ambulatory Care

Sandra Mason, MD
Clinical Director, Shapiro Practices

Renee Goldberg, MD
Clinical Director, Community Practices

Aisling Lydeard, NP
Nursing Director, Ambulatory OBGYN and Maternal-Fetal Medicine

Donna Feeney, RN
Clinical Manager, Community Practices

BIDMC-BASED FACULTY PRACTICE IN GENERAL OBGYN

Katharyn Meredith Atkins, MD
Laura Bookman, MD
Huma Farid, MD
Toni Golen, MD
Yvonne Gomez-Carrion, MD
Mary Herlihy, MD
Brianne Mahoney, MD
Ronald Marcus, MD
Sandra Mason, MD
Bri Anne McKeon, MD
Neel Shah, MD, MPP

COLPOSCOPY AND LOWER GENITAL TRACT DISEASE CLINIC

Elizabeth Buechler, MD
Clinical Director

COMMUNITY FACULTY PRACTICES IN GENERAL OBGYN

Chelsea
Anjélica Carbajal, MD
Monica Mendiola, MD

Chestnut Hill
Diane Kaufman, MD
Cindy Kobelin, MD

Lexington
Marc Kobelin, MD

Milton
Huma Farid, MD
Alice Shin, MD

Needham
Renee Goldberg, MD
Susan Lincoln, MD

COMMUNITY HEALTH CENTERS

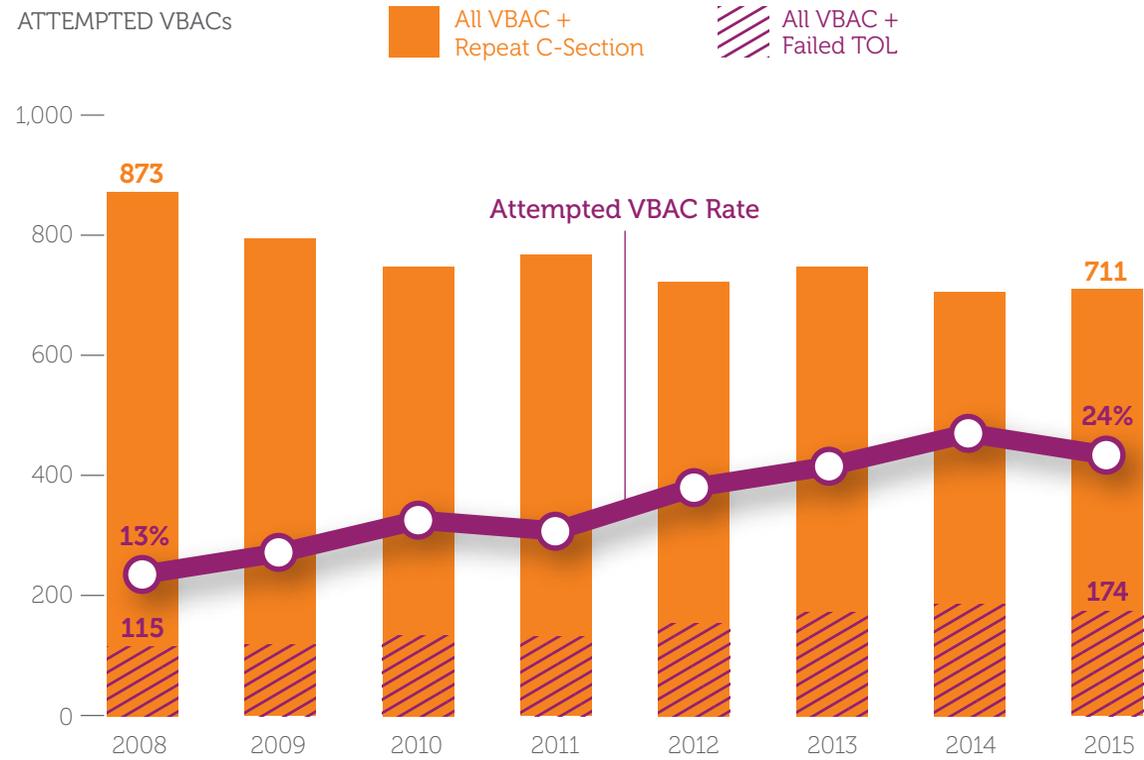
Bowdoin Street Health Center
Celeste Royce, MD
Ebonie Woolcock, MD

The Dimock Center
Kelly Flynn, MD
Alice Han, MD
Rose Molina, MD

Fenway Health
Rebekah Vilorio, MD

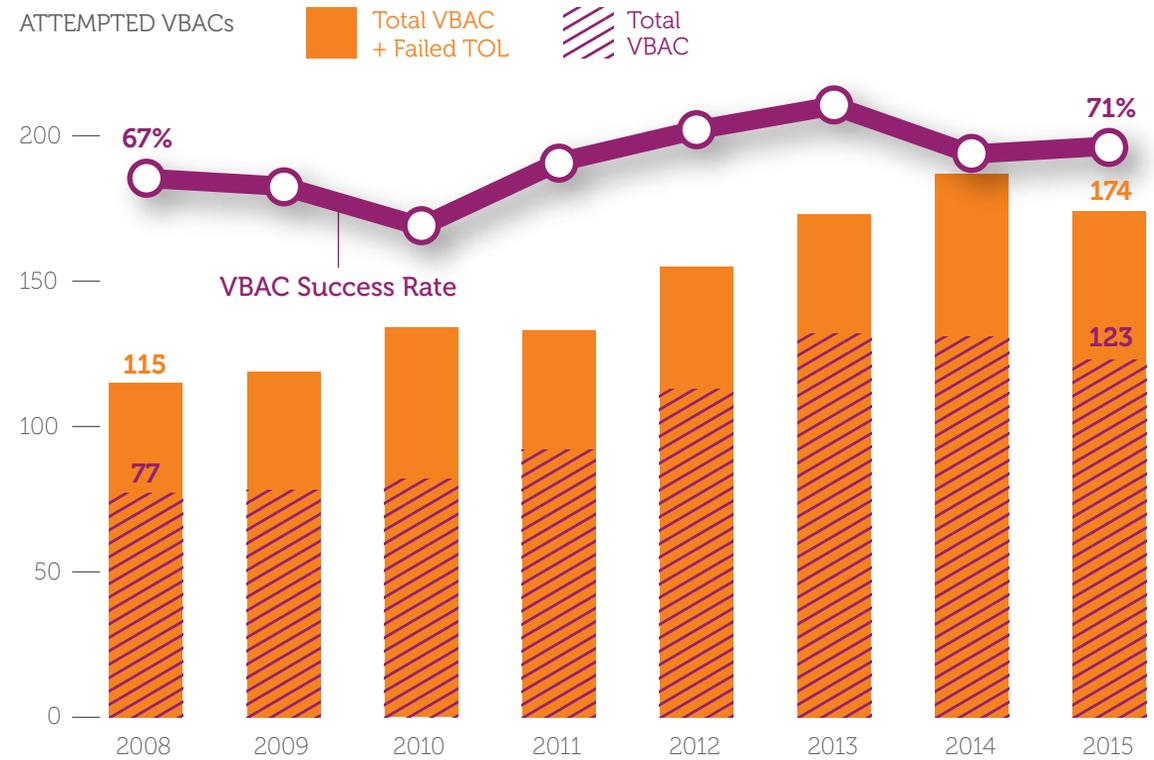
South Cove Community Health Center, Chinatown and Quincy
Lucy Chie, MD, MPH
Janet Chollet, MD
Lily Wu, MD

Attempted VBAC Rate



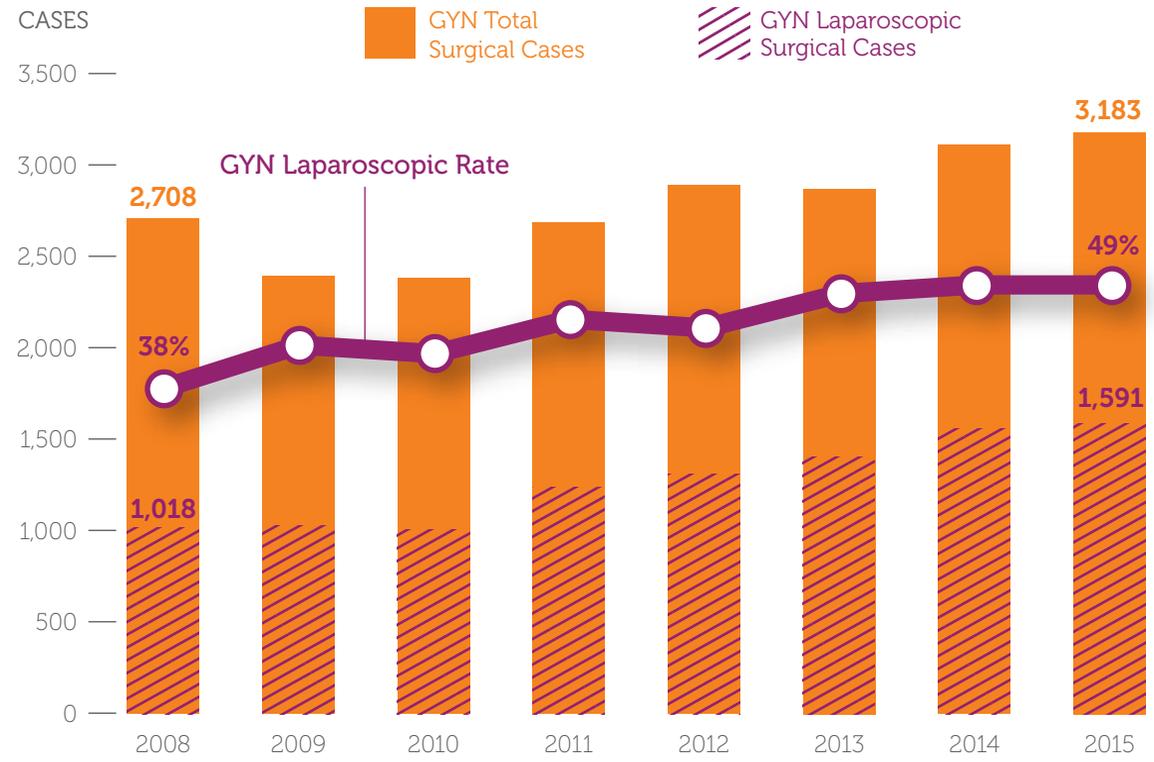
VBAC, vaginal birth after cesarean; TOL, trial of labor.

VBAC Success Rate

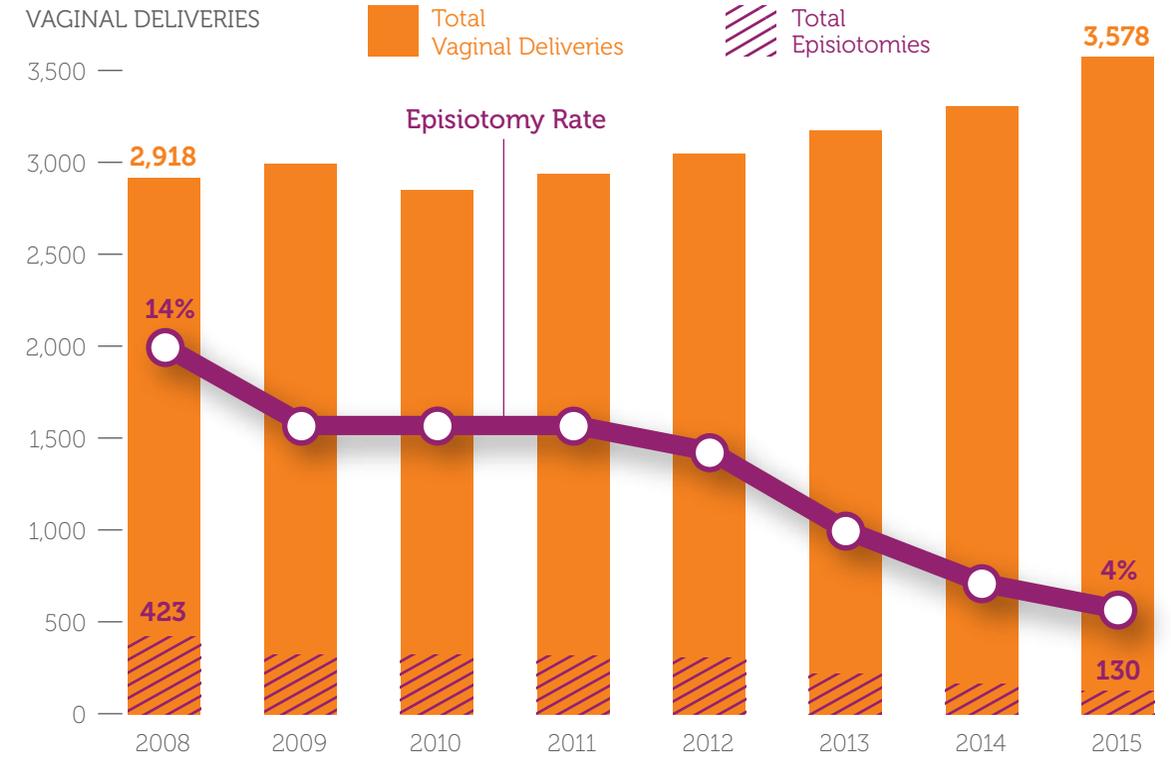


VBAC, vaginal birth after cesarean; TOL, trial of labor.

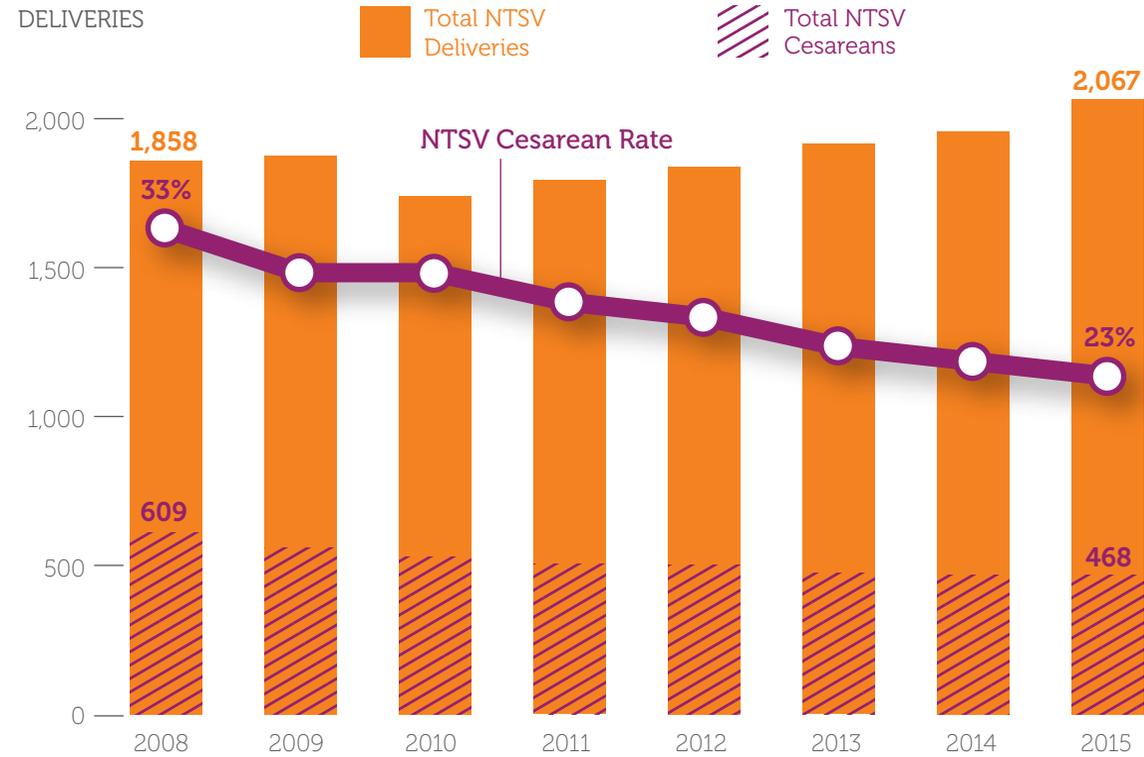
GYN Department Surgical Approach



Episiotomies



Nulliparous Term Singleton Vertex (NTSV) Cesarean Deliveries



Total Cesarean Deliveries





Maternal-Fetal Medicine

CLINICAL CARE

We provide state-of-the-art care for high-risk patients and their families.

Patients from all over New England are referred to BIDMC for high-risk obstetrical care. Maternal-Fetal Medicine faculty offer targeted and specialized ultrasound examinations, prenatal diagnosis, and genetic counseling at BIDMC, as well as other health care facilities throughout Massachusetts. We foster a close and productive relationship with community-based generalists, family practitioners, and midwives, providing outstanding care in a

manner that is also convenient for our patients.

Our maternal transport program supports hospitals throughout New England and has accepted patients from as far away as Bermuda. Last year, 364 women were transported to BIDMC's Labor and Delivery unit for acute care. The majority of cases require Maternal-Fetal Medicine services or Level III neonatal intensive care.



**Dr. Barbara O'Brien counseling
a patient in the Center for Maternal-Fetal Medicine**



**Practice Coordinator Luz Ortiz with
Drs. Barbara O'Brien and Scott Shinker**

Our faculty collaborate with programs such as the Advanced Fetal Care Center at Boston Children's Hospital; this association allows diverse diagnostic and treatment options, including invasive antenatal and peripartum procedures. These clinical advances help fetuses affected by congenital abnormalities while offering hope and guidance to families.

Working with our three genetic counselors and BIDMC's clinical cytogenetics laboratory allows for thorough and timely evaluation of families at risk for genetic disease, birth defects, or intellectual disability. Counseling is also available for individuals or couples experiencing infertility or recurrent pregnancy loss. The program's staff meets with families to discuss

individual concerns, provide risk assessments, and help them decide whether to undergo additional testing.

We provide obstetrical ultrasound and consultation for pregnancies at risk for fetal abnormalities and adverse outcomes. Patients receive state-of-the-art diagnostic care with 2-D, 3-D, and 4-D capabilities. Diagnostic procedures include chorionic villus sampling and amniocentesis, as well as therapeutic procedures such as fetal blood transfusions and shunting. The Center for Maternal-Fetal Medicine at BIDMC also includes an antenatal testing unit for all pregnancies. In the past year, the division consulted with more than 9,300 patients and families at risk for having complicated pregnancies.

Our center of excellence for patients with abnormal placentation, the New England Center for Placental Disorders, opened in 2015 and is codirected by Drs. Steven Ralston and Scott Shinker. Patients across New England are evaluated by the center for possible placental pathology and, if confirmed, a care plan is developed with an interdisciplinary team of medical and surgical subspecialists.

We collaborate with the Division of Hematology to staff the prenatal clinic for patients with blood disorders and have joined forces with the Joslin Diabetes Center to form the Diabetes in Pregnancy Program.

Clinical Care Team

Steven Ralston, MD, MPH
Division Director

Millie Anne Ferrés, MD
Benjamin Hamar, MD
Barbara O'Brien, MD
Karen O'Brien, MD
Scott Shinker, DO
Brett Young, MD

S. Ananth Karumanchi, MD, PhD
Affiliated Faculty, Nephrology

Mary Vadnais, MD, MPH
Clinical Faculty

Deborah Platek, MD
Clinical Faculty

Fellows, residents,
medical students, and
attending physicians benefit from
the comprehensive educational environment

Education

Steven Ralston, MD, MPH
Fellowship Director

Barbara O'Brien, MD
Associate Fellowship Director

Fellows, residents, medical students, and attending physicians benefit from the comprehensive educational environment found in the Division of Maternal-Fetal Medicine and Clinical Genetics. A high-risk obstetrical chief resident and a junior resident work alongside Maternal-Fetal Medicine fellows and attending physicians on all academic and patient care matters.

Frequent clinical exchanges with departments and divisions including Anesthesia, Neonatology, Genetics, Radiology, Nephrology, Endocrinology, and Hematology are all part of the experience. Faculty and fellows staff morning sign-out on Labor and Delivery, and the division sponsors a weekly multidisciplinary perinatal conference to educate residents and fellows on the treatment of patients with challenging obstetrical issues. Teaching in the clinical setting is supplemented by bimonthly resident didactic series presentations. A new sub-internship for medical students completes the department's undergraduate medical education offerings.

The Maternal-Fetal Medicine fellowship, which was recently reaccredited, is a three-year clinical and research training program approved by the American Board of Obstetrics and Gynecology (ABOG). During their training, fellows spend 12 months on clinical rotations, 12 months on research, and 12 months of additional clinical time on electives and subspecialty exploration. A mentoring team guides each fellow according to individual goals and interests. We offer extensive clinical experience in high-risk obstetrics, prenatal genetics, sonography, and ultrasound-guided procedures. Fellows complete all of the ABOG requirements to obtain subspecialty board certification.



In addition to technical skill and clinical acumen, Maternal-Fetal Medicine demands a high degree of empathy so that we can compassionately guide pregnant women to healthy outcomes for themselves and their babies.

—Dr. Steven Ralston



Dr. Michele Hacker (left)
leading a weekly research team meeting

Current Fellows

- Ai-ris Collier, MD
- Bethany Mulla, MD
- Melissa Spiel, DO
- Leanna Sudhof, MD

Program Graduates: Where Are They Now?

<p>2016</p> <p>Scott Shainker, DO Faculty, BIDMC Boston, MA</p>	<p>2015</p> <p>Kedak Baltajian, MD Clinical Faculty, University of Texas Rio Grande Valley, Doctors Hospital at Renaissance Edinburg, TX</p>	<p>2014</p> <p>Melissa March, MD Faculty, Case Western Reserve University Cleveland, OH</p>	<p>2013</p> <p>William Schnettler, MD Director, TriHealth Center for Maternal-Fetal Medicine Cincinnati, OH</p>	<p>2012</p> <p>Michele Silasi, MD Faculty, Yale-New Haven Hospital New Haven, CT</p>	<p>2011</p> <p>Mary Vadnais, MD Clinical Faculty, Harvard Vanguard Medical Associates Boston, MA</p>
---	--	---	---	--	--

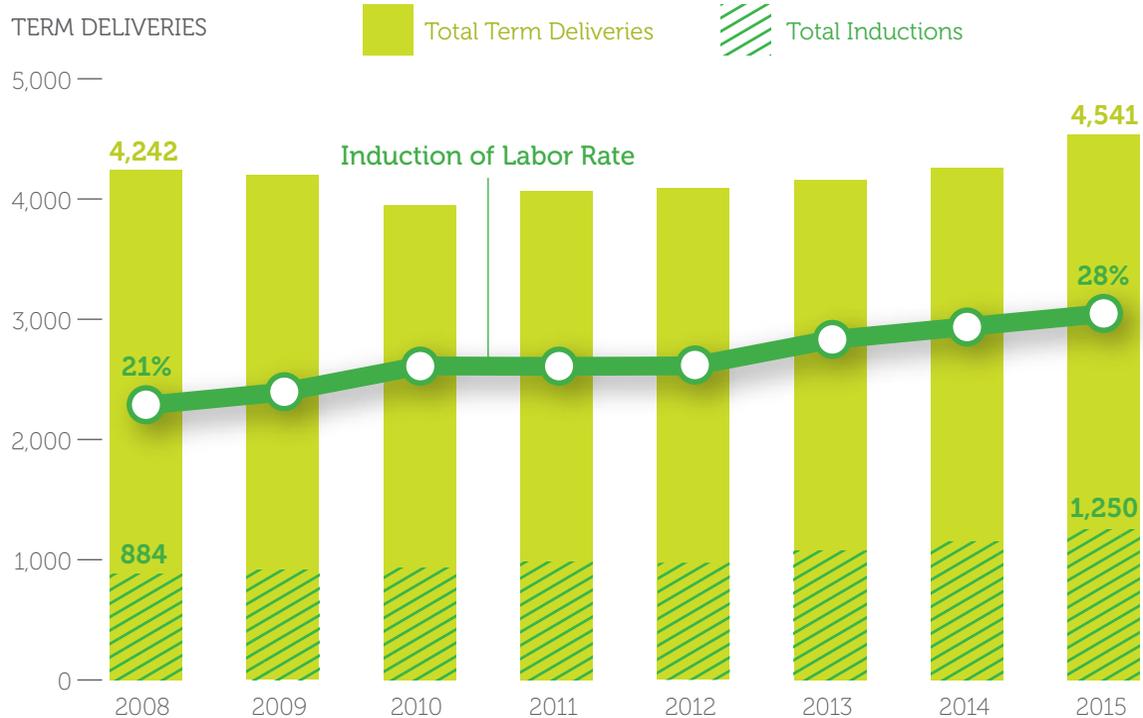
Research

Joint research with BIDMC's Department of Medicine has helped diagnose and treat preeclampsia — a disease that complicates 5% of pregnancies world-wide and is a cause of maternal and fetal mortality. Researchers at BIDMC first found that sFlt-1, a molecule that occurs naturally in the placenta, may cause preeclampsia when it is overabundant. Through this work, BIDMC has filed for patents on methods of diagnosing and treating preeclampsia, and is developing tests that might be able to predict the disease as well.

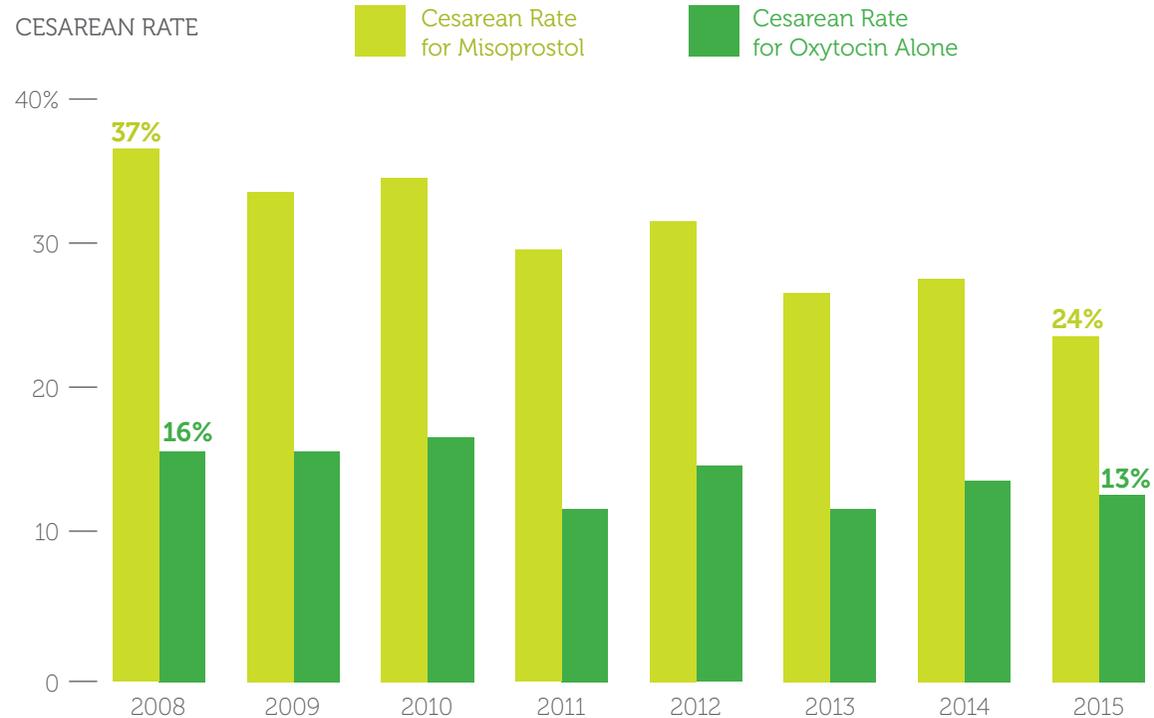
The division has a large, longitudinal database of ultrasounds performed in the Center for Maternal-Fetal Medicine. This has been linked with birth outcomes for research projects such as examining the effect of routine cervical length screening; racial and ethnic disparities in cervical length screening; and the clinical utility of limited fetal anatomy ultrasounds for follow-up of incomplete views.

The Division of Maternal-Fetal Medicine provided more than 36,500 ultrasound examinations last year.

Term Inductions



Mode of Delivery Following Induction



Dr. Katharine Esselen

Gynecologic Oncology



“There’s a sense of innovation and shared vision here that you just don’t find in other academic departments.”

Being part of BIDMC’s Division of Gynecologic Oncology feels a lot like what I imagine it’s like to work at a start-up. There’s a sense of innovation and shared vision here that you just don’t find in other academic departments.

When I started exploring what was happening at BIDMC, just walking into the space felt different. I felt that people shared a devotion to providing great health care and to elevating the quality of care on a global level. That’s why I decided to join the BIDMC faculty — because I wanted

to be part of something that was so much more innovative than traditional academic medicine.

A year in, I can say that we all really do share the same ethos about how we take care of patients, how we approach teaching, and even how we approach our own lives and work. As the mother of two young children, I find it wonderful that I can even feel OK about having a family and prioritizing them, while still being valued for my contributions.

That’s a rare combination in academic medicine, and I’m grateful to have found it. — Dr. Katharine Esselen

Clinical Care

Medical oncologists, radiation oncologists, and pathologists work with the division's physicians on patient-centered, multi-disciplinary teams to provide optimal treatment for patients with cancer of the reproductive tract.

The division conducts clinical outreach programs at Mount Auburn Hospital, Lawrence General Hospital, Anna Jacques Hospital, and Brockton Hospital.

Clinical trials are open to patients through the Dana-Farber/Harvard Cancer Center. We are also a participating institution of the national Gynecologic Oncology Group clinical trials, which shares our mission to promote excellence in the quality and integrity of clinical and basic scientific research in the field of gynecologic malignancies. We work in close collaboration with Dr. Stephen Cannistra, a nationally recognized medical oncologist with particular expertise in ovarian cancer.



Clinical Care Team

Christopher Awtrey, MD
Division Director

John Dalrymple, MD
Katharine Esselen, MD, MBA
Leslie Garrett, MD
Fong Liu, MD, MPH

Stephen Cannistra, MD
Director, Gynecologic Medical Oncology

Jonathan Hecht, MD, PhD
Director, Gynecologic Pathology

THERAPEUTIC OPTIONS

- Open surgery (encompassing radical and ultraradical procedures)
- Minimally invasive surgery
- Robotic surgery
- Radiation
- Chemotherapy
- Biological therapies



Dr. Leslie Garrett



Education

Residents experience the full breadth of oncological care during their rotation in the Division of Gynecologic Oncology. Alongside clerkship students and subinterns, residents discuss each patient's clinical course and treatment options at a weekly Gynecologic Oncology Tumor Board — a multidisciplinary conference attended by division members as well as pathologists, radiologists, medical oncologists, and radiation therapists. A gynecologic oncology journal club and monthly research meetings are also among the sponsored activities. Resident responsibilities include daily rounds, assisting in surgical procedures,

and presenting at Tumor Board. Residents participate in genetic cancer counseling sessions and medical chemotherapy ambulatory management. Clinical education also includes simulated surgical practice and participation in the colposcopy/laser ambulatory clinics. After learning the principles of colposcopy and the place of laser surgery in gynecology, they graduate with certification in laser surgery. Almost every class over the past decade has had one graduate continue training in a Gynecologic Oncology fellowship — a testament to the division's curriculum.

Research

Current projects include a comparison of adnexal surgery outcomes among patients with and without a prior hysterectomy, and an investigation of surgical procedures following risk-reducing bilateral salpingo-oophorectomy. The division operates a research program under the direction of Dr. Stephen Cannistra, director of Gynecologic Medical Oncology. Among

the projects are an investigation into microarrays in predicting response to chemotherapy for patients with ovarian cancer; clinical trials of new therapies; and an exciting study of new biologic therapies for advanced ovarian cancer. Many of the clinical trials are collaborations with the Dana-Farber/Harvard Cancer Center, of which BIDMC is a founding member.

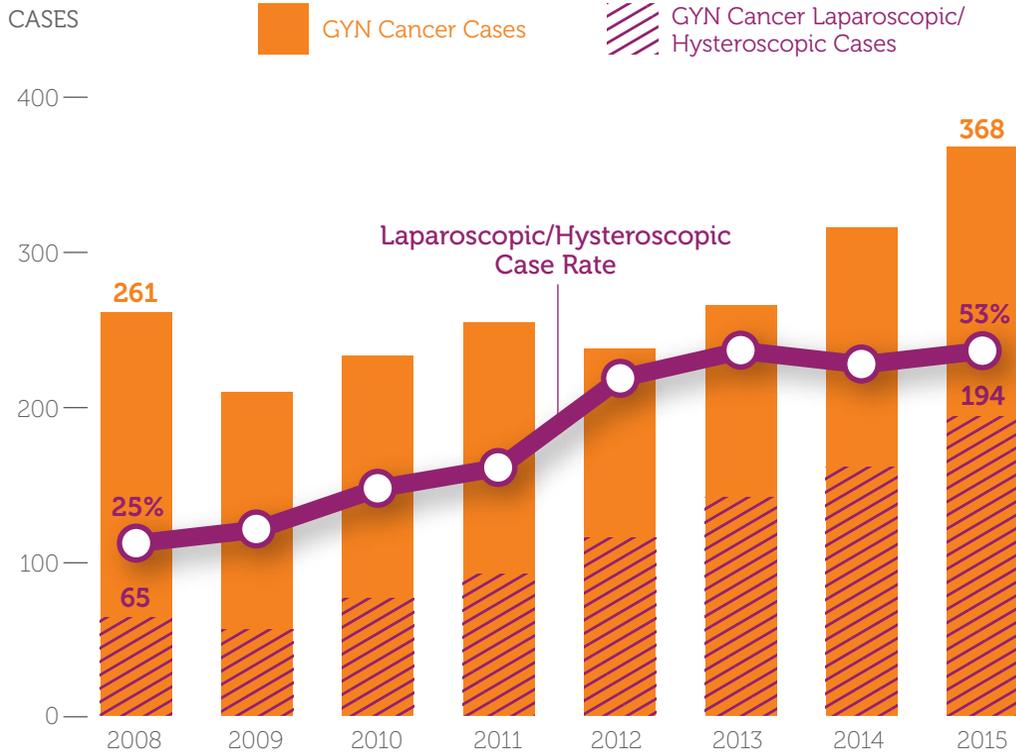


Our goal in the Division of Gynecologic Oncology is to provide compassionate, individualized care of the highest quality to all patients with a suspected or diagnosed gynecologic cancer.

— Dr. Christopher Awtrey



GYN Cancer Surgical Approach





Drs. Laura Dodge and
Maureen Paul

Family Planning

Partnering beyond our walls to improve reproductive care in clinics nationwide.

Hospitals commonly try to minimize adverse patient outcomes. But ambulatory facilities haven't typically had the same attention, even though they have 1.3 billion patient visits annually, compared to 35 million hospital admissions.

In 2014 BIDMC forged a partnership with a large network of ambulatory reproductive health centers in the United States to study patient health outcomes and satisfaction at selected clinics. We're looking at whether teaching teamwork

and communication skills can mitigate risk in outpatient settings, as well as in hospitals. The study provides master training, which participants take back to their clinics. Then we follow up to evaluate clinics' improvement in cultural change, communication, wait times, and patient outcomes.

Early results show improvement across the board. It's thrilling to help clinics make real change to mitigate risk and improve outcomes.

— Dr. Maureen Paul

Clinical Care

The Division of Family Planning offers comprehensive, safe, and confidential reproductive health care services under the supervision of nationally renowned family planning faculty.

Receiving referrals from within the BIDMC network and throughout New England, our clinic offers the full range of contraceptive options and caters to patients with complex medical or psychosocial conditions. We provide abortion procedures in our outpatient clinics or in the operating room. Residents participate in all aspects of BIDMC's family planning service; experience at The Dimock Center exposes residents to the family planning services delivered to heterogeneous populations.



Dr. Siripanth Nippita

Clinical Care Team

Maureen Paul, MD, MPH
Division Director

Siripanth Nippita, MD, MS
Boris Orkin, MD
Phillip Stubblefield, MD



Deciding whether and when to have children is one of the most important decisions that patients and families make in life. We are here to help. — Dr. Maureen Paul

FAMILY PLANNING SERVICES

- Pregnancy-options counseling
- Early medical abortion
- First- and second-trimester surgical abortion
- Comprehensive contraception counseling and provision
- Management of early pregnancy loss



The Division of Family Planning offers a dedicated, 10-week rotation for first- and second-year OBGYN residents as part of the national Kenneth J. Ryan Residency Training Program

Education

The Division of Family Planning offers a dedicated 10-week rotation for first- and second-year OBGYN residents as part of the national Kenneth J. Ryan Residency Training Program. Residents learn to provide all methods of contraception and to address the family planning needs of patients with complex medical conditions. Residents may perform ambulatory procedures including manual vacuum aspiration, dilation and evacuation, medical abortion, and intrauterine device (IUD) and contraceptive implant insertions. In keeping with BIDMC's partnership program, we also offer family medicine residents from

Cambridge Health Alliance a two-week rotation in contraception and first-trimester abortion. The division also sponsors a lecture series on topics that include counseling and up-to-date technologies in fertility regulation. Faculty serve as mentors for resident research projects and invite them to participate in the division's rich research program, which currently focuses on new technologies, IUD simulation models, and patient safety in the ambulatory care setting. Medical students learn the basic techniques of long-acting reversible contraceptive placement in the popular "IUD Workshop" for clerkship students.

Research

The division is involved in an evaluation of team training in a large network of ambulatory health centers in the United States in order to assess quality and safety measures such as adverse outcomes, patient satisfaction, and staff perceptions. The division is also conducting studies to evaluate the use of a mobile, high-fidelity simulator to teach insertion of intrauterine contraception.





Reproductive Endocrinology and Infertility

CLINICAL CARE

Boston IVF is one of the largest assisted reproduction programs in the United States.

Boston IVF is the Department of OBGYN's affiliated infertility treatment center. An experienced team of reproductive endocrinologists staff the full-service, state-of-the-art clinic.

Boston IVF is leading efforts to reduce high-order multiple pregnancy rates, increasing the percentage of patients who have elective single-embryo transfers. The facility has a robust third-party reproduction program that, in addition to offering traditional (fresh) egg donation, now

offers donation from frozen donor eggs. The clinic also has an active gestational carrier program. Boston IVF was one of the first centers in the Northeast to offer egg freezing. Its fertility preservation (oocyte and sperm cryopreservation) program, designed for patients with malignancies or other medical conditions requiring cytotoxic therapy, continues to grow. In addition, elective oocyte cryopreservation is available for patients who wish to preserve their reproductive options



Boston IVF is leading efforts to reduce high-order multiple pregnancy rates



Clinical Care Team

Kim Thornton, MD
Division Director

Michael Alper, MD
Steven Bayer, MD
Brian Berger, MD
Merle Berger, MD
Alice Domar, PhD

Benjamin Lannon, MD
Werner Neuhauser, MD, PhD
Alan Penzias, MD
David Ryley, MD
Rita Sneeringer, MD
Alison Zimon, MD

by electively freezing eggs. The program offers diagnostic and operative endoscopy (laparoscopy/hysteroscopy) for developmental and acquired abnormalities of the reproductive tract, and procedures to correct developmental uterine anomalies, uterine fibroids, and severe endometriosis.

In addition to the main facility in Waltham, Boston IVF has sites in Boston and Quincy, as well as Maine and Rhode Island, with satellite clinics throughout New England. Boston IVF is sensitive to the need for complementary medicine in the treatment of infertility and offers these services through The Domar Center for Complementary Medicine. The center offers

acupuncture, yoga, nutritional counseling, and mind/body techniques designed for relaxation. Patients also have access to a full range of mental health services.



Clinical innovations in the field of reproductive endocrinology and infertility help us provide cutting-edge treatment.

—Dr. Kim Thornton

REPRODUCTIVE ENDOCRINOLOGY AND INFERTILITY SERVICES

- Ovulation induction
- Intrauterine insemination
- In vitro fertilization
- Intracytoplasmic sperm injection
- Blastocyst culture and embryo freezing
- Preimplantation genetic diagnosis and screening
- Fertility preservation (egg freezing)
- Third-party reproduction (including oocyte donation and gestational carrier)



Dr. Alan Penzias



Faculty and
fellows in a team huddle

Education

Alan Penzias, MD
Fellowship Director

In a four-week Reproductive Endocrinology and Infertility (REI) rotation, residents participate in all clinical services at Boston IVF. The residents' experience includes evaluation and management of new patients and those returning for consultation. Residents acquire skills performing ultrasound, sonohysterograms, and hysterosalpingograms and assist in ambulatory surgery and advanced reproductive technology procedures. Residents are responsible for REI patient care at BIDMC. The REI lecture series and

conferences at BIDMC keep residents up to date on the latest REI topics. Boston IVF grand rounds and a journal club supplement these opportunities. Residents and fellows participate in clinical and basic science research projects, and they often attend national meetings.

BIDMC offers a sub-internship to give medical students the opportunity to work directly with attending physicians in the clinical offices, observe procedures in the in vitro fertilization and andrology laboratories, and observe surgical procedures in the outpatient surgical center. Journal club, along with departmental and divisional conferences, allow students to interact with all members of the REI division and the Department of OBGYN. Students can pursue

research in collaboration with residents, fellows, and faculty. In the REI fellowship, participants learn the skills for an academic career. In this three-year ABOG-approved training program, fellows use their

REI treatment skills in a clinical setting. Faculty with expertise in reproductive medicine, surgery, and genetics support fellows in developing a foundation of clinical skill and a more specific area of expertise.

Current Fellows

Lauren Murphy, MD
Nina Resetkova, MD, MBA
Emily Seidler, MD

Program Graduates: Where Are They Now?

2016

Kristi Maas, MD, ME
Physician, Fertility
Specialists Medical Group
San Diego, CA

2015

**Werner Neuhausser,
MD, PhD**
Faculty, BIDMC, Boston IVF,
Harvard Stem Cell Institute
Boston, MA

2014

Kathryn Humm, MD
Faculty, George
Washington University
Washington, DC



Researchers hope to improve IVF outcomes and reduce the burden of multiple pregnancies



Research

The REI division conducts a robust array of both basic science and clinical research projects. Goals in the laboratory at Boston IVF include understanding the fundamental aspects of oocyte maturation and preservation through vitrification. By studying preimplantation genetic diagnosis techniques, researchers hope to develop strategies that will improve IVF outcomes and reduce the burden of multiple pregnancies. Clinical research focuses on outcomes related to assisted reproductive technology. Drs. Michele Hacker and Alan Penzias have led a rigorous analysis of the Boston IVF patient database, which contains

records on 60,000+ in vitro fertilization cycles. Results of the FASTT trial, the largest single-center fertility study funded by the NIH, have been published, and researchers are participating in the NIH-funded FORTT trial to determine the best fertility treatment for women of advanced reproductive age.

The division collaborates with the Harvard Stem Cell Institute and the Department of Stem Cell and Regenerative Biology. Dr. Kevin Eggan's lab focuses on how developmental and environmental cues induce heritable variation in chromatin structure and how variation regulates developmental potency, cell fate, and gene expression. The lab uses nuclear transfer

and other approaches to develop human embryonic and induced pluripotent stem cell lines that carry the genes responsible for neurodegenerative disease. Dr. Eggan's publication in *Science*, "Induced Pluripotent Stem Cells Generated from Patients with ALS Can Be Differentiated into Motor Neurons," was cited by *Time* as the Top Medical Breakthrough of 2008.

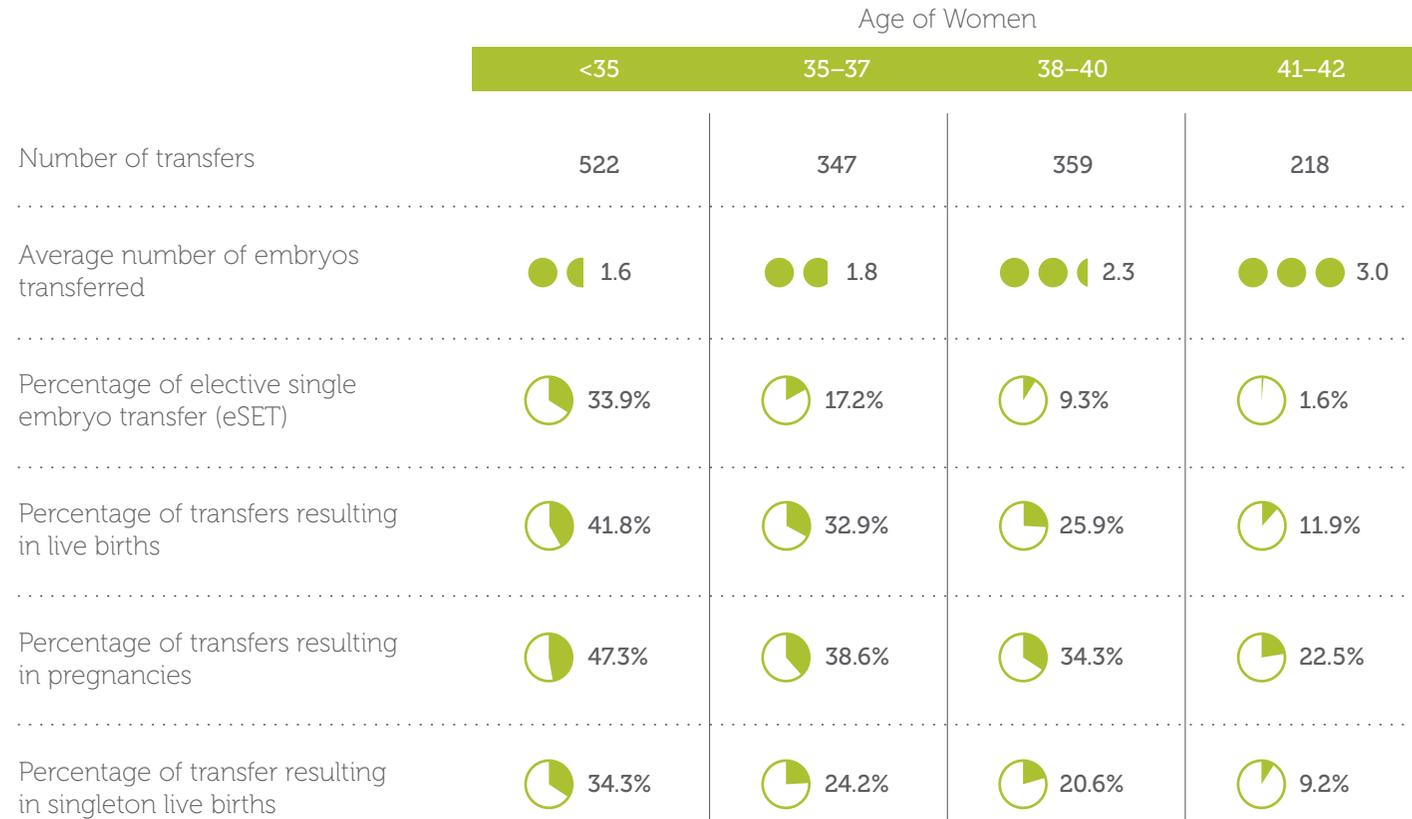
Division researchers bridge basic science with clinical research through the use of a discarded blood sample bank established in early 2008. The samples, paired with clinical outcomes of the patients, provide a powerful asset for establishing biomarkers of reproductive health.

RECENT PROJECTS

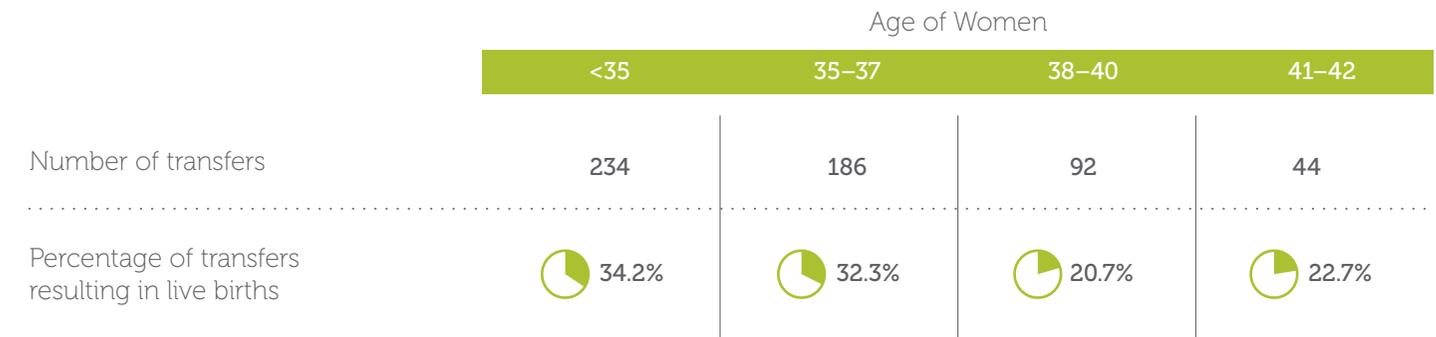
- Estimating the cumulative pregnancy rate in younger women undergoing IVF
- Evaluating the influence of endometrial thickness and progesterone level on outcomes of assisted reproductive technology
- A prospective study of celiac disease among women undergoing infertility treatment

Boston IVF: IVF Success Rate and Live Births

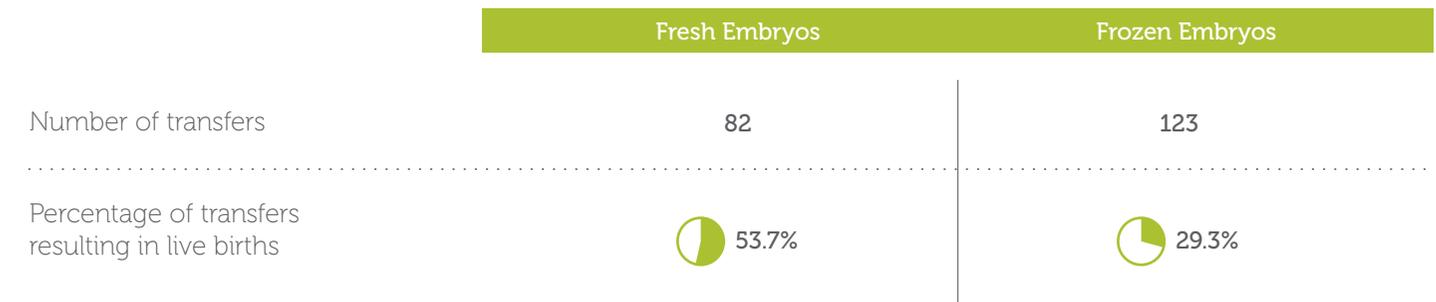
Fresh Embryos from Nondonor Eggs



Thawed Embryos from Nondonor Eggs



Donor Eggs



Centers for Disease Control and Prevention, American Society for Reproductive Medicine, Society for Assisted Reproductive Technology. 2013 Assisted Reproductive Technology Fertility Clinic Success Rates Report. Atlanta: U.S. Department of Health and Human Services; 2013

Kristin Simoneau, RN

Minimally Invasive Gynecologic Surgery

“In April 2015, I experienced BIDMC’s compassionate care first-hand, when my boss became my surgeon.”

I started working at BIDMC 24 years ago as a brand-new bedside nurse. Since then I’ve done case management, more floor care, and now I’ve been the Minimally Invasive Gynecologic Surgery (MIGS) triage nurse since 2013. I honestly can’t imagine working anywhere else, because this hospital so fully values the concept of taking care of patients first.

In April 2015, I experienced this commitment firsthand when I needed my own gynecologic surgery and my boss became my surgeon. Although I had a large abnormality, I had my surgery done minimally invasively and I was able to heal three to four times faster than I would have with a traditional

open incision. In the year following my surgery, being able to talk to patients about my experience has helped me establish a new level of empathy with all my patients.

If you don’t know that what you’re going through is normal, you worry. Much of my job entails being on the phone with patients at home after surgeries, reassuring them that what they’re feeling is normal. I can tell them that I too experienced exactly what they are going through at one week post-op, and they might not believe it now, but they really will be back to work in two weeks. It gives them great relief. — Kristin Simoneau, RN

Clinical Care

The fellowship-trained MIGS surgeons offer the highest level of care, allowing patients from all backgrounds and all over New England to choose from the best surgical options. Our goal is to tailor treatment plans to individual needs while considering the patient's condition and life stage. Despite the high complexity of the cases presented, our laparoscopic procedures have a low rate of conversion to open incision.

Our MIGS surgeons specialize in advanced procedures using the latest techniques and equipment. We provide evidence-based care for patients who require surgical management of benign gynecologic conditions, including both conventional laparoscopic and robotic approaches for procedures.



Clinical Care Team

Hye-Chun Hur, MD, MPH
Division Director

Louise King, MD, JD

This was the most positive experience I have ever had in a surgeon's office. You were the most receptive to my input. I felt heard. You took the time to educate me and ensure I had the knowledge to make the most informed choices so I could be empowered to make the right decision for myself. — Patient

GYNECOLOGIC SURGICAL PROCEDURES

- Hysterectomies
- Removal of ovaries and ovarian cysts
- Surgical treatment of fibroids
- Surgical treatment of endometriosis
- Sterilizations
- Essure removals
- Advanced operative hysteroscopies
- Office hysteroscopies

Exercises involve robotic simulations, suturing with a conventional laparoscopic tower, and a fully equipped virtual operating room

Education

Hye-Chun Hur, MD, MPH
Fellowship Director

Residents in the Division of Minimally Invasive Gynecologic Surgery (MIGS) at BIDMC are routinely exposed to a high volume of minimally invasive surgeries, enabling them to develop the skills of well-trained gynecologists.

Third-year BIDMC residents rotate with fellowship-trained minimally invasive gynecologic surgeons in both the inpatient operating room and the ambulatory surgical settings for comprehensive surgical training. Principles and skills are taught progressively over

their four-year residency to enable surgical treatment of advanced pelvic/abdominal pathology through a laparoscopic, hysteroscopic, or vaginal approach. Our graduates consistently rank in the 90th percentile of procedure volume nationally.

Training is supplemented by rotations at Mount Auburn Hospital and Needham Hospital, as well as by ambulatory hysteroscopy and surgery in the Shapiro Clinical Center and in private offices. In addition to daily inpatient management and teaching rounds with the Gynecology Attending of the Week, all cases include teaching at the bedside and in the operating theater. Weekly staff and resident conferences enhance evidence-based care, and a multidisciplinary

committee meets monthly to review resident cases and create evidence-based surgical plans.

Other opportunities include 24-hour access to a state-of-the-art simulation center that teaches residents minimally invasive surgical techniques in a nonthreatening environment. Exercises include robotic simulations, suturing using a conventional laparoscopic tower, and scenarios in a fully equipped virtual operating room.

Residents are offered a bimonthly minimally invasive gynecologic surgery didactic series along with intensive three-hour workshops twice yearly for hands-on surgical teaching. A structured Fundamentals of Laparoscopic Surgery program includes didactic and skills training in laparoscopic techniques.

FLS certification is offered for all residents in their third year of training. All of our residents have passed the cognitive and skills components of the FLS examination prior to completing OBGYN training.

The MIGS fellowship is a two-year program focused on advanced minimally invasive gynecology. In this AAGL-approved training program, fellows develop their minimally invasive gynecologic skills through three core components: advanced surgical training, evidence-based gynecology for outpatient care, and clinical research. Experts in gynecologic surgical specialties serve as faculty in the fellowship program, and trainees have access to a simulation center that is available at all times.



Drs. Hye-Chun Hur and Louise King
in the operating room before surgery

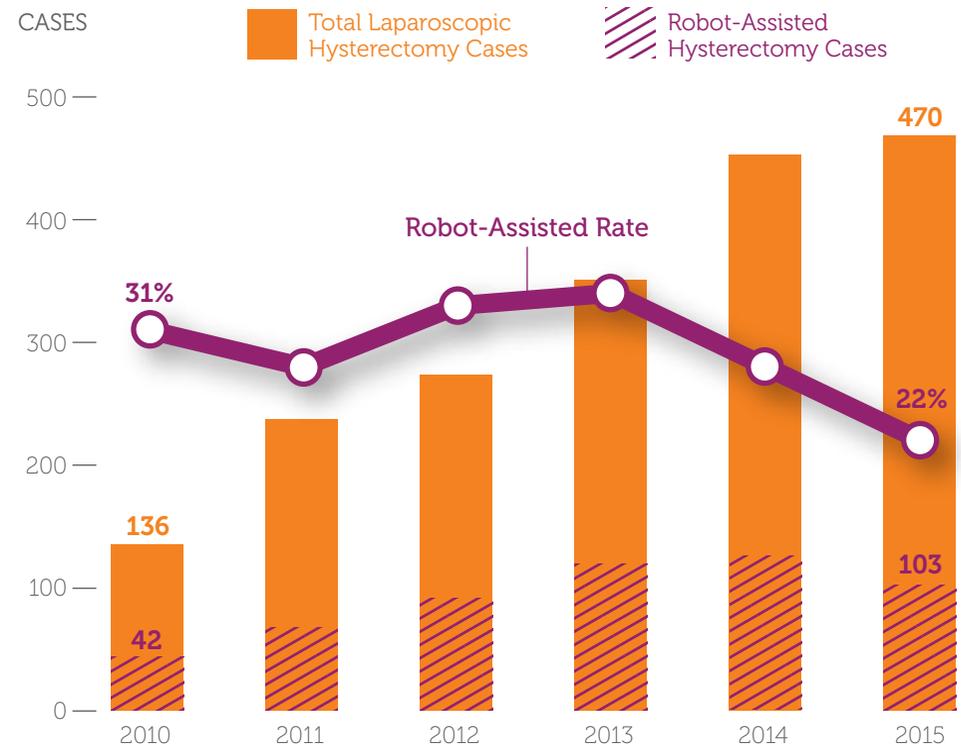
RECENT PROJECTS

- Evaluation of the incidence of venous thromboembolism events after different modes of gynecologic surgery
- Perioperative management of multifibroid uterus with significant fibroid burden
- Improvement of radiologic fibroid reporting with a new structured reporting system

Research

Clinical research is both a strong interest of our faculty and an important focus of the MIGS fellowship. The MIGS division conducts surgical education and outcomes research with primary data collection, and participates in multi-site studies.

GYN Department Laparoscopic and Robotic Hysterectomy



Drs. Roger Lefevre
and Janet Li

Female Pelvic Medicine and Reconstructive Surgery

“As soon as I walked into Dr. Li’s office, I knew she was the person who would finally help me.”

For four years I suffered with a prolapsed uterus, but my gynecologist refused to take my pain seriously. Again and again she kept dissuading me from surgery, so I did nothing.

Early one Sunday morning, a severe UTI led me to an urgent care doctor who kindly referred me to Dr. Li and BIDMC.

As soon as I walked into Dr. Li’s office, I knew she was the person who would finally help me. She was so professional and gracious. She explained my situation in a way that showed she really understood what was happening.

Ultimately, I chose the surgery she recommended, and after a week or so, I came out of the experience feeling wonderful! I’m 70 years old and I work, I play volleyball with my grandchildren, I run, I walk my dog ... I’m in a good place.

Most of my grandchildren were born at BIDMC — two sets of twins and a set of triplets — so maybe I’m biased. But I am so grateful for the understanding, quality of care, and compassion that Dr. Li and her team provided at a time when I wasn’t sure anyone would listen.

— Patient



With two board-certified physicians
and two specialized nurse practitioners,
we offer a wide range of therapeutic options

THERAPEUTIC OPTIONS

- On-site pelvic floor physical therapy
- Tibial neuromodulation
- In-office intravesical onabotulinumtoxinA injections
- Sacral neuromodulation
- Robotic surgery
- Laparoscopy surgery
- Vaginal surgery

Clinical Care

Janet Li, MD
Section Chief

Roger Lefevre, MD

The Female Pelvic Medicine and Reconstructive Surgery (FPMRS) service treats the full spectrum of pelvic floor disorders. In this rapidly evolving field, we are continually balancing safety with innovation, all with the goal of offering the latest proven treatment options. BIDMC's Pelvic Health Program is a designated Center of Excellence for Continence Care by the National Association for Continence. The program

includes a multidisciplinary team of experts from FPMRS and Urology, Colon and Rectal Surgery, Gastroenterology, Radiology, and Rehabilitation Services. They are committed to providing high-quality, patient-centered care for bladder and bowel control problems and related pelvic health disorders.

The FPMRS service takes a holistic approach to pelvic floor disorders, offering state-of-the-art diagnostic services and the most effective, safe, and up-to-date treatments. With two board-certified physicians and two specialized nurse practitioners, we offer a wide range of therapeutic options.



We strive to provide exceptional, personalized, high-quality care. Pelvic floor disorders can often be devastating — affecting a woman's social, physical, and psychological well-being. Our sensitive, team-based approach is designed to help patients navigate through the range of treatment options, empowering them to regain active lifestyles on their own terms.

— Dr. Janet Li

Residents in their second and third years rotate through FPMRS for four weeks, spending time in the urodynamics lab and with our pelvic floor physical therapists

The FPMRS Fellowship trains physicians to provide expert care for pelvic floor dysfunction

Education

Eman Elkadry, MD
Fellowship Director

The FPMRS Section trains medical students, residents, and fellows in urogynecologic procedures and outpatient clinics during their gynecology rotation. BIDMC also offers an elective subinternship rotation to medical students. The FPMRS curriculum includes office evaluation of pelvic floor disorders, in-office diagnostic procedures such as multichannel urodynamic testing and cystourethroscopy, and nonsurgical and surgical

management, with an emphasis on minimally invasive vaginal and robotic approaches. Residents in their second and third years rotate through FPMRS for four weeks, spending time in the urodynamics lab and with our pelvic floor physical therapists. They also attend and present at multidisciplinary pelvic floor conferences and at journal club. Hands-on training in robotic surgery in the dry lab setting and on the robotic simulator is provided.

Residents also obtain urogynecologic surgical experience during core gynecology rotations at each level of postgraduate training. In addition, each third-

year resident has urogynecologic exposure during a 10-week rotation at Mount Auburn Hospital in Cambridge.

BIDMC and Mount Auburn have a joint ACGME-accredited fellowship program in FPMRS. In addition to a broad clinical experience, trainees have the opportunity to research pelvic floor disorders. Our residents and fellows have presented their work at national meetings and been published in major peer-reviewed journals.

The three-year FPMRS fellowship program at Mount Auburn Hospital and BIDMC trains physicians in the treatment of pelvic floor dysfunction. The program covers outpatient urogynecologic assessment and

treatment, office-based procedures, and appropriate surgical candidate selection, with an emphasis on treatment options and patient counseling. The fellowship emphasizes a comprehensive approach to surgical management, including preoperative and postoperative management. Training in both clinical and surgical settings includes laparoscopic, vaginal, and abdominal surgery, as well as robotic surgery. Mentorship and other support is available for research, which is an important and well-integrated portion of the curriculum. Colorectal and urology experience at BIDMC is also an integral part of the training program.



Research

Projects are frequently conducted in collaboration with colleagues at Mount Auburn Hospital. Recent research includes a prospective evaluation of postoperative pain after transobturator midurethral sling, as well as a survey of patient attitudes about transvaginal mesh repair. Three ongoing randomized clinical trials include the effect of botulinum toxin (Botox) on refractory myofascial pelvic pain, the utility of mechanical bowel preparation during pelvic reconstructive surgical procedures, and an evaluation of physical therapy following third- and fourth-degree lacerations.

Current Fellows

Katherine Armstrong, MD
Nabila Noor, MD
Hussein Warda, MD

Program Graduates: Where Are They Now?

2016

Emily Von Bargaen, DO
Faculty, Massachusetts General Hospital
Boston, MA

2015

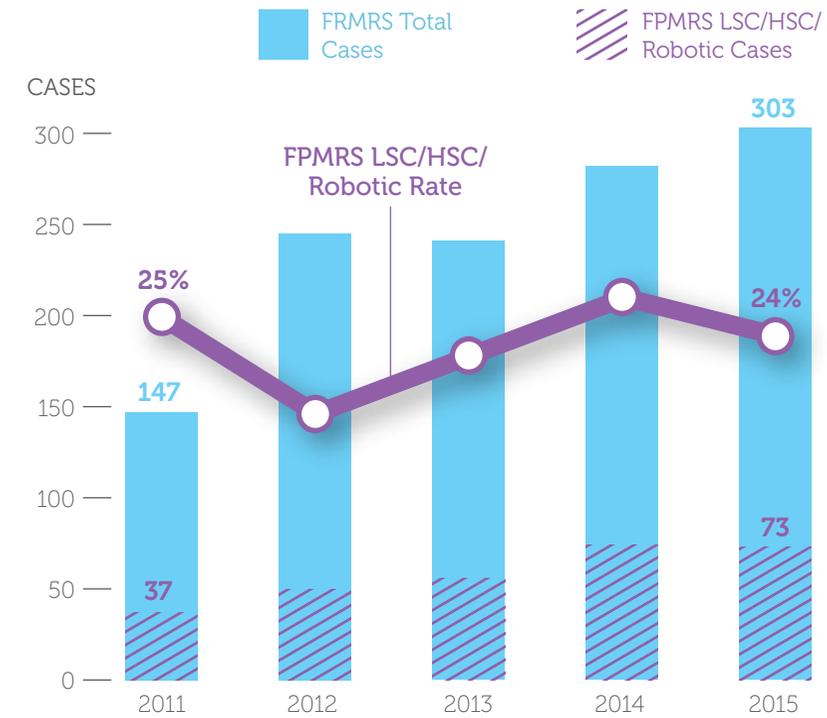
Sybil Dessie, MD
Mid-Atlantic Permanente
Medical Group
Largo, MD

2014

Amos Adelowo, MD, MPH
Faculty, University of Massachusetts
Medical School
Worcester, MA

We are committed to providing high-quality, patient-centered care for bladder and bowel control problems and related pelvic health disorders.

FPMRS Surgical Approach



LSC, laparoscopic; HSC, hysteroscopic.



Division of Urogynecology at Mount Auburn Hospital

Clinical Care

Peter Rosenblatt, MD
Division Director

Anthony DiScuillo, MD
Eman Elkadry, MD

Katherine Hanaway, MD
Lekha Hota, MD

The Division of Urogynecology in the Department of Obstetrics and Gynecology at Mount Auburn Hospital is a community partner of the OBGYN Department at BIDMC. Our urogynecology and reconstructive pelvic surgery center serves all of New England as a referral center for basic and complex evaluation and management of pelvic floor disorders, such as urinary and fecal incontinence, overactive bladder, and pelvic organ prolapse.

DIVISION STAFF

- Four fellowship-trained urogynecologists
- A minimally invasive gynecologic surgeon
- Three fellows in female pelvic medicine and reconstructive surgery
- A nurse practitioner and two nurses who specialize in urodynamic and anorectal testing

The clinical investigation team has a full-time research coordinator. The division's philosophy emphasizes nonsurgical as well as minimally invasive surgical procedures, including robotic and laparoscopic reconstructive surgery.



Neonatology

CLINICAL CARE

The faculty, staff, and trainees take great pride in the care and comfort provided for our NICU patients.

The multidisciplinary NICU team provides a full range of services for neonatal patients and comprehensive support for their families. Our physicians, midlevel providers, nurses, neonatal respiratory therapists, social workers, neonatal dietitians, occupational and physical therapists, pharmacists, and an audiologist are extensively trained in the care of high-risk newborns. Through a tightly integrated system of consultation with the maternal-fetal medicine staff, genetic coun-

selors, and Boston Children's Hospital pediatric subspecialists, the NICU team tracks all maternal admissions likely to result in the delivery of a newborn requiring intensive care and then provides necessary care in a coordinated, multidisciplinary model. The unit provides cutting-edge therapy, including therapeutic hypothermia and inhaled nitric oxide, while making potentially groundbreaking clinical research protocols available to eligible patients.



Dr. DeWayne Pursley
speaking at grand rounds



BIDMC is a clinical and
research site for one of the two largest
neonatology training programs in the United States

Clinical Care

DeWayne Pursley, MD, MPH
Chief

The NICU supports high-risk neonates resulting from BIDMC primary obstetric care and both maternal-fetal and neonatal transfers from a growing network of community physicians and referring hospitals (including our sister institution, BID-Plymouth). The 53-bed NICU program cares for more than 1,200 newborns each year; nearly 900 require admission, while the remainder are evaluated and triaged to the newborn

nursery. Together with attending neonatologists and neonatal-perinatal fellows, nurse practitioners and physician assistants provide around-the-clock coverage in the NICU. They are also responsible for teaching Harvard Medical School students, as well as nurse practitioner and other preprofessional students. Neonatal-perinatal fellows play an important clinical role in the NICU, providing ongoing care along with triage, consultative, and admission support. During monthly rotations, they bring new knowledge and clinical innovations to the department, and support the unit's goal of providing care at the leading edge of medicine.

Education

Dara Brodsky, MD
Fellowship Site Director

BIDMC is one of four clinical and research training sites for the Harvard Neonatal-Perinatal Medicine fellowship program, one of the two largest neonatology training programs in the United States. Fellows rotate monthly through the NICU, caring for newborns and their families and honing their team leadership and patient management skills in the NICU, delivery room, and high-risk antepartum consultation service.

The Department of Neonatology offers an American Academy of Pediatrics–approved training course in neonatal resuscitation to all OBGYN and anesthesia residents. First-year residents receive initial training, while all other residents are offered annual refresher courses. During their core pediatrics rotation at Boston Children's Hospital, clerkship students focus on newborn medicine in a rotation through the BIDMC newborn nursery; fourth-year students are offered a monthlong subinternship in the NICU. During the summer, undergraduate and medical students participate in research projects and are introduced to clinical neonatology.



A neonatology nurse
tends to a newborn in the NICU

Research

The Department of Neonatology research program is aimed at improving the care provided to newborns and their families through epidemiologic, health services, and translational research.

The program has pioneered comparative quality assessment by using a severity normalization tool — the Score for Neonatal Acute Physiology — in order to improve care across institutions. This early work has fostered collaboration among all the NICUs in the state and led to an active, statewide collaboration in quality improvement, established and headed by a BIDMC neonatologist.

AREAS OF RESEARCH

- Improving outcomes of NICU patients, graduates, and families
- Understanding the economic implications of neonatal care
- Improving care delivery
- Understanding the mechanisms of prematurity complications
- Optimizing education in newborn care

COMMON RESEARCH THEMES

Health Services and Quality Improvement

- Improving NICU patient safety through team training

- Applying cost-effectiveness analysis to optimize the use of NICU resources
- Integrating new information technology into the delivery and evaluation of newborn care
- Assessing the effectiveness of perinatal and neonatal health services on the health of very premature infants
- Understanding the emotional burden on families with preterm infants during and after discharge from the NICU

Long-Term Health Outcomes

- Identifying barriers to early intervention enrollment for NICU graduates

Maternal and Perinatal Determinants of Preterm Delivery and Infant Outcomes

- Determining whether dietary factors and epigenetic modifications account for disparities in preterm birth
- Understanding the role of racial and social disparities in infant outcomes

Clinical and Translational Research

- Determining the impact of nutrition on health and disease in the preterm infant
- Examining the role of erythropoietin optimization on brain development
- Studying the effects of probiotics in promoting intestinal health and decreasing necrotizing enterocolitis



Nursing

The OBGYN nursing staff at BIDMC is committed to supporting patients throughout their lives.

The OBGYN nursing staff at BIDMC is committed to supporting patients and families throughout their lives. Our perinatal nurses provide childbirth education and expert care to patients in the Labor and Delivery unit, Newborn Nurseries, High-Risk Antepartum and Postpartum Units, and NICU. New parents receive one-on-one teaching as well as certified lactation support. Our gynecologic nurses provide expert postoperative care, including management of complex gynecologic surgical and oncology patients, while addressing patients' emotional and physical well-being.

Nursing Team

Phyllis West, RN, MSN
Associate Chief Nurse

Jane Smallcomb, RN, MS
Senior Director, Perinatal Units

Elizabeth Kester, RN, MSN
Nursing Director, Labor and Delivery

Meghan Dalton, RN
Nursing Director, Antepartum and Postpartum Units

Kathy Tolland, RN
Nursing Director, Neonatal Intensive Care Unit



Additional
Resources

Social Work Team

Barbara Sarnoff Lee, LICSW

Senior Director, Social Work
and Patient/Family Engagement

Betsy Barnet, LICSW

Nina Douglass, LICSW

Susan Remy, LICSW

Sheleagh Somers-Alsop, LICSW

Gail Wolfsdorf, LICSW

Glady Thomas

Community Resource
Specialist

Social Work

OBGYN social workers advise, educate, and counsel our patients and families through all of life's stages, with specialized expertise in helping with the adjustment to pregnancy and parenting. Social workers also address prenatal and post-partum mood disorders, pregnancy loss, pregnancy termination, bereavement, gynecological cancers, menopause, and substance use. Staff members from the Department of Social Work

function alongside BIDMC patients, families, and staff, and help connect patients with community services.

The Center for Violence Prevention and Recovery provides counseling and advocacy services for those who have been harmed by violence. The program includes Safe Transitions, a domestic violence intervention program; the Rape Crisis Intervention Program; and a community violence intervention program.

Parent Connection Team

Christine Sweeney, LICSW
Program Manager

Marge Day, LICSW

The Parent Connection

The Parent Connection helps families anticipate and adjust to life after birth by providing them with a continuum of personal outreach and support, from before delivery until going home with a new baby. An award-winning and complementary postpartum service since 1999, the Parent Connection exemplifies BIDMC's values of "human first," and patient- and family-centered care.

Expectant families are invited to participate in our monthly Becoming Parents workshop, where they will learn what to expect during the "fourth trimester." By setting realistic expectations and providing the opportunity to discuss them with their partners and in a group, parents are better prepared to navigate

I felt so much better about being a new mom, hearing that everyone had the same worries and things going on with their babies, and everything was perfectly normal!

— New Moms group participant

and support one another through this adjustment.

In our Mentoring Mom service, trained and supervised volunteers call new parents weekly throughout the first 12 weeks after delivery to support families and connect them to appropriate resources. These mentors are often the first to help a new parent or partner recognize symptoms consistent with a postpartum mood disorder and help them obtain fast and appropriate treatment. Mentors also remind new parents that they are not alone.

New Moms groups at several community locations help first-time parents feel less isolated by giving them an opportunity to share their experiences and ask questions. One group meets in the evenings to accommodate the schedules of working mothers.

BabyKnowHow, the program's weekly blog, addresses issues from traveling with a baby to coping with sleep deprivation. It also provides an online forum for support.

Since The Parent Connection began 17 years ago, we have helped more than 10,000 new parents adjust to first-time parenthood. We let our patients know they are not alone in this amazing and sometimes overwhelming journey — even after they leave our postpartum units. — Christine Sweeney



Publications

Abstracts — Oral

Carterson AJ, Dodge LE, Hacker MR, Golen TH, Pratt SD, Uhl L. Antepartum fibrinogen level as a predictor of bleeding complications. 2015. Presented at the 25th Regional Conference of the International Society of Blood Transfusion, London, England.

Gerson KD, Shinker SA, Dannheim K, Neo DT, Zsengeller ZK, Pernicone E, Karumanchi SA, Hacker MR, Hecht J. Placental angiogenic protein expression in patients with abnormal placentation. 2016. Presented at the annual meeting of the New England Perinatal Society, Newport, RI.

Johnson KJ, Zash R, Haviland MJ, Hacker MR, Luckett R, Diseko M, Mayondi G, Shapiro R. Hypertensive disease in pregnancy in Botswana: risk factors and impact on perinatal outcomes. 2016. Presented at the annual meeting of the New England Perinatal Society, Newport, RI.

Kennedy EB, Hacker MR, Ada M, Golen T, Miedema D, Pursley DM, Burris HH. NICU admissions after a policy to reduce elective deliveries before 39 weeks. 2016. Presented at the annual meeting of the New England Perinatal Society, Newport, RI.

Li A, Moore Simas TA, Modest AM, Leung K, Cohen M, Hur HC. Incidence of venous thrombotic events following gynecologic surgery. 2015. Presented at the annual meeting of the AAGL Global Congress, Las Vegas, NV.

Modest AM, Hacker MR, Royce C. Cesarean delivery rates differ between resident and attending physician practices. 2016. Presented at the annual meeting of the New England Perinatal Society, Newport, RI.

Perez-Peralta J, Haviland MJ, Nippita S, Voit S, Hacker MR, Paul M. A randomized controlled trial of low versus high fidelity simulation training on comfort, competence, and skills with intrauterine device insertion. 2015. Presented at the Annual Meeting of the International Federation of Gynecology and Obstetrics, Vancouver, Canada.

Resetskova N, Sakkas D, Bayer S, Penzias A, Alper MM. Home-based ultrasound monitoring for in vitro fertilization is a feasible method of in cycle monitoring. 2016. Presented at the American Society for Reproductive Medicine in Salt Lake City, UT.

Von Bargaen EC, Grimes C, Mishra K, Wang R, Haviland MJ, Carnevale J, Estes A, Truong MD, Hacker MR, Elkadry EA. Prevalence of abnormal uterine pathology at the time of uterine morcellation for benign disease. 2016. Presented at the annual meeting of the Society for Gynecologic Surgeons, Palm Springs, CA.

Abstracts — Poster

Armstrong K, Von Bargaen E, Haviland MJ, Hacker MR, Elkadry E. Patient experience with botulinum toxin type A for refractory myofascial pelvic pain. 2015. Presented at the annual meeting of the International Urogynecological Association, Nice, France.

Dodge LE, Haider S, Hacker MR. Attitudes toward abortion among providers of reproductive health care. 2015. Presented at the North American Forum on Family Planning, Chicago, IL.

Dorion S, Martel J, Royce CS, Jackson C, Sundar E for the Faculty Hour Group. Decreasing the PACU length of stay for ambulatory gynecology patients. 2016. Presented at the Silverman Institute for Health Care Quality and Safety Symposium, Boston, MA.

Dodge LE, Missmer SA, Thornton KL, Hacker MR. Women's alcohol consumption and first cycle in vitro fertilization outcomes. 2015. Presented at the annual meeting of the American Society for Reproductive Medicine, Baltimore, MD.

Dodge LE, Mostofsky E, Liu AL, Hacker MR. Caffeine consumption during pregnancy and miscarriage: a meta-analysis. 2015. Presented at the annual meeting of the Society for Pediatric and Perinatal Epidemiologic Research, Denver, CO.

Dodge LE, Sisti JS, Malizia BA, Penzias AS, Hacker MR. Predictors of poor fertilization following in vitro fertilization (IVF) with or without intracytoplasmic sperm injection (ICSI) among normal responders. 2015. Presented at the annual meeting of the Society for Epidemiologic Research, Denver, CO.

Ellis M, Dorion S, Martel J, Liu A, Mupombwa T, Porter E, Golen T, Royce CS. Introduction of outpatient hysterectomy clinical care pathway. 2016. Presented at the Silverman Institute for Health Care Quality and Safety Symposium, Boston, MA.

Haviland MJ, Ibrahim Y, Hacker MR, Penzias AS, Thornton KL, Sakkas D. Association between progesterone level on the day of hCG administration and live birth weight. 2016. Presented at the annual meeting of the Society for Epidemiologic Research, Miami, FL.

Haviland MJ, Nippita S, Voit S, Perez-Peralta J, Hacker MR, Paul M. A randomized controlled trial of simulator impact on trainees' comfort, competence, and skills with intrauterine device insertion. 2015. Presented at the North American Forum on Family Planning, Chicago, IL.

Haviland MJ, Shainker SA, Hacker MR, Burris HH. Disparities in receipt of cervical length screening. 2015. Presented at the annual meeting of the Society for Epidemiologic Research, Denver, CO.

Haviland MJ, Shainker SA, Hacker MR, Burris HH. Disparities in receipt of cervical length screening. 2015. Presented at the annual meeting of the Society for Pediatric and Perinatal Epidemiologic Research, Denver, CO.

Ibrahim Y, Hacker MR, Haviland MJ, Penzias AS, Thornton KL, Sakkas D. Does higher progesterone on the day of HCG trigger lead to lower birth weight after fresh embryo transfer? 2015. Presented at the annual meeting of the American Society for Reproductive Medicine, Baltimore, MD.

Johnson KJ, Paley F, Modest AM, Hacker MR, Shaughnessy S, Ricciotti HA, Scott J. The impact of depression and psychosocial factors on maternal resilience in women at an urban community health center. 2015. Presented at the Biennial Perinatal Mental Health Conference, Chicago, IL.

Johnson K, Zash R, Haviland MJ, Luckett R, Diseko M, Mayondi G, Shapiro R. Hypertensive disease in pregnancy among women in Botswana: risk factors and impact on perinatal outcomes. 2015. Presented at the annual meeting of the North American Society for the Study of Hypertension in Pregnancy, Chicago, IL.

Mamtani A, Gonzalez JJ, Neo D, Slanetz P, Houlihan MJ, Herold CI, Recht A, Hacker MR, Sharma R. Early-stage breast cancer in the octogenarian: tumor characteristics, treatment choices, and clinical outcomes. 2015. Presented at the annual meeting of the American Society of Breast Surgeons, Dallas, TX.

McKeon B, Royce C, Vicari R, Haviland MJ, Newman L, Ricciotti H. Impact of the Resident-as-Teacher video series in preparing students to be resident teachers. 2015. Presented at the annual Harvard Medical School Medical Education Day, Boston, MA.

McKeon B, Royce C, Vicari R, Haviland MJ, Newman L, Ricciotti H. Impact of the Resident-as-Teacher video series in preparing students to be resident teachers. 2016. Presented at the annual meeting of CREOG and APGO, New Orleans, LA.

Mupombwa T, Modest AM, Bookman L. Teaching the clinical breast exam to third year OBGYN clerkship students evaluating the effectiveness of a systematic approach. 2015. Presented at the annual Harvard Medical School Medical Education Day, Boston, MA.

Resetskova N, Penzias A, Sakkas D. Frozen embryos: how and when are they used? A large fertility center's experience with storage efficiency and time to use. 2015. Presented at the Midwest Reproductive Symposium, Chicago, IL.

Resetskova N, Humm K, Lannon B. In vitro fertilization is cost effective vs minimal stimulation, but MET is a cost neutral alternative for women less than 35 years. 2015. Presented at the annual meeting of the American Society of Reproductive Medicine, Baltimore, MD.

Sakkas D, Dodge LE, Hacker MR, Domar AD. The lack of impact of age on treatment termination in insured IVF patients. 2015. Presented at the annual meeting of the American Society for Reproductive Medicine, Baltimore, MD.

Shainker SA, Modest AM, Young BC, Smith NA, Hacker MR. The effect of amniotic fluid volume on the accuracy of ultrasound-estimated fetal weight. 2016. Presented at the annual meeting of the New England Perinatal Society, Newport, RI.

Won S, Wang R, Von Bargen E, Haviland MJ, Hacker MR, Elkadry EA, Li J, Lefevre R. Predictors of postoperative voiding trial performance in patients undergoing urogynecologic pelvic floor repair without concurrent incontinence procedures. 2015. Presented at the annual meeting of the International Urogynecological Association, Nice, France.

Scientific Paper Presentations

Zakharov Y, Muravyeva M, Dudenkova V, Mukhina I, Meglinski I. Possibilities of holographic techniques in laser scanning microscopy. 2015. Presented at the Novel Biophotonics Techniques and Applications meeting.

Zakharov Y, Muravyeva M, Qiu L, Perelman LT. Features of reconstruction process in holographic scanning microscopy. 2015. Presented at the annual Digital Holography and Three-Dimensional Imaging meeting.

Peer-Reviewed Manuscripts

Adams S, Dessie S, Dodge LE, McKinney JL, Hacker MR, Elkadry EA. Pelvic floor physical therapy as primary treatment of pelvic floor disorders with urinary urgency and frequency-predominant symptoms. *Female Pelvic Medicine and Reconstructive Surgery*, 2015;21(5):252-256.

Boone MD, Massa J, Mueller A, Jinadasa SP, Lee J, Kothari R, Scott DJ, Callahan J, Celi LA, Hacker MR. The organizational structure of an intensive care unit influences treatment of hypotension among critically ill patients: A retrospective cohort study. *Journal of Critical Care*, 2016;33:14-18. PMID:PMC4842333

Chang OH, Modest AM, King LP, Hur HC. Developing an objective structured assessment tool for laparoscopic suturing and intracorporeal knot tying. *Journal of Surgical Education*, 2016 Mar-Apr;73(2):258-263.

Chory MK, Schnettler WT, March M, Hacker MR, Modest AM, Rodriguez D. ACES: Accurate cervical evaluation with sonography. *Journal of Ultrasound in Medicine*, 2016;35(1):25-28.

Dannheim K, Shainker SA, Hecht JL. Hysterectomy for placenta accreta: methods for gross and microscopic pathology examination. *Archives of Gynecology and Obstetrics*, 2016 May;293(5):951-958.

Dessie SG, Adams SR, Modest AM, Hacker MR, Elkadry EA. Bladder symptoms and attitudes in an ethnically diverse population. *Female Pelvic Medicine and Reconstructive Surgery*, 2016;22(1):37-42. PMID:PMC4457280

Dessie SG, Armstrong K, Modest AM, Hacker MR, Hota LS. The effect of vaginal estrogen on pessary use. *International Urogynecology Journal*, 2016;27(9):1423-1429. PMID:PMC5026319

Dessie SG, Hacker MR, Apostolis C, Boundy EO, Modest AM, Jones SL, Rosenblatt PL. The effect of scopolamine patch use on post-operative voiding function after transobturator slings. *Female Pelvic Medicine and Reconstructive Surgery*, 2016;22(3):136-139. PMID:PMC4846570

Dessie SG, Hacker MR, Haviland MJ, Rosenblatt PL. Attitudes toward transvaginal mesh among patients in a urogynecology practice. *International Urogynecology Journal*, 2015;26(6):865-873.

Dodge LE, Hacker MR, Averbach SH, Voit SF, Paul ME. Qualitative assessment of a high-fidelity mobile simulator for intrauterine contraception training in ambulatory reproductive health centers. *Journal of European CME*, 2016, 5:30416.

Dodge LE, Williams PL, Williams MA, Missmer SA, Toth TL, Calafat AM, Hauser R. Paternal urinary concentrations of parabens and other phenols in relation to reproductive outcomes among couples from a fertility clinic. *Environmental Health Perspectives*, 2015;123(7):665-671.

Edmonds JK, Hacker MR, Golen TH, Shah NT. Nurses count: Tracking performance to improve cesarean delivery rates. *Birth*, 2016;43(1):3-5.

Harvey LFB, Averbach S, Hacker MR, Modest AM, Scott J, Ricciotti HA. Self-collection of vaginal swabs for human papillomavirus screening among women in temporary residential programs. *American Journal of Obstetrics and Gynecology*, 2016;214(4):546-547. PMID:PMC4892360

Haviland MJ, Shainker SA, Hacker MR, Burris HH. Racial and ethnic disparities in universal cervical length screening with transvaginal ultrasound. *Journal of Maternal-Fetal and Neonatal Medicine*, 2016;29(24):4078-4081. PMID:PMC5027177

Hofler L, Hacker MR, Dodge LE, Schutzberg R, Ricciotti HA. Comparison of women in department leadership in obstetrics and gynecology with other specialties. *Obstetrics and Gynecology*, 2015;127(3):442-447. PMID:PMC4764498

Humm K, Dodge LE, Wu LH, Penzias AS, Malizia BA, Sakkas D, Hacker MR. In vitro fertilization in women under 35: counseling should differ by age. *Journal of Assisted Reproduction and Genetics*, 2015 Oct;32(10):1449-1457. PMID:PMC4615928

Humphries LA, Chang O, Humm K, Sakkas D, Hacker MR. Influence of race and ethnicity on in vitro fertilization outcomes: systematic review. *American Journal of Obstetrics and Gynecology*, 2016;214(2):212-224.

March MI, Gupta M, Modest AM, Wu L, Hacker MR, Martin CR, Rana S. Maternal risk factors for neonatal necrotizing enterocolitis. *Journal of Maternal-Fetal and Neonatal Medicine*, 2015;28(11):1285-1290.

March MI, Modest AM, Ralston SJ, Hacker MR, Gupta M, Brown FM. The effect of adopting the IADPSG screening guidelines on the risk profile and outcomes of the gestational diabetes population. *Journal of Maternal-Fetal and Neonatal Medicine*, 2016;29(7):1141-1145. PMID:PMC25958989

Nathan LM, Shi Q, Plewniak K, Zhang C, Nsabimana D, Sklar M, Mutimura E, Merkatz IR, Einstein MH, Anastos K. Decentralizing maternity services to increase skilled attendance at birth and antenatal care utilization in rural Rwanda: a prospective cohort study. *Maternal and Child Health Journal*, 2015 Sep;19(9):1949-1955.

Oza SS, Pabby V, Dodge LE, Hacker MR, Fox JH, Moragianni VA, Correia K, Missmer SA, Ibrahim Y, Penzias AS, Burakoff R, Friedman S[†], Cheifetz AS[†]. Factors associated with the success of in vitro fertilization in women with inflammatory bowel disease. *Digestive Diseases and Sciences*, 2016;61(8):2381-2388. PMID:PMC4945450

Oza SS, Pabby V, Dodge LE, Moragianni V, Hacker MR, Fox JH, Correia K, Missmer S, Ibrahim Y, Penzias AS, Burakoff R, Friedman S, Cheifetz AS. In vitro fertilization in women with inflammatory bowel disease is as successful as in women from the general infertility population. *Clinical Gastroenterology and Hepatology*, 2015;13(9):1641-1646. PMID:PMC4546886

Pabby V, Shah Oza S, Dodge LE, Hacker MR, Moragianni V, Correia K, Missmer S, Fox JH, Ibrahim Y, Penzias A, Burakoff R, Cheifetz AS, Friedman S. In vitro fertilization is successful in women with ulcerative colitis and ileal pouch anal anastomosis. *American Journal of Gastroenterology*, 2015;110(6):792-797.

Paydar-Darian N, Pursley DM, Haviland MJ, Mao W, Golen T, and Burris HH. Improvement in perinatal HIV status documentation in a Massachusetts birthing hospital, 2009-2013. *Pediatrics*, 2015;136(1), e234-241.

Rouhani SA, Scott J, Greiner A, Albutt K, Hacker MR, Kuwert P, VanRooyen M, Bartels S. Stigma and parenting children conceived from sexual violence. *Pediatrics*, 2015;136(5):e1195-e1203. PMID:PMC4890150

Scott J, Rouhani S, Greiner A, Albutt K, Kuwert P, Hacker MR, VanRooyen M, Bartels S. Respondent-driven sampling to assess mental health outcomes, stigma, and acceptance among women raising children born from sexual violence-related pregnancies in eastern Democratic Republic of Congo. *BMJ Open*, 2015;5(4):e007057. PMID:PMC4390729

Royce CS, Atkins KM, Mendiola M, Ricciotti H. Teaching patient handoffs to medical students in obstetrics and gynecology: simulation curriculum and assessment tool. *MedEdPORTAL Publications*. 2016;12:10479.

Selter J, Christianson M, Washington C, Resetkova N, Kolp L. Hydronephrosis: A rare presentation of uterine didelphys with obstructed hemivagina and ipsilateral renal agenesis. *Journal of Pediatric and Adolescent Gynecology*, 2015;29(3):e53-55.

Shahul S, Gulati G, Hacker MR, Mahmood F, Shapiro N, Mueller A, Simon BA, Novack V, Talmor D. Detection of myocardial dysfunction in septic shock with preserved ejection fraction: A speckle tracking echocardiography study. *Anesthesia and Analgesia*, 2015;121(6):1547-1554.

Shanker SA, Edlow JA, O'Brien K. Cerebrovascular emergencies in pregnancy. *Best Practice & Research: Clinical Obstetrics and Gynecology*, 2015;29(5):721-731.

Shanker SA, Modest AM, Hacker MR, Ralston SJ. The effect of a universal cervical length screening program on antepartum management and birth outcomes. *Journal of Perinatology Reports*, 2016 Apr;6(2):e206-211.

Shanker SA, Raghuraman N, Modest AM, Schnettler WT, Hacker MR, Ralston, SJ. The utility of midtrimester ultrasound assessment of the subcutaneous space in predicting cesarean wound complications. *The Journal of Maternal-Fetal and Neonatal Medicine*, 2015;28(15):1766-1769. PMID:PMC4745250

Siddiqui NY, Tan ME, Geller EJ, Advincula AP, Galloway ML, Green IC, Hur HC, Pitter MC, Burke EE, Martino MA. Establishing benchmarks for minimum competence with dry lab robotic surgery drills. *Journal of Minimally Invasive Gynecology*, 2016;23(4):633-638.

Vaughan DA, Ruthazer R, Penzias AS, Norwitz ER, Sakkas D. Clustering of monozygotic twinning in IVF. *Journal of Assisted Reproduction and Genetics*, 2016;33(1):19-26.

Wang R, Lefevre R, Hacker MR, Golen TH. Diabetes, glycemic control and urinary incontinence in women. *Female Pelvic Medicine and Reconstructive Surgery*, 2015;21(5):293-297. PMID: PMC4556137

Wang R, Lefevre R. Management of urinary and fecal incontinence in patients with complex regional pain syndrome. *Female Pelvic Medicine and Reconstructive Surgery*, 2015;22(1):e14-16.

Wang R[†], Won S[†], Haviland MJ, Von Bargen E, Hacker MR, Li J, Lefevre R. Voiding trial outcome following pelvic floor repair without incontinence procedures. *International Urogynecology Journal*, 2016;27(8):1215-1220. PMID: PMC4947413

[†]Denotes both authors contributed equally to this work.



BIDMC OBGYN
GIVE

Begin or renew a pledge to support BIDMC's life-changing work.

www.giveobgynbidmc.org • Call 617.667.7330 • BIDMC Office of Development, 330 Brookline Avenue, Boston, MA 02215