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Baystate Medical Practices Annual Report - 2017

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Baystate Medical Practices

 $\frac{\text{ANNUAL REPORT}}{2017}$





Jogether we deliver a higher state of caring."

2017 BMP ANNUAL REPORT

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A MESSAGE FROM THE PRESIDENT



Andrew W. Artenstein, MD

Chief Physician Executive and Chief Academic Officer, Baystate Health President, Baystate Medical Practices Regional Executive Dean, University of Massachusetts Medical School-Baystate Professor of Medicine, University of Massachusetts Medical School-Baystate

At Baystate Medical Practices (BMP), we have a vision to "be the premier provider organization in the region...and be nationally recognized for delivering and evaluating high value health services and innovative medical education across a regionally integrated, strategically aligned system." The year 2017 saw BMP make significant strides towards achieving this vision:

"...to be the premier provider organization in the region ... "

- We are the region's only academic provider group comprising more than 700 physicians and 250 advanced practice clinicians providing care in more than 120 practices across 60 sites throughout western Massachusetts (and a footprint in northern Connecticut).
- We comprise 10 clinical/academic departments and five Service Lines and provide numerous specialty services and programs unique to the region, including level I trauma, pediatric and neonatal intensive care, cardiac surgery, endovascular neurology, among others.
- Our centralized Access and Referral Services "contact" center, a source of significant team efforts over the past 18 months and burgeoning pride, accomplished nearly 2.8 million transactions and booked nearly 1.8 million appointments last year (up 6% and 3%, respectively from FY16 and at the high end of national benchmark volumes for health systems), with a messaging and scheduling accuracy rate of 96%.
- "...recognized for delivering and evaluating high value health services..."
- Several of our physicians were recognized with "5-Star" patient experience ratings, and many of our providers have received training in "Compassionate Connections," the key platform in the BH patient experience initiative.
- We disseminated the "physician advice line" to allow seamless, direct, rapid access for referring providers to BMP specialists—medical and surgical—to enhance customer service and help facilitate patient care.
- We have enrolled more than 30,000 patients in the Patient Portal to allow for convenient, meaningful, two-way communication between patients and their providers.
- BMP providers have been successfully navigating a value-based clinical environment with productive participation in the Next Generation ACO (Medicare), commercial risk contracts and we are about to launch the "BeHealthy" partnership (Medicaid ACO).
- Our research (i.e. "evaluation") enterprise has grown considerably with grant funding continuing to increase (23% higher than last year and more than 50% over the past five years) and scholarly publications on track for 180. Several publications from BMP have contributed to changing clinical practice and improving patient care—our ultimate goal when we disseminate knowledge to the broader medical community.

"...and innovative medical education..."

- BMP providers train nearly 400 residents and fellows and hundreds of students from a variety of health care programs annually.
- We are home to the University of Massachusetts Medical School (UMMS)-Baystate PURCH (Program in Urban and Rural Community Health) track—a novel population health-based curriculum of the only regional campus of UMMS. We matriculated our inaugural class of 22 students and have embarked on recruiting the class of 2022.

"...a regionally integrated, strategically aligned system..."

- Our physicians and advanced practice clinicians collaborate across our geographic service areas to ensure that patients receive the care they need in the most appropriate environment.
- We implemented evidence-based, standardized clinical pathways across BH for three of the most common inpatient conditions: COPD exacerbation, CHF, and diabetic ketoacidosis in order to create a highly reliable, high quality system of care that crosses the care continuum for our patients.
- We adopted the enterprise-wide use of HIPAA-compliant, secure texting to facilitate and enhance clinical communication between providers.

In the pages that follow, you will find a treasure trove of accomplishments of the past year from the many clinical and academic service areas of BMP. You will also read several stories that highlight the good work that occurs on a daily basis in our organization. These achievements are due to a commitment to excellence by BMP providers and team members of our BH compass points of safety, quality, patient experience, value and a main driver—academic innovation.

Andrew W. Artenstein, MD

A MESSAGE FROM THE COO

Betty LaRue, MN, RN

Chief Operating Officer, Baystate Medical Practices Vice President, Baystate Health Ambulatory Operations, Baystate Medical Center



2017 was a terrific year for BMP. There were many accomplishments for which we can all be proud. As we continue to strive toward the Baystate Health and BMP 2020 Visions, here are some highlights:

Safety/Quality:

- Access to Care- We continued to grow Access Services as our Regional Contact Center, and we expanded our scheduling capability to include the primary and specialty practices in our eastern region. In 2017, we increased booked appointments by over 22,000, an increase of 3% from the previous year, while improving call quality, accuracy, and response time, thus meeting or exceeding national best practices. The Clinical/ Access teams continued to strengthen their partnerships and together were focused on increasing timely patient appointments through optimizing provider schedules. Our new shared dashboards kept track of the progress of each service line in this pursuit.
- Quality/Patient Experience- 15 practices from our Community Health Centers and Primary Care Service Line successfully renewed their Patient Centered Medical Home Recognition with the National Committee of Quality Assurance (NCQA). 15 providers were recognized as 5-Star performers in the PRC Patient Experience Survey, achieving the 90th percentile. Quality dashboards were initiated in all Service Lines and ambulatory metrics of importance to the patients and providers were identified and tracked. To complete the full circle of system-wide embedding of quality improvement into our care delivery culture, planning for the launch (in early FY18) of a BMP Quality Council, reporting to the BMP Board, was completed. Primary Care continues to improve on their ambulatory clinical effectiveness scores.
- Value- BMP performed well to 2017 budget expectations and within 0.2% on operating expenses of \$325 million. Service Line profitability through the third quarter of 2017 showed positive margin growth in Heart and Vascular, Neurosciences, Pulmonary, Digestive Health, Orthopedics, and Emergency Medicine. Improved operating performance was seen in the Baystate Children's Hospital, Behavioral Health, and the Community Health Centers. Meaningful Use payments of \$1.8 million were earned for eligible BMP providers. Our BMP Physician Billing Office received top five national ranking from the annual AAMC/ Vizient Survey due to best practice performance in "accounts receivable" days, denials, and net collection management.

Regional Growth and Integration/Collaborative Agreements:

Service-Line expansion and clinical integration continued in 2017. With the help of our Provider Recruitment team we hired 210 providers, 69 of whom filled newly created positions hired to grow our regional practices and programs in various Service Lines. An integrated /coordinated model of care was instituted for Hospital Medicine and Emergency Services providers across all BH hospitals. We hired a new Director of Advanced Practice Providers, who will lead and lend a voice to the important and growing cadre of APs throughout our network. A collaborative agreement was initiated with Springfield Medical Associates, a premier multispecialty practice with sites in Springfield, MA and Enfield, CT.

2017 brought great change and challenge. I continue to be amazed and appreciative for the commitment to quality, collaboration, and hard work found at every level of our enterprise. A heart-felt thank you to our teams at BMP.

2017 BAYSTATE MEDICAL PRACTICES

Board of Directors









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Wilson Mertens, MD

Joseph Schmidt, MD















Timothy Lepore, MD

BH MISSION STATEMENT

To improve the health of the people in our communities every day, with quality and compassion.



Cheryl Geoffrion, MD



Aaron Kugelmass, MD

Sarah Haessler, MD









Kevin Hinchey, MD









4

Quality

Doug Salvador, MD, MPH

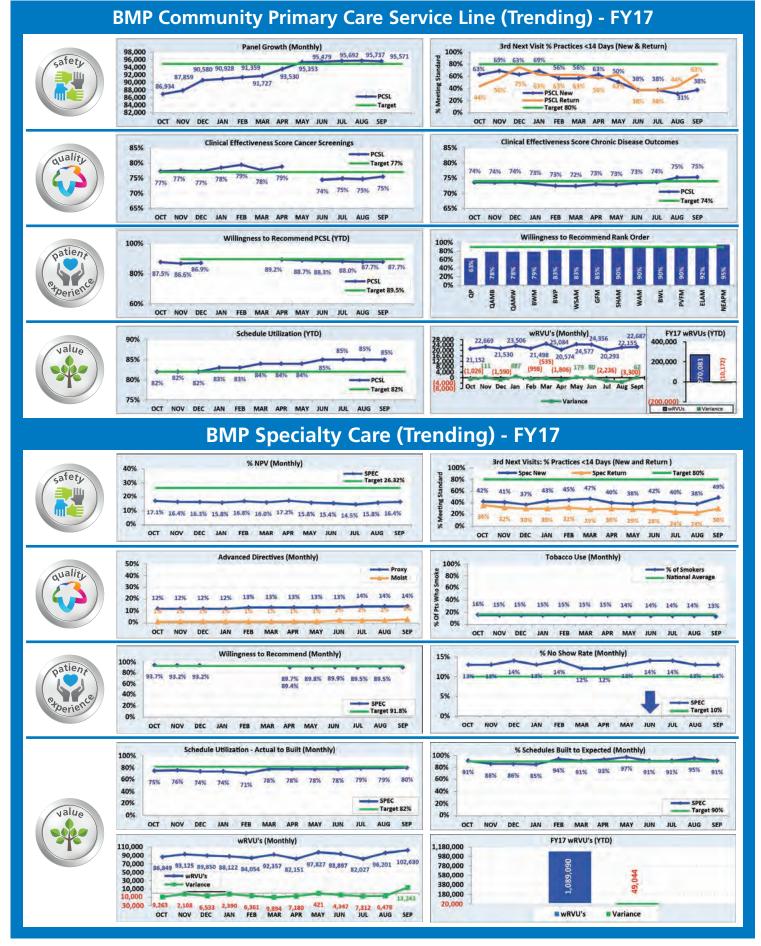
Senior Vice President, Chief Quality Officer, Baystate Health Chief Medical Officer, Baystate Medical Center



In 2017, we convened the inaugural BMP Quality Council. The Council is comprised of practicing primary care and specialty physicians, advanced practice professionals, practice managers and key partners from informatics, risk management, research, healthcare quality, Baycare Health Partners and Health New England. It is led by Diane Russell, Director of Medical Management and Quality and Dr. PJ Helmuth, the new Medical Director of Quality and Population Health for BMP. The Council's primary efforts will be to review overall practice performance, prioritize improvement efforts, and coordinate our efforts to meet external quality expectations while meeting the needs of our patients. The Quality Council has oversight responsibility for ensuring that BMP delivers the highest value health services to our community and to set the standards for quality and patient safety in our academic faculty practice group. As a subcommittee reporting to the BMP Board of Directors, the Quality Council will work with similar groups at the community hospitals and home health to address patient care issues across the continuum. The launch of the BMP Quality Council represents the final 'link in the chain' of entity quality council structure within BH that will allow us to advance our vision for the communities we serve.

2017 BAYSTATE MEDICAL PRACTICES

Performance Dashboards





Baystate Health University of Massachusetts University of

Office of Education UMMS-Baystate

Kevin T. Hinchey, MD, FACP

Chief Education Officer, Baystate Health Senior Associate Dean of Education, University of Massachusetts Medical School-Baystate Associate Professor of Medicine, University of Massachusetts Medical School-Baystate

2017 proved to be a landmark year in health care education at Baystate Health. The first and only regional campus of the University of Massachusetts Medical School (UMMS), UMMS-Baystate, officially opened in August 2017 with the matriculation of the class of 2021—the inaugural class of 22 students into the PURCH (**P**rogram in **U**rban and **R**ural **C**ommunity **H**ealth) track. Their first class that opening day—Doctoring and Clinical Skills—began their journey into medicine. These students are engaged in an innovative curriculum that includes working with an auto mechanic to learn diagnostic reasoning; visiting a jail and homeless shelter to confront their implicit biases; and interviewing community members to practice communicating with different kinds of people. The faculty of UMMS-Baystate has a diverse set of experiences and skill sets. Additionally, we are inclusive of the community we serve: a diverse group of community volunteers meet with the curriculum design team monthly to give input on the curriculum and to act as standardized patients for our students to interview.

Baystate remains a clinical training site for visiting third and fourth year medical students offering over 40 electives to nearly 300 students from 35 medical schools last year. In addition, Baystate provided training to over 700 nursing, 500 allied health, and 100 advanced practitioner students from academic institutions located in Western Massachusetts and New England. Baystate also provides programming to over 125 local high school students through the Baystate/Springfield Educational Partnership (BSEP) career pathways program. The BSEP Intern program, in collaboration with the Workforce Innovation and Opportunity Act (WIOA) Intern program, hired 26 students in temporary positions last summer. To-date, five of those students have transitioned into pier diem employment at Baystate Health.

Baystate Education Research and Scholarship of Teaching (BERST) Academy kicked off its "Base Camp" for the Teacher Track with a two-day workshop in the fall, continuing towards its mission to celebrate the power of education. The primary goals of Base Camp were to inculcate the values of BERST, showcasing the role of motivation and reflection in the learning process, building community, and fostering innovation. The event was highly rated by the 20 interprofessional attendees–representing roles in medicine, nursing, pharmacy, administration, and library services–and has already resulted in translation to practice. Attendees have since travelled across professions and across locations to observe each other's teaching and give feedback.





Office of Research UMMS-Baystate

Peter Friedmann, MD, MPH, DFASAM, FACP

Chief Research Officer, Baystate Health Associate Dean for Research, University of Massachusetts Medical School-Baystate Professor of Medicine, University of Massachusetts Medical School-Baystate

The Office of Research (OoR) has made significant improvements in the operations and financial status of Baystate's research enterprise, while continuing to encourage growth in research and academic innovation. The move in June 2017 to contiguous space at 3601 Main Street facilitated stronger ties among OoR administrators, the Pioneer Valley Life Sciences Institute, and two new research entities: the Institute for Health Care Delivery and Population Science (IHDPS) and the Baystate Clinical Trials Office (CTO). These entities are a direct result of our new academic affiliation with the University of Massachusetts Medical School and a partnership with UMass-Amherst and will facilitate cross-institutional research collaborations to translate advances to the bedside, clinic, and community.

Safety

The OoR has an essential role in ensuring the safety of patients and staff engaged in research. In August 2017, the Baystate Research Facility (BRF) received a perfect USDA Inspection Report. Baystate research was part of the Joint Commission inspection for the first time in more than 10 years, also without citations. The Human Research Protection Program (HRPP) completed over 20 audits for Baystate studies with personalized education for investigators. HRPP also received approval for its Association for the Accreditation of Human Research Protection Programs (AAHRPP) reaccreditation step 1 application. Finally, over 80 surgery, emergency medicine, and obstetrics-gynecology trainees used the resources of the BRF to practice procedural skills that will make ATLS codes safer and more effective.

Quality

Research has an important role in improving quality of care and providing the tools for a learning health system. The new Clinical Trials Office and Epidemiology/Biostatistical Core established an Institutional Scientific Review Committee (ISRC) to ensure that Baystate research remains of the highest scientific quality–rigorous, feasible, fiscally-sound and mission-aligned. The Center for Quality of Care Research metamorphosed in 2017 into the IHDPS–its work generated over 60 peer-reviewed publications and was cited in new practice guidelines on Chronic Obstructive Pulmonary Disease (COPD) produced by the American Thoracic Society. The Baystate Critical Care Research group published a series of practice-changing articles that have improved the care for patients hospitalized with asthma and COPD.

Patient Experience

The OoR made great strides in improving the experience of employees who engage in research. The HRPP reduced the median time from IRB submission-to-approval 20% to 44 days for a full board review, approximating national medians for similar institutions and creating a more productive atmosphere for clinical investigation at Baystate. The Office of Research established the Baystate Health Clinical Trials Office to support budgeting and planning for clinical trials, streamline project submissions, provide clinical data management, administrative and statistical support, and offer educational opportunities to support ethical research practices. The Baystate HRPP delivered eight research education events with credit to more than 250 employees, allowing Baystate research employees to work to the top of their credentials and ability. HRPP also worked with FDA and medical device companies on several compassionate use requests that provided patients with medical devices otherwise unavailable in the U.S. HRPP signed on to SMART IRB, a platform designed to ease challenges with initiating multi-site research. HRPP and Sponsored Programs Administration (SPA) collaborated with Baystate Legal Counsel to establish an Unaffiliated Investigator Agreement to facilitate research collaborations with investigators at UMass and other local institutions. A Research Business Leader training sponsored by the Office of Research was further initiated to provide departmental administrators with the tools and support to manage research staff within their departments.

Value

Research funding has expanded significantly, with Baystate projected to receive \$9.06 million in direct research funding for FY17, surpassing \$7.34 million in FY16, a 23.6% increase. Improvements in processes for selecting studies and monitoring the finances of commercial clinical trials reversed losses of (\$267,950) in FY16 to a gain of \$280,021 for the first three quarters of FY17. Sponsored Programs Administration, Research Finance and Accounting, in collaboration with Treasury and Clinical Research Coordinators, also participated in a Cash Applications Process Improvement Project to improve cash receipt and application.

Academics

Through August 2017, UMMS-Baystate faculty published nearly 120 articles–on track for a total of 180 articles this year. Several received national recognition. The American Society for Reproductive Medicine (ASRM) 2017 Scientific Congress recognized the paper "Effect of Number of Embryos Transferred and Embryo Transfer History on Risk for Preeclampsia," which was recently published in the journal Fertility and Sterility. The Clinical Research Forum presented its Distinguished Clinical Research Achievement Award to the article "Extended-Release Naltrexone to Prevent Opioid Relapse in Criminal Justice Offenders," which appeared in the *New England Journal of Medicine*. Over 75 grants were submitted, and Baystate received several high-profile awards from NIH in 2017 including \$3.1M to study the use of pulmonary rehabilitation by patients with COPD following hospital discharge, and \$1.2M to study epidemiology and service accessibility for persons who use opioids in rural northern New England. Internal grants through the Research Pilot Award Program and the Grant Development Award Program were awarded to four more UMMS-Baystate faculty this year, bringing the total number of awardees to eleven.





Office of Faculty Affairs UMMS-Baystate

Amy S. Gottlieb, MD, FACP

Chief Faculty Development Officer, Baystate Health Associate Dean for Faculty Affairs, University of Massachusetts Medical School-Baystate Professor of Medicine and Obstetrics & Gynecology, University of Massachusetts Medical School-Baystate

This past year has seen the intentional growth of the Office of Faculty Affairs (OFA) beyond building the academic infrastructure, policies, and procedures that underpin our new regional campus. In addition to stewarding the transition, appointment, and promotion of our faculty (463 transitioned to-date), the OFA team has sought to provide meaning and support–programmatic, financial, and personal–for the academic engagement and advancement of our UMMS-Baystate faculty. Several accomplishments of the OFA are noteworthy: 27 individuals achieved academic promotion; we collaborated with the Human Resources team to re-tool BMP's annual provider performance review to include discussion of professional goals for advancement and mentorship needs; and we implemented UMMS-Baystate's Research Faculty Development Program (RFDP) and the Supporting Scholarship among Junior Faculty Program (SSJF) to increase opportunity for our faculty's academic success.

The RFDP is a collaborative venture between UMMS-Baystate's OFA and the Office of Research. A longitudinal curricular experience combining didactic lectures, workshops, small group discussions and a mentored pilot grant proposal, the RFDP will train faculty in effective research design and grant-writing in order to broaden our institution's investigative and external funding capabilities. Additionally, the RFPD will engage mentors from UMMS in Worcester, UMass Amherst, and UMMS-Baystate to continue OFA's efforts to expand research collaborations and professional connections for our Springfield-based faculty.

The SSJF is a new funding opportunity to encourage the academic career development of junior faculty by defraying costs related to presenting scholarly work nationally and regionally. Instructors or Assistant Professors within 10 years of training may apply for the award to cover travel/registration expenses and clinical time relief necessary to attend conferences where their scholarly work is being showcased. Requests for applications will take place twice a year and, in this pilot year, ten awards of up to \$4,000 each will be disbursed.

Finally, this past year the Co-Directors of the Physician Leadership Academy (PLA) revamped the curriculum of this longstanding Baystate program to focus on leadership competencies identified in the business and medical literature and to include individual mentored projects related to organizational operations. We also targeted emerging leaders as participants and were successful in engaging a multidisciplinary group of talented physicians whose mentored projects presented at the conclusion of the Program were nothing short of inspiring.

To support our growth in the realm of faculty development, two new members have joined our team: an Associate Director of Academic Career Development and a Senior Consultant for Physician Leadership Development and Engagement.



Baystate Health University of Massachusetts University of Massachusetts University of Massachusetts University of Massachusetts

Office of Admissions UMMS-Baystate

Heather Z. Sankey, MD, FACOG, CPE, MEd

Interim Chair, Department of Obstetrics & Gynecology, Baystate Health Designated Institutional Official, Baystate Health Assistant Dean of Admissions, University of Massachusetts Medical School-Baystate Professor of Obstetrics & Gynecology, University of Massachusetts Medical School-Baystate

We successfully recruited a group of 22 students for our first PURCH class. The students started officially in August as the Brightwood Learning Community. The first year had a steep learning curve as our local admissions committee and two representatives on the UMMS Admissions Committee worked to create a new pathway within a complex system. Even before completing the process for 2017 matriculation, we reached out through local recruitment fairs and a new virtual recruitment fair hosted by the American Association of Medical Colleges to disseminate information about PURCH. As a result, we are seeing more applicants this year, and those coming for interviews have increased knowledge about the program. Our current PURCH students have been fully engaged in reaching out to the applicants when they are at the UMMS portion of the interview days, and their enthusiasm is infectious.

One of the challenges faced last year was the cost of attending UMMS for out-of-state applicants. Although the goal for the school overall was 37 non-MA students, we fell short of that goal slightly. Nevertheless, the goal for the current recruitment year is 45 from out-of-state.

So far this year, we have seen over 300 applications, which is a 13 to 1 ratio for the 25 slots available (UMMS overall has a 14 to 1 ratio, so we're very similar). Two-thirds of the applicants are from out-ofstate and just over 60 are considered under-represented in medicine, with 17 who are first generation college. Our plan is to interview 130 candidates over 11 interview days. We are still in the process for reviewing applications and anticipate more will be completed by the end of the calendar year.

For our out-of-state applicants, we are looking specifically at those with ties to the area (local or regional), as well as those who have experience with living in rural or urban communities. Our goal is to matriculate students who will eventually serve as a pipeline for western Massachusetts.

	Class of 2021		Class of 2022 (to-date)	
	MA	Non-MA	MA	Non-MA
Completed Applications	147	204	114	205
Invited to Interview	70	51	51	64
Interviewed	65	41	20	16
Admitted	37	20	5	4
Matriculated	16	6		

Proactive Approach to

Treating Rib Fractures



L-R: Rose Ganim, MD, Christian Minshall, MD, Tracy Alfano, RN, Karen Carrens, PA, Andrew Doben, MD

Nearly 10 years in to the largest program of its kind in New England, rib fixation at Baystate Medical Center continues to revolutionize care and enhance quality of life for patients. And its biggest advocate–Andrew Doben, MD, a BMC trauma surgeon, is passionate about making this technique more mainstream.

For years the conventional approach to treating rib fractures was limited to managing pain through medications, time (simply waiting for the fracture to heal) and in severe cases, placing the patient on a ventilator to immobilize and allow ribs to heal without disturbance. Results have been far from ideal, with patients often spending months out of work, living with chronic pain, and developing addictions to pain medications.

"Today we have so much more to offer our patients," says Doben, a pioneer in rib fixation who has performed the procedure more than 200 times. "We have a multi-modality and team based approach that includes those from respiratory care, nursing, anesthesia, and physical therapy."

Rib fixation uses surgically implanted hardware to stabilize rib fractures, producing faster recovery times, decreased mortality rates, and fewer instances of pneumonia or ventilation. It's particularly beneficial for the elderly and patients with multiple rib fractures. The national mortality rate for patients over 65 with three to four rib fractures, for example, is 4.9% while at Baystate Medical Center it is 0.

Performing the procedure involves an interplay between trauma surgery and nursing to identify patients who are the best candidates for rib fixation and to ensure rib fixation protocols are followed. Karen Carrens, physician assistant, Surgical Services says the team carefully monitors inpatients, including strictly controlling medications and use of narcotics, which leads to a better long-term prognosis.

"With rib fixation, patients don't have to live with lifelong deficits from constant pain or respiratory compromise," she says. "We have an all-encompassing team to support the patient from the moment they come in the door." Upon admission patients follow specific respiratory therapy and chest pulmonary therapy every four hours. Once their pain is controlled, the team performs pulmonary function tests which help determine if surgical fixation is a treatment option.

Tracy Alfano, RN, sees patients on an outpatient basis, coordinating pre-surgical and follow-up care. Some ribs are surgically repaired years after the injury, bringing positive resolution to lingering problems.

Patients come from all over the region (and as far away as Wisconsin) to have rib fixation performed at Baystate Medical Center. Doben remains at the forefront, keeping ahead of the research and helping with the development of new devices to use in the procedure.

"It's few and far between who are actually performing rib fixation," says Alfano. "Our team works well together and we take care of our patients."

Dr. Doben's rib fixation team at Baystate benefits from the availability of 3D modeling and printing at the hospital (see story on p. 15). Doben works with Greg Gagnon in Clinical Engineering to create and print models of broken ribs. This can help fine-tune implementation of the plating system used to hold the ribs in place during the procedure.



L-R: Bethany Ferry, LCSW, Orlando Torres, MD, Katie Costa, NP

At High Street Health Center's Adult Medicine practice, providers are ensuring that before they address the myriad of patient needs a very basic but necessary need is filled–food insecurity. The practice is now a member agency of the Food Bank of Western Massachusetts, which allows for providing food staples to families in need.

Nurse practitioner Katie Costa, explained when she joined the practice that she would see patients who sometimes hadn't eaten for days. One person was getting by on just a few French fries from her job at a fast food restaurant. Another grandmother was not eating well herself to stretch her SNAP benefits for grandchildren for whom she was caring.

"This is a small program that fills a critical need," says Costa. "You can't take care of someone's medical needs when they have such crucial food needs. It's the foundation of primary care and wellness."

While the practice had a small "pantry" of shelves with a few rations for patients, joining the Food Bank formalizes the process and provides steadier access to food to meet patient needs. In addition to snacks like granola bars or crackers for patients who need an immediate boost, the staff can provide staples like peanut butter, tuna fish, rice and beans to take home. A new partnership with Atkins Farm in Amherst, MA also helps stock the pantry with fresh fruits like apples and oranges once a week.

Bethany Ferry, a social worker at High Street, says that while people don't always associate obesity with hunger, there is often a connection, as patients can only afford inexpensive processed food and carbohydrates. A poor diet can lead to a host of other medical issues, including obesity, hypertension, diabetes, and irritable bowel syndrome. The pantry makes available to patients some healthier options that while recommended as part of their diet, they are often unable to afford.

"We can ask people to make behavior changes but very often these types of underlying issues that impact them being able to comply," Ferry says. "Even the way patients present with certain symptoms can be affected by something as simple as when they've last eaten."

Being a member agency of the Food Bank also means access to the Food Bank's nutritionists who have come to the practice to offer education along with food samples and recipes. The practice also provides free copies of a cookbook on preparing healthy meals on a small budget. The team hopes that in the future, nutritionists will be able to provide educational sessions with nurses on how to better teach their patients about nutrition – or to even offer drop-in nutrition sessions for patients.

"At our three Baystate Community Health Centers our mission is to diagnose and treat disease," says Orlando Torres, MD, MS, FACP, medical director at High Street. "Katie, Bethany and all of our staff have gone one step further – to impact our communities by addressing food insecurity, locally. It's nearly impossible to treat disease and sustain a productive community without taking the adverse social determinants of health into consideration. Our dream is to create a food pantry with perishable and organic items where patients are referred to and oriented about culturally sensitive food groups that are affordable, nutritious and considered therapeutic for treating their medical condition."



L-R: Chrystal Wittcopp, MD, John O'Reilly, MD, Tracy Renaud, Practice Manager

No-show appointments and overuse of the Emergency Department are continuous challenges in our patient populations. To address these concerns, BMP-General Pediatrics recently made available walk-in hours at their practice with exciting results.

"For some of our patients, life is particularly chaotic," says John O'Reilly, MD, chief of Pediatrics, Baystate Children's Hospital. "Transportation may be in issue. Schedules change very quickly. We've found it's difficult for some people to schedule even a day in advance and make it in for their appointment. This is our attempt to ensure patients get the care they need."

The change grew out of last year's merge between 3300 Main Street Pediatrics and High Street Pediatric practices. While the patient population nearly doubled in size, more providers meant an increased ability to focus on patient access and an opportunity to not just address no-shows but also other scheduling needs, such as increased evening hours for well-child visits.

The team, including Chrystal Wittcopp, MD, Practice Medical Director and Tracy Renaud, Practice Manager worked to launch a plan to best meet patient needs. They surveyed patients to find out if they'd use a walk-in time slot, and if so, when they'd be most likely to come in. They also distributed (and displayed in Baystate's Emergency Department) flyers to make patients aware of the new option and reasons for taking advantage of walk-in hours (i.e., for non-emergency, acute issues).

In May, the practice began offering 8-9:30 a.m. and 3-4:30 p.m. walk-in appointment slots and it's been very successful. Surveys of patients who use the walk-in hours say overwhelmingly that if not for the availability of hours at their practice, they would have gone to the Emergency Department for their care.

"We are working to keep patients connected to their medical home," says Renaud. "While we have them there for the acute issue, we can take advantage of the visit to update their overall care plan." The provider who sees a patient for an ear infection may realize the child needs a flu shot, for example, or is overdue for vaccinations or a well child visit.

While the nature of walk-ins means providers may not always see their specific patients, all admit it's easier to follow their care if the patient is in the practice rather than receiving care elsewhere–or not at all.

"Every month we've gotten more people as the word gets out," says Wittcopp. "If people call and can't get in for an appointment that day we can tell them they can walk in. More and more families are appreciating this service and are satisfied."



L-R: Rose Ganim, MD, Greg Gagnon, Michael Yunes, MD

Sometimes certain areas of the body requiring surgery or other treatment are difficult to see in detail, even with MRI and other imaging technology. Thanks to 3D printing at Baystate Medical Center, physicians can access three dimensional models they can hold in their hands and use as a teaching tool for both patients and staff.

3D printing uses a special printer that converts digital files or models by printing layer upon layer to transform the image into a three-dimensional object. Objects can be printed to scale or enlarged to highlight certain areas, such as tumors or hidden blood vessels, and make them easier to see. Printing normally takes less than 24 hours and provides physicians with a model they can keep and use for both pre-surgical planning and to educate their patients.

Greg Gagnon, a service rep specialist in Clinical Engineering at BMC manages the printing as well as digitally creates models from CT scans and MRIs producing models such as ribs, mandibles, or tumors and blood vessels, etc.

"We can take a 2D image and turn it into something they can hold in their hands before they go into surgery. They can see it, feel it, and help better understand what they're up against," says Gagnon. "This is the tip of the iceberg-the possibilities are endless."

Michael Yunes, MD, assistant chief of Radiation Oncology at BMC, has found 3D printing models to be particularly useful when teaching about tumors located deep in the brain like acoustic neuromas or pituitary tumors that are difficult to fully see with traditional imaging.

"These models help our team better understand why we do certain techniques, for example, why we image a certain way with pituitary tumors, because they are so close to the optic nerve," he says. "And for patients, visualizing the intricate anatomy of the brain is difficult for them to conceptualize. There's nothing like putting something in their hands."

Rose Ganim, MD, thoracic surgeon, first approached Gagnon about creating a lung tumor model to help her better see the relationship between veins and arteries near the tumor. She also used the model to help her patient better understand why her surgery was particularly challenging.

"Thoracic surgery is a very image-based specialty but our brains are designed to best understand what is tangible rather than abstract," she says. "For me it's magical to have models like these that bring everything to life. It's a game-changer."

3D printing is also being used to create plastic items that either can't be replaced or are only available at great expense. For example, a belt loop used on patients when being placed for an MRI suffers from frequent breakage and a replacement cost of \$500. Through 3D printing the cost is less than \$3, saving the health system thousands of dollars.

2017 BAYSTATE MEDICAL PRACTICES **Department Highlights**

DEPARTMENT OF Anesthesiology

SAFETY

Our department's physicians and nurse anesthetists are well known for implementation of safety checklists and focus on patient safety. We are leaders in the management of patients with complex airway pathology and resuscitation from trauma and shock in the operating rooms. We oversee the intubation training of emergency medical technicians and paramedic students. Additionally, our specialized and highly trained anesthesiologists safeguard patients undergoing all surgeries including pediatric, obstetric, orthopedic, neurosurgical, cardiovascular, and ambulatory procedures. Virtually 100% of all anesthesia care at Baystate is electronically recorded. These

computerized registers allow a review of any unexpected or adverse event. We use these data to improve safety processes and clinical outcomes. Our department continues to lead perioperative culture-of-safety initiatives and serve on local, regional and national committees.

QUALITY

We ensure high quality care by incorporating evidenced-based policies and standardized procedures in all Baystate hospitals. Each specialty subdivision periodically reviews the quality of care, implements tests of change, and monitors results. The Department of Anesthesiology contributed to the successful 2017 Joint Commission inspection and the reaccreditation of the bariatric surgery program. We have been studying the causes of rapid response team activation in surgical subgroups. Our obstetric anesthesia team has a new initiative to improve the quality of OB consultation service. A new handover tool has been created for the Heart and Vascular operating rooms increasing the accuracy of information transfer. By limiting variability and enhancing standardization of processes, the department delivers exceptional patient care.

PATIENT EXPERIENCE

Anesthesiologists, certified registered nurse anesthetists, and residents are always on call for trauma, surgical emergencies and hospital pain management, treating patients with compassion and kindness with an inclusive spirit. We are involved in tens of thousands of operative procedures each year. Many patients are cared for outside the typical operating room setting, including the endoscopy suites, in vitro fertilization unit, interventional radiology and the cancer center. During 2017, we developed an acute pain management program to support the comfort and treatment of post-partum patients with opioid use disorder. Our pre-admission evaluation clinic helps ensure the best surgical outcomes and minimizes procedure cancellation. In 2017, we collaborated with the Departments of Medicine and Neurology to train advanced practice providers in diagnostic lumbar punctures. Our providers also ensure relief from pain as the leaders of the Baystate Medical Center Acute Pain Service. All Baystate inpatients will find a skilled and empathetic anesthesia team member ready to meet their clinical needs with compassion and expertise.

VALUE

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The Department of Anesthesiology collaborates with the Department of Pharmacy improving efficiencies, creating value and managing challenging shortages of pharmaceuticals. Springfield Anesthesia Service provides care to over 65,000 patients each year. Our physicians, certified registered nurse anesthetists, anesthesia residents and nurse practitioners co-develop clinical care pathways and rule-based alerts to optimize utilization management and meet or exceed regulatory requirements. We continue to leverage our roles on multiple hospital committees including Pharmacy and Therapeutics, Laboratory Utilization Management, Credentials, Medical Staff Executive and the Transfusion Committee to deliver more value to our patients and to Baystate Health.

ACADEMIC INNOVATION

Our residents graduate and progress into top fellowship programs. The 2017 anesthesia resident cohort scored in the top ten percent in the advanced anesthesiology national board examination. We successfully matched eight anesthesiology residents and three interventional pain management fellows in 2017. Department members contribute to the education of nurse practitioners, physician assistants, residents and students in emergency medicine, pediatrics and critical care. We have developed innovative course material for the Elms College Doctor of Nursing Practice graduate program and the Bay Path College Physician Assistant program. During 2017, we established new academic research projects approved by the Baystate IRB. Investigations include studying the prevalence and etiologies of postoperative stroke in surgical patients, factors which lead to postoperative falls, investigations into regional anesthesia, and the costs associated with postoperative nausea at Baystate Medical Center.

Michael Bailin, MD Chair, Department of

Anesthesiology



Emergency Medicine

SAFETY

- Implemented assessment of suicidal patients using an evidence-based tool to determine level of risk. One-on-one monitoring of high-risk patients has been instituted in the ED.
- Staff developed an anxiety protocol for behavioral health patients in partnership with Psychiatry, Emergency Medicine providers and nursing.
- Instituted workplace violence education for staff to mitigate such events. This included de-escalation techniques for dealing with difficult patients/families.
- Partnered with Emergency Medical Service and law enforcement community in disaster preparedness, active shooter and multi-casualty drills.
- Established an Emergency Medical Services division with a Medical Director for Region 1 (all of western MA) and two EMS coordinators. The division provides medical direction, education and performance improvement for over 30 ambulance services. A Baystate Health helicopter service has been established in conjunction with Air Methods and Hartford Hospital LifeStar.

QUALITY

- Significant improvement in sepsis care for the three-hour bundle from 0% to 80%.
- The door-to-thrombolytic time is less than 60 minutes.
- A physician champion for performance improvement has been appointed.
- Protocols have been implemented for the diagnosis of spinal epidural abscess and use of CT in head-injured pediatric patients based on PECARN criteria.
- BFMC appointed one of our Emergency Department providers to co-chair the Baystate Improvement Council.
- Bedside ultrasound education was conducted for emergency physicians at Baystate Mary Lane Outpatient Center (ongoing), Baystate Wing (ongoing), and Baystate Noble (completed). Emergency Medicine nurses were taught to place IVs under ultrasound guidance for patients with difficult access.

PATIENT EXPERIENCE

- The department developed and completed two research studies that address the patient's experience with their care. The studies are being presented at national conferences.
- We piloted a pediatric ED in partnership with the Pharmacy to provide prescriptions upon discharge.
- Emergency providers are attending and facilitating Compassionate Connections.
- BFMC ED providers were recently recognized at the state level as a pioneer for their collaboration with the dental clinic located adjacent to the ED. The providers arrange for patients to be seen in the dental clinic.

VALUE

- Split-Flow care implemented in the ED to reduce walk outs. Door-to-provider time will be significantly reduced. Reducing patient wait times will markedly improve value to ED patients, their families and the community
- A partnership between the Pediatric ED and Springfield Public Schools has decreased referrals to the ED for Behavioral Health Network evaluations by 50%.
- Health system-wide the six BH EDs cared for over 200,000 patients. Provided care to over 120,000 patients in the BMC ED making it the busiest ED in the state.

ACADEMIC INNOVATION

- EM faculty were principal investigators on three federal grants (two R03s and one R21) and published 13 peer-reviewed articles. Eight grant applications were submitted to the NIH, AHRQ, AHA, and foundations.
- EM faculty assumed the positions of medical director for Pediatric Advanced Life Support, Advanced Cardiac Life Support and Basic Life Support Courses for BH.
- A total of seven fellows joined us for fellowship training in emergency ultrasound, wilderness medicine, research, administration and pediatric emergency medicine.
- Sponsored by the Emergency Nurses Association, we now teach Emergency Nurse Pediatric and Trauma Nurse Core courses.
- A resident and a faculty member won their divisions in the national case presentation competition and are in the finals.



Niels Rathlev, MD Chair, Department of Emergency Medicine

Hospital Medicine

Baystate's Hospital Medicine team consists of 95 physicians and 15 advanced practitioners. In FY17 we discharged a total of 36,876 patients (inpatient and observation cases) and had 191,014 patient encounters. Our volume at BMC grew by 10%. We are the first team/service line to become fully integrated in all clinical operations and centralized in administrative functions. The majority of the hospitalist providers are cross-credentialed at other sites which allowed us to develop a flex staffing model and float providers based on volume. Changes in the program include implementing geographic admitting, cross credentialing, and rotating providers to different sites. We were able to keep the providers engaged throughout the change process. They understood the rationale behind the changes and that it was necessary to provide high quality care in the most cost effective fashion. We had strong participation in the Employee Engagement survey and achieved an overall score of 4.40 (91st percentile - Tier 1).

SAFETY

This past year we concentrated on two major projects: initiation of care within two hours and medication safety. As part of this, we implemented a geographic admitting process by which dayshift rounding hospitalists will start the day with a lower number of patients and admit the patients coming to the corresponding units. This reduced the number of hand-offs and time to initiate care. Preliminary results showed we decreased time to initiate care by one hour. We also focused on reducing medication errors by hiring four pharmacy technicians. As of today they cover 60% of our admissions. In the first three months they saved 650 hours of RN and MD time.

QUALITY

Designed and implemented three clinical care pathways (CHF, COPD & DKA) in CIS at BMC, BFMC and BWH.

All community hospitalists and the majority of BMC hospitalists attended the FCCS course and became certified. Now one to two hospitalists from our community hospitals are rotating every month through the BMC Intercare Unit. This will help us minimize transfers and keep care local.

Initiated quarterly morbidity and mortality reviews by hospitalists, with outcomes of targeted educational interventions, as well as increasing provider education about diagnostic errors and advocating for change on a system level to improve patient safety.

PATIENT EXPERIENCE

All new hires in FY17 received education in the AIDET (Acknowledge, Introduce, Duration, Explanation, Thank You) Communication Framework and were observed by peers who provided feedback. New hires also received primary palliative care lectures, resources and simulation lab training in goals of care and end of life discussions. All hospitalists are also scheduled to complete a Compassionate Connections workshop, with some hospitalists participating as facilitators.

VALUE

Implemented robust clinical documentation program which helped improve our CMI by 3.5%. By managing length of stay and improving CMI, our direct margin per case improved from \$3,836 in 2016 to \$4,453 in 2017 (favorable by \$617 per case) which translates into several million dollars to the health system.

ACADEMIC INNOVATION

The Hospital Medicine program created an Advanced Practitioner Residency Program for new nurse practitioner and physician assistant graduates. Three physicians completed the residency and were hired within the division. Didactic lectures were largely provided by academic hospitalists, and six nonacademic hospitalists underwent faculty development for teaching adult learners and provided the clinical precepting for the residents. Five hospitalists throughout Baystate Health participated in the first class offered for a Hospital Medicine Fellowship. The two-year curriculum was developed by one of the academic hospitalists and is based on the Society of Hospital Medicine core competencies. There are three tracks including leadership, medical education, and quality improvement/leadership.

Two hospitalists are faculty members of BERST Academy working with UMMS-Baystate. Three hospitalists completed the leadership academy at the Society of Hospital Medicine. Two additional hospitalists received the distinction of being named a Fellow in Hospital Medicine from the Society of Hospital Medicine and one received a fellowship from the American College of Physicians. Hospital Medicine increased its scholarly output and was involved with eleven publications as well as numerous poster presentations. Hospitalists gave ten national presentations, including at the American Lung Association, the American Academy of Hospice and Palliative Care, the Association of Program Directors in Internal Medicine and the Alliance for Academic Internal Medicine. An academic hospitalist was named the Program Director for the Internal Medicine Residency this year. Two academic hospitalists won recognition for teaching; one was recognized as "teacher of the year" for the Internal Medicine Residency; and one received the Aisner Award from Tufts for Excellence in Teaching Physical Diagnosis.



Michael Vemula, MD Vice President, Baystate Health Adult Hospital Medicine

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Medicine

The Department of Medicine thanks Dr. Kevin Hinchey for his leadership as the interim chair of Medicine for 2017 as well as other members of the department, who helped maintain excellent clinical, educational, and research performance.

SAFETY

The Pulmonary/Critical Care and Hospitalist Divisions collaborated on training all hospitalists in the Fundamentals of Critical Care Support. The Baystate Medical Center ICU has seen increases in annual admissions. (Based on Cerner APACHE data, mortality and ICU length of stay are lower at Baystate for similar patients to those cared at similar institutions to Baystate Medical Center.) The

antimicrobial stewardship program has resulted in 25% fewer days of antimicrobials used in the Intensive Care Unit, contributing to the reduction in C. difficile. A labor and delivery diabetic ketoacidosis protocol was implemented at Baystate Medical Center. All medical intercare beds were located in one geographic location to allow selected hospitalists with critical care expertise to manage these patients. This move increased collaboration.

QUALITY

Our Gastroenterology Division has joined GiQuic (GI quality consortium) to benchmark colonoscopy quality indicators. The hospitalist program was integrated across Baystate Health, facilitating the standardization of evidence-based protocols and care. A direct inpatient admit process for the hospitalist program was developed to reduce the number of patient handoffs. The Endocrinology Division piloted a system-wide diabetes program with Health New England and community health center patients. The certified diabetes educator program was reaccredited by the American Diabetes Association. The Infectious Disease Division, in conjunction with the microbiology lab, implemented rapid diagnostic testing, resulting in fewer days of antibiotic therapy.

PATIENT EXPERIENCE

The support group for caregivers of dementia patients at our Brightwood clinic has been officially recognized by the Alzheimer's Association as a resource. Our community health center patients are "Willing to Recommend" the practice "Yes, Definitely," 85% of the time. Diabetic pump technology was successfully initiated at the community health centers in 20 patients. To help manage these patients, shared medical visits were offered monthly. Gastroenterology expanded their open access screening colonoscopy program to all BMP practices. A new Gastroenterology suite was opened at Baystate Franklin Medical Center. ICU physicians and nurse leaders, with support from a federally funded PCORI project, developed a curriculum to optimize communication with patients and families.

VALUE

The hospitalist program's clinical volume grew 10% in addition to increasing case mix index (CMI) by 4%. The increase in CMI added approximately \$5 million of revenue to Baystate Medical Center. The community health centers exceeded their monthly patient panel growth by 7%. The ACE Pilot Program lowered cost and decreased length of stay while increasing volume from 423 patients in FY2016 to a projected volume of 800 in FY2017. Over 2,000 patients have been scanned in the lung cancer screening program. This screening has led to 20 patients being identified with early stage lung cancer and 19 having curative procedures. Brightwood's outpatient-based opioid treatment program continues to be a model for integrating treatment of substance use disorders within a primary care practice having successfully maintained treatment for over 200 patients over the past seven years.

ACADEMIC INNOVATION

A new Pulmonary/Critical Care Fellowship program was approved by the ACGME. The Infectious Disease Fellowship was reviewed by the ACGME Residency Review Committee and received continuing accreditation. The Gastroenterology Fellowship achieved its full complement of ACGME approved positions. The Endocrinology Division initiated telehealth visits at Baystate Wing and Baystate Medical Practices–Greenfield Family Medicine. The Infectious Disease Division initiated telehealth consultations at Baystate Franklin Medical Center. Members of the Department of Medicine continue to obtain new-and maintain current funding from a variety of agencies including the NIH, HRSA, and the Massachusetts Department of Public Health. Members of the Department were successful in scholarly activity, highlighted by numerous abstracts and publications. Publications were in a variety of journals including high-impact journals, such as the Journal of the American Medical Association. Members of the Department, with support from the Research Office, continue to promote resident research.

CHALLENGES

One key challenge for FY2018 is to continue to develop the best regional programs to deliver medical subspecialty care locally. Another challenge is to develop the best practices to integrate advanced practice providers to improve access to care in different medical specialties. One of the major challenges is the community health centers working with their medical specialty partners to deliver a new paradigm of cost-effective, high-value, patient-centered care for patients in the new Medicaid Accountable Care Organization.





Obstetrics & Gynecology

This was a year of change in the Department of Ob/Gyn at Baystate Health: the chair of nine years departed; a new program director of the residency and a new medical director at Pioneer Women's in Greenfield were appointed; new Division Chiefs of Midwifery and Urogynecology were recruited; and new faculty members were welcomed in Urogynecology, Family Planning, and General Ob/Gyn.

SAFETY

BH Obstetrics and Gynecology was recognized with a President's Excellence Award for our work on labor and delivery, "Raising the Bar in Perinatal Safety," showing improved outcomes.

The EMPOWER program (Empowering Mothers for Positive Outcomes With Early Referral) was rolled out by Wesson Women's Clinic and the Department of Pediatrics to provide improved care for women with substance abuse issues. We are continuing our work with nurses, scrub techs, and staff to create effective teams on labor and delivery. It has been a struggle to recruit midwives to cover our Triage Unit due to poor job satisfaction. This has been disruptive to the department and allowed us to reflect on coverage that is truly needed and the importance of that coverage. As a solution, Baystate Midwifery and Women's Health redesigned their practice to allow them to provide night and weekend coverage.

QUALITY

Baystate Franklin Medical Center received a 5-Star Excellence Award from PRC for being in the top 10% nationally in Overall Quality of Care in Obstetrics. The midwifery-led obstetrical unit consistently demonstrates high outcomes. Gynecologic Oncology is a leader with the use of sentinel node biopsies for endometrial cancer, minimizing morbidity for patients through a minimally invasive approach to diagnosis and treatment. The Ob/Gyn residents took their success with the Antibiotic Prophylaxis Project in the department on the road, hospital wide, resulting in more effective antibiotic choices and decreased complications in post-operative surgical patients. Baystate Reproductive Medicine continues to provide patients with high success rates while maintaining some of the lowest rates of multiples in the nation.

PATIENT EXPERIENCE

Our Women's Evaluation and Treatment Unit was recognized with a President's Excellence Award for their work, "Maternal Fetal Triaging Index (MFTI) Improves Patient Perception in the Women's Evaluation and Treatment Unit," which significantly improved the wait time for patients. After successful experience at Baystate Franklin with the use of Nitric Oxide for women in labor, we expanded availability to Baystate Medical Center. Urogynecology and Reproductive Endocrinology have expanded access for patients through the Northampton Office, and Urogynecology has been very successful with office and surgery sessions at Baystate Franklin.

VALUE

We are completing our first year of pilot of an OB Bundle. Maternal Fetal Medicine has been developing integrated MFM services across the region with the addition of Berkshire Medical Center and Fairview Hospital. Reproductive Endocrinology is now reading gynecologic ultrasounds from Pioneer Women's Health, so patients do not have to travel to access pelvic ultrasound exams.

ACADEMIC INNOVATION

We have a strong commitment to education in our department. Our Midwifery Education Program is unique in the country, and we are one of four pilot programs as part of collaboration between the American College of Obstetrics and Gynecology and the American College of Nurse Midwives to develop curricula for inter-professional education with student midwives and ob/gyn residents. We graduated six residents, two of whom went on to fellowship, and one of whom joined a practice in Springfield. In addition to residents and midwifery students, we educate medical students and physician assistant and nurse practitioner students. We had 16 peer-reviewed publications this year, two of which were resident-led projects. Gynecologic Oncology successfully recruited 25 patients for the NRG Oncology Group and nine for Gyn Oncology Group Partners.

CHALLENGES

We are recruiting for several positions in the Department to fully staff. This coming year we will transition to a new electronic health record on Labor & Delivery, Maternity Works, which is a Cerner product, thereby aligning us with the rest of the system and allowing the BMC and BFMC obstetrical units to share a medical record. We have put a number of initiatives in place to decrease our surgical site infection rates and will continue to be vigilant. We are working to decrease our primary cesarean section rate for low-risk patients and the Baystate midwives are collaborating with a national group to measure the impact of our initiatives.



Heather Sankey, MD Interim Chair, Department of Obstetrics & Gynecology

Pathology and Baystate Reference Labs

The BH Department of Pathology and Baystate Reference Labs (BRL) aims to provide the highest quality, and breadth and depth of Pathology services to patients, physicians, and health care organizations in our community and region. We provide state-of-the-art, convenient pathology and test management services to physicians, hospitals, and other providers both system-wide and throughout New England.

SAFETY

We collaborated with Health Services to provide support in meeting the BH compliance goal. We also implemented a new method of TB Testing (i.e. T-Spots) in many BRL Patient Service

Centers, offering convenience to BH employees in an effort to increase staff compliance. New procedures were established for monitoring temperature of refrigerators to comply with regulatory requirements. We continue to work with the Special Pathogens Committee on preparedness for managing patients with suspected high risk, infectious diagnoses such as Ebola.

QUALITY

The new Laboratory Information Systems (LIS) at Baystate Wing Hospital successfully went live with new instrumentation in May 2017. We continue to develop an integrated Quality Management Program across the entire BH system. Microbiology coordinated the implementation of molecular based RSV/FLU testing at the community hospitals and converted blood culture bottles to improve employee safety, as well as for quicker detection of organisms. Microbiology also implemented procalcitonin testing to support anti-microbial stewardship efforts in the critical care areas and implemented Rapid Blood Culture Identification in support of antimicrobial stewardship efforts. We established a new procedure for Quantiferon TB testing to reduce error and improve reporting of electronic results to providers. We extended the impact of our Laboratory Utilization Management (LUM) Committee with the tremendous cooperation of Healthcare Quality which led directly to a number of quality improvements (appropriateness guidelines for thromobophilia, CK-MB/troponin, Vitamin D, Nephrocheck, C. difficile). We connected with ARC Blood Hub to streamline processes to electronic ordering. Mandatory electronic reporting to the MDPH across systems was implemented with monthly custom reports for Infection Control Nurse Review.

PATIENT EXPERIENCE

We expanded our partnership with Radiology to provide real-time adequacy/interpretation of Fine Needle Aspiration and core biopsy specimens (ROSE–Rapid On-Site Evaluation), which was the recipient of the President's Excellence Award. PD-L1 biomarker ("checkpoint inhibitor") testing was brought in-house to support the decision to provide immunotherapy regimens for the management of patients diagnosed with certain malignancies. Appropriate testing for these novel drugs is critical given the extreme cost of the agents. We opened eight new Patient Service Centers (PSC) and relocated another, providing more new, convenient, and clean environments for patients. We revised the PSC workflow to improve patient satisfaction. Our couriers increased services for Specialty Pharmacy deliveries to patient homes. We improved our ability to track specimens from order to result, and expanded stat testing services at our Worcester Satellite Lab to Worcester area and eastern MA providers which decreased turnaround time with a positive impact on patient care. We acquired client service responsibilities for Baystate Wing which consolidated patient and provider service to follow established BRL standards.

VALUE

Our LUM Committee developed global metrics to benchmark and monitor hospital utilization, inpatient tests/discharge, inpatient tests/inpatient days, ED tests/billable visits and top six ordered inpatient tests. The TEG IQCP reduced the required QC by a third. We developed a process to perform an infrequent but emergent when necessary apheresis procedure using a more readily available collection kit. This ensures a safe performance of this procedure while allowing the purchase of necessary kits only. We sustained a strong year of blood collections to support >40% of health system blood needs. We integrated AMS lab orders into CIS for patients undergoing therapeutic apheresis. We completed major facility renovations to our core laboratory to provide opportunity for better workflow efficiencies with expanded capacity for growth. We implemented 31 EMR interfaces on our BRL Exchange Integration Platform. We transitioned additional chemistry testing, micro and serology testing to referral laboratories beginning the consolidation of all send-out testing to one centralized send-out department streamlining workflow, reducing expense and redundancy, increasing expertise in send-outs, and standardizing processes and policies.

ACADEMIC INNOVATION

Our pathologists and residents had 15 peer-reviewed publications, six books/chapters, and ten abstracts. Many of our faculty members participate on regional, national and international committees and boards. We delivered 68 invited presentations, mostly national with 26 international. Eight grant applications were submitted (including three NIH RO1); one was successfully funded, and the other investigators are actively seeking alternate funding sources.



Richard Friedberg, MD, PhD Chair, Department of Pathology



Pediatrics

Baystate Children's Hospital is the only accredited children's hospital delivering tertiary care to infants, children, and adolescents in western Massachusetts. The Department of Pediatrics at UMMS-Baystate, comprised of about 70 physicians in 15 subspecialties, provides the majority of inpatient and subspecialty care to children locally. Our vision is to be the premier children's hospital in New England by combining safety, quality, and compassionate patient care with outstanding medical education and innovative clinical and quality improvement research. Recruitment was very successful this year with the exception of child neurology. Inpatient admissions continue to decline, consistent with national trends, but ambulatory specialty volume was fairly stable. We are working to strengthen our alliances with Connecticut Children's Medical Center and Children's Hospital Boston to provide the breadth of inpatient

tertiary care our patients need. The newly expanded, state-of-the-art procedures unit and relocation of pediatric hematologyoncology to a more patient-friendly facility is expected to improve access, quality and the family experience. We are preparing for the new Medicaid ACO, and scholarship continues to increase with a focus on clinical care and health disparities research.

SAFETY

Baystate Children's Hospital (BCH) joined Solutions for Patient Safety in 2015, a network of >100 children's hospitals in North America sharing data and best practices to reduce serious harm to children in our hospitals. We are actively engaged in eight bundles of hospital-acquired conditions and all inpatient units have physician safety champions and team safety huddles. We are pleased to report a 50% reduction in serious safety events in FY2017.

QUALITY

Breadth and depth of pediatric specialty care increased through new faculty who joined the department in the divisions of Hospital Medicine, Pulmonary, Adolescent Medicine, Newborn Medicine, Gastroenterology and Developmental Pediatrics. We have continued our alliance with Connecticut Children's Medical Center, which provides pediatric ophthalmology consultation in the NICU and developed an alliance with the Department of Neurology at Children's Hospital Boston to provide child neurology inpatient consultation overnight and on the weekends. The consolidation of general pediatrics at High Street Health Center with the general pediatrics practice at 3300 Main Street developed a new model of care that increased access by extending hours and offering same-day walk-in appointments as well as creating a better team-based model for both patients and resident education. The new BCH facility in the South Wing expands the pediatric procedure unit increasing both access and scope of procedures and is the new home of the Sadowsky Center for Children, the pediatric Hematology-Oncology clinical program. Our monthly BCH Newsletter continues to expand its distribution, with a popular feature being "Practical Pearls," a clinical guideline that focuses on evidence-based approaches and best practice advice for common pediatric conditions.

PATIENT EXPERIENCE

The PRC "5-Star" award went to two of our division chiefs. Press Ganey surveys since February 2017 have revealed that divisions of Cardiology, Endocrinology, Gastroenterology, and Genetics often have >90% of the respondents recommending the provider office.

VALUE

In partnership with the Department of Obstetrics and Gynecology and with funding from the state, Newborn Medicine launched an innovative neonatal abstinence syndrome program which has reduced LOS for newborns affected by maternal opioid addiction. This project received the Baystate Health President's Excellence Award for 2017. In the third year of the Pediatric Antimicrobial Stewardship program, 486 prescriptions were reviewed, saving 265 days of unnecessary antibiotic treatment for a cost savings of \$18,794. The total saved since the program's inception in 2/2015 is >\$100,000. Analysis of the 4C program, a new model of outpatient care coordination for 138 participants aged three months to 23 years with complex medical problems, revealed a reduction in charges of >\$1M for hospitalizations from 12 months prior to 12 months post enrollment with \$3M reduction in charges.

ACADEMIC INNOVATION

Academic productivity improved this year with 31 published articles, an increase of 30%. New research funding included three intramural Baystate grants to junior faculty and three new grants to Newborn Medicine in addition to their six ongoing studies (three grants, three trials). The pediatric categorical residency received 990 applications and interviewed 135 candidates to successfully match nine medical students who began training in July 2017. Following changes in the training program team and curriculum, the Pediatric Board pass rate improved significantly from 78% to 92%. Academic transitions from Tufts to UMMS-Baystate were completed: three faculty were promoted to associate professor with four new faculty being appointed, almost doubling the number of associate professors in the department.

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Charlotte Boney, MD Chair, Department of Pediatrics

Psychiatry

The Department of Psychiatry includes a broad array of innovative clinical programs including approximately 100 inpatient beds at four sites, four partial hospital programs, a robust psychiatric consultation service, several outpatient programs, and a system of embedded behavioral health resources in BMP primary care practices. The UMMS-Baystate educational programs include a highly rated medical student clerkship, a thriving general psychiatry residency program which serves as a major pipeline to improve the psychiatry workforce in the region, and a variety of training programs for allied mental health professionals.

SAFETY

We have adopted standardized processes for suicide risk assessment on inpatient psychiatric units

across the Behavioral Health service line. Advancement in use of sensory integration modalities, de-escalation techniques, and collaborative problem solving approaches have resulted in a dramatic reduction in the use of restraint/ seclusion in treatment of children and adolescents in the Child Partial Hospital Program. The use of restraint and seclusion continues to track two standard deviations below statewide average on inpatient psychiatry services. We have launched a transcranial magnetic stimulation service, an evidence-based treatment for patients with depression with a favorable safety profile in comparison to other treatments for refractory depression such as ECT. The Behavioral Resource Team, coordinated with the Psychiatry Consult Service, provides supervision and training of inpatient "constant companion" staff for high-risk patients with behavioral health problems and works with nursing staff on inpatient medical units to develop care plans focused on ensuring safety.

QUALITY

We have continued to expand our Integrated Behavioral Health Program delivering psychiatric consultation and providing embedded mental health services in BMP community practices. The Massachusetts Child Psychiatry Access Program, a Baystateled statewide program supporting integration of mental health in pediatric primary care was redesigned and updated for 2017. The new program model is designed to improve the reliability and efficiency of the service and to support the adoption of clinical practice guidelines in children's mental health. Efforts are underway for the development of a Collaborative Addiction Resource Team which includes consultation for patients with substance use disorders (SUDs) in Baystate inpatient facilities and outpatient clinical service providing "bridge" treatment for patients transitioning from the hospital to outpatient care. Outpatient programs within the Department are adopting measurement-based care processes, tracking patient reported outcome measures during the process of treatment. The psychiatric consult service initiated a Behavioral Intervention Team (BIT) model of practice and collected pilot data to evaluate the impact of the model on a variety of quality measures. The BIT model includes preliminary screening of all admissions and provision of behavioral health interventions for patients at risk of psychiatric decompensation and prolonged length of stay.

PATIENT EXPERIENCE

The Child Partial Hospital program has developed and implemented a patient experience instrument for directly assessing the experience of care for young children receiving mental health treatment. The Child Partial Hospital program also celebrated its 30th year of operation with a move to a newly developed state-of-the-art facility. The Baystate Family Advocacy Center has been awarded over \$700K in new grants from Victims of Crime Act (VOCA) and the federal Office for Victims of Crime (OVC). These grants are focused on providing treatment, psychological support, and outreach to children and families who have experienced traumatic stress including victims of commercial sexual exploitation and surviving family members of homicide victims.

VALUE

The Behavioral Resource Team completed its first full year of work supporting nurses on med/surg floors with care plans for behaviorally challenging patients and management of constant companion utilization and blocked beds, resulting in nearly \$1M in expense reduction and revenue enhancement for the year. The psychiatric neurotherapeutics service continues strong financial performance with ECT volumes 50% higher than previous years, and initiation of transcranial magnetic stimulation (TMS) treatment. The adult partial hospital program has improved financial performance with growth of 20% over budgeted volume in the latter half of FY17, supporting planned expansion of program in FY18.

ACADEMIC INNOVATION

The UMMS-Baystate psychiatry residency program maintains a 100% Board pass rate on first attempt for graduates of the program since its inception in 2008. 50% of the residents presented peer-reviewed scholarship at national academic societies during the past year with faculty mentors. The neuropsychology service developed a concussion education program in collaboration with BMC Trauma Surgery department and the northwest DA's office. Members of the Psychiatry Department serve in leadership roles within the American Psychiatric Association, Academy of Psychosomatic Medicine, American Academy of Child and Adolescent Psychiatry, and the American Academy of Psychiatry and the Law. Several ongoing clinical research projects in the department include: 1) the implementation of home-based therapy for children and families with traumatic stress, 2) shared decision-making in end-stage renal disease, 3) collaborative care for adolescent psychotherapy.



Barry Sarvet, MD Chair, Department of Psychiatry

Radiology

SAFETY

- Dose Index Registry highlights CT scanners or protocols with out-of-range doses for action.
- Updated policy for gadolinium enhancement in MRI developed and distributed system-wide.
- Participation in American College of Radiology national registries for mammography and lung cancer screening provides actionable metrics for safety and quality.

QUALITY

- Digital Breast Tomosynthesis (3D Mammography) introduced and should lead to improved cancer detection and fewer callbacks for false positives.
- Imaging protocol standardization continues across the health system.
- Baystate Wing radiology images and reports available in CIS and PACS.
- Standardized reporting language and follow-up recommendations for thyroid nodules instituted.

PATIENT EXPERIENCE

- Screening mammography results now available through patient portal next business day.
- Joint project with Pathology to improve delivery of immediate interpretation of image-guided biopsy specimens led to safer and quicker biopsies and was rewarded a President's Excellence Award.

VALUE

- Clinical decision support software roll out underway to optimize utilization management and lessen need for imaging pre-authorization requests.
- Marketing staff hired and marketing campaign initiated for radiology.
- BMC outpatient imaging services has annualized net revenue of \$24.9M and net margin of \$13.8M.
- System-wide analysis of nuclear medicine reveals opportunities for rational allocation of services and savings (BHMIT).
- Comprehensive system-wide five-year capital budget plan created.

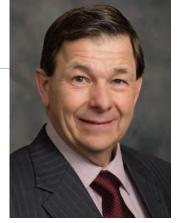
ACADEMIC INNOVATION

- Increasing involvement of faculty and residents in national and state radiology organizations.
- Radiologist selected as associate director of Academic Career Development.
- Fourteen peer-reviewed publications, 18 national presentations/abstracts and four book chapters produced.
- Residency program reaccredited by ACGME.
- Four promotions to associate professor.

SUMMARY

FY 2017 August YTD outpatient volume -2%, inpatient volume +2.5%, ER volume +1% and BBWC +2.5%. Overall volume was +1.5% but -1.1% to budget. Total gross charges are -0.4% to budget but expenses were 5.1% less than budget and 2.5% to flex resulting in a net margin of \$13.8M. A major initiative was the roll out of ACR Care Select, a Clinical Decision Support tool, in response to a Congressional mandate. This was slowed by a mid-summer CMS decision to postpone mandatory usage for Medicare patients but we continue to make progress with a system-wide rollout anticipated in Q1 or Q2 2018.

The affiliation with the University of Massachusetts Medical School has energized academic activity within the department with new involvement of attending staff and residents in regional and national organizations. The residency program was re-accredited by the ACGME with no areas of concern identified. Next business day availability of screening mammography results in the patient portal was instituted and represents a unique service promise to these patients in western Massachusetts. The elimination of the need for a screening creatinine for most patients undergoing gadolinium-enhanced MRI will save considerable money and time for the health system and our patients.



Richard Hicks, MD Chair, Department of Radiology



The Department of Surgery is a team of 48 surgeons, 32 advance practitioners and 67 employees which has made significant progress this past fiscal year towards advancing Baystate Health's strategic goals of top tier performance in safety, quality, patient experience, and value using academic innovation to power our efforts.

SAFETY

The department's top priority is patient safety. Two divisions stand out with new initiatives this past year: the Breast Surgery service has expanded the radioactive seed localization technique to facilitate accurate excision of malignant and benign breast lesions, and Pediatric Surgery started using ICG cholangiography in laparoscopic hepatobiliary surgery to minimize the radiation exposure in children.

QUALITY

The Division of Colorectal Surgery implemented an Enhanced Recovery/Perioperative Care pathway which decreased length of stay and overall cost of care. The Trauma and Thoracic Surgery divisions have gained national recognition for quality and outcomes for the Surgical Rib Fixation Program. The Thoracic Robotic program has expanded and the Bariatric Surgical Program achieved a three-year accreditation by the MBSAQIP.

PATIENT EXPERIENCE

A Telemedicine Program was successfully implemented in Colorectal Surgery for postoperative follow-up. Pediatric Surgery continues to expand the use of the Single Incision Pediatric Endoscopic Surgery. We had five providers recognized by patients and families by Gifts of Gratitude, as well as three providers with 5-Star PRC ratings.

VALUE

In today's health care, economic market value to the patient and health care system is paramount. The Department of Surgery has successfully recruited a number of providers who will bring value to the health care system; a specialty-trained minimally invasive surgeon, a new division chief of Trauma/Acute Care Surgery and Critical Care, a new senior trauma attending, a pediatric plastic surgeon specializing in craniofacial surgery, and two breast surgeons. We have consolidated on-call coverage at Baystate Noble Hospital and Baystate Wing Hospital and Surgical Oncology has extended clinical services to Baystate Noble Hospital providing surgical oncology care for breast and melanoma patients. The Colorectal CMS Care Bundle has realized savings. The lung cancer screening program has expanded, and the Pediatric Surgery Same Day Discharge for simple appendicitis was initiated, decreasing length of stay.

ACADEMIC INNOVATION

We have had two consecutive years of 100% Board Qualifying Examination pass rate, a fifth successive year of residency without a single ACGME citation, and a successful placement of all eligible 2017 graduates in fellowships. We implemented "Firefly," a novel residency information management system. Pediatric Surgery had a formal relationship with the Fellow in Pediatric Surgery from Connecticut Children's Medical Center. We had multiple faculty members recognized for excellence in teaching in the surgical clerkship, Tufts University School of Medicine including one faculty member with 20 years of service to TUSM. With the new University of Massachusetts Medical School-Baystate, we have members on the admissions committee, a PURCH program Learning Communities mentor, and 38 surgeons with UMMS-Baystate Faculty appointments including eight academic promotions and six new appointments. This was a good year for the faculty in the national scene with National Society appointments including a co-chair of SAGES FLS Committee; the inaugural vice president of the New England Society for Metabolic and Bariatric; a New England Surgical Society Foundation grant reviewer; a member of the Executive Committee for the General Thoracic Surgical Club, the only international society for General Thoracic Surgeons; a nomination to the American College of Surgeons Board of Governors; an appointment to the Board of Trustees of the Massachusetts Medical Society, the Practice Committee of the American Pediatric Surgical Association, and we participated in the Inaugural Advanced Trauma Life Support (ATLS) course in Haiti. The department has two new vice chair positions: Research and Academic Affairs. A member of the department was the recipient of the Research Pilot Award Program. Cumulatively, we had 27 national, international and local presentations culminating in 21 published manuscripts, seven book chapters, and one textbook editorship.

CHALLENGES

Both inpatient and outpatient surgery is performed at multiple locations. Regional integration and determining how surgical services are allocated, as well as call coverage for these sites creates a challenge. Surgery's role in population health along with the new Medicaid ACO will require further alignment with care coordination. What are the best tools to measure quality and efficiency of a surgeon for at-risk contacts with MCO's?



Nicolas Jabbour, MD Chair, Department of Surgery

2017 BAYSTATE MEDICAL PRACTICES Service Line Highlights

Baystate Heart and Vascular Program

In FY2017 the Heart and Vascular Program continued to achieve national benchmarks and recognition for the outcomes and quality measures of many of its programs. A formal cardiogenic shock team and advanced congestive heart failure service were established, and we implanted the first ventricular assist device (VAD) at Baystate Medical Center and received Joint Commission accreditation for this program. H&V's value for the system continued with almost a 10% annual margin growth. It has been a robust year for academics, with a faculty member obtaining competitive grant funding, and several completing professional and faculty development through the UMASS Junior Faculty Development Program, Physician Leadership Academy, as well as the Mentors Matter Program. This was also a year of transition with senior faculty, including the chief/directors of cardiac surgery, electrophysiology, non-invasive cardiology, and a vascular surgeon announcing retirement.

SAFETY

- Initiation of "Culture of Safety"- HVCC, HVOR
- Heart and Vascular Peer Review Redesign and Implementation

QUALITY

- Truven Top 50 Cardiovascular Hospital (seventh time)
- U.S. News and World Report "High Performing" in 4/4 Heart and Vascular Categories-Abdominal Aortic Aneurysm, Aortic Valve Surgery, CABG, Congestive Heart Failure
- National Top Decile-Mortality for TAVR, PCI
- Mission Lifeline Bronze Plus Award-STEMI Receiving Hospital
- Joint Commission Certification for Ventricular Assist Device program
- Initial Ventricular Assist Device(s) implanted at Baystate Medical Center
- Cardiogenic Shock Team Implementation
- Implementation of Congestive Heart Failure Service

PATIENT EXPERIENCE

• Press Ganey implemented consistent benchmark new patient access for cardiology, vascular surgery, and cardiac surgery at Baystate Medical Center

VALUE

- 9.1% increase in direct margin; 7.4% increase in total margin Q2-2016 to Q2- 2017 Heart and Vascular Service Line
- Significant (>75%) TAVR program expansion
- Successful CABG Bundle program, with close to \$1M in net savings
- 3300 Cardiology B to A Conversion
- Revised implantable purchasing savings in excess of \$1M
- Next Generation ACO internal Congestive Heart Failure Bundle initiated
- Wing Integration-physicians and systems

ACADEMIC INNOVATION

- K23 NIH Grant Award
- Low Risk TAVR Study
- Cardiology Fellowship receives ten-year accreditation; Board pass rate 100%
- 23 peer-reviewed original publications; three book chapters; 18 accepted abstracts

Future: expansion of TAVR, durable ventricular assist devices (VADS) and temporary mechanical support, as well as limb salvage. New services, including left atrial appendage closure, percutaneous mitral valve procedures, cardiology participation in magnetic resonance imaging, and venous disease management.



Aaron Kugelmass, MD Chief of Cardiology and Vice President/Medical Director Baystate Heart & Vascular Program

Baystate Regional Cancer Program

The Baystate Regional Cancer Program (BRCP) provides services to cancer patients through the D'Amour Center for Cancer Care and Baystate Medical Center in Springfield, as well as our regional hospitals. The program sees over 2,600 new cancer cases annually; each year approximately 7,000 patients receive some type of clinical service at the D'Amour Center. We are the only health system in the region to provide gynecologic oncology care (including appropriate radiation therapy), therapy for leukemia, and sophisticated radiation therapy techniques such as stereotactic body radiotherapy and stereotactic radiosurgery. The program is supported by outstanding clinicians in the Pathology, Radiology, and Surgery Departments. Our goal is to be recognized as the regional "solution shop" for patients with blood and malignant disorders and their referring physicians, and as the leader for high-quality and evidence-based recommendations regarding cancer management in western Massachusetts.



Wilson Mertens, MD Vice President/Medical Director Baystate Regional Cancer Program

SAFETY

Cancer care is complex, and cancer patients, already prone to illness as a result of their condition, may experience additional suffering as a result of treatments. Due to expanding needs and changing regulatory requirements (US Pharmacopeia Standards 797 and 800), the pharmacy at the D'Amour Center for Cancer Care is being redeveloped, enlarged, and re-located to the third floor of the Cancer Center. Plans have also been developed to expand the Cancer Center's infusion suite, adding nine additional treatment chairs and optimizing nursing workflows to enhance patient safety. In addition, BRCP, in conjunction with Baystate Pharmacy, Nursing, and Employee Health, updated and rewrote our Baystate Hazardous Medication Handling Policy to conform to new national standards.

Oral antineoplastic medications have proliferated in recent years and have become the focus of international efforts to ensure appropriate patient management. Over the past year, our program has developed template ordering of these oral drugs through our EHR to achieve more effective order review and patient surveillance by combining treatment plans and standardized prescriptions, supportive care medications, and standardized monitoring parameters. Additionally, our program has worked closely with Baystate Specialty Pharmacy to enhance the monitoring of cancer patients treated with these agents to ensure compliance and manage side effects. The Baystate Regional Cancer Program developed standardized ordering for oral antineoplastic drugs.

The division of Radiation Oncology is able to enhance its use of electronic health record capability and officially became completely "chartless" in 2017.

QUALITY

The Cancer Program underwent another successful recertification sponsored by the American Society of Clinical Oncology's Quality Oncology Practice Initiative (QOPI®), a nationally recognized cancer quality benchmark and measurement program; BRCP has participated in QOPI for over a decade, and has been certified continuously since 2011, with consistently high scores. The program completed external review by a major, nationally recognized cancer program, and no cancer program findings were noted during Baystate Health's Joint Commission review.

PATIENT EXPERIENCE

The BRCP's Infusion Suite and Cancer Center at Baystate Mary Lane Outpatient Center is being expanded to improve patient flow, patient experience, and manage increasing volume. Access to care is a priority; we continue to maintain patient access to our program for consultation within five business days. We have dramatically reduced wait times for our cancer genetics program, now one of the busiest in Massachusetts.

VALUE

BRCP has achieved full compliance with all cancer-associated "Choosing Wisely™" recommendations, supported by the American Society of Clinical Oncology (ASCO), the American Society of Radiation Oncology (ASTRO), and the American College of Surgeons (ACS). The program also participated in the initial phase of the Centers for Medicare and Medicaid Services Oncology Care Model. We were found to have achieved below the mean costs for almost all parameters including drug treatments and sophisticated imaging modalities while having one of the highest for the complexity and seriousness of the cancer cases we treat. Further work is planned to develop formal alternate cancer care payment approaches with our physician-hospital organization, Baycare, in the coming year.

ACADEMIC INNOVATION

The fellowship program continues to attract excellent candidates and this has been reflected in improved fellow performance on in-training examinations. We continue to host fellows from Dartmouth Medical Center/Norris Cotton Cancer Center annually for enhanced instruction in malignant hematology, and particularly in HIV/AIDS–associated malignancies, with positive reviews. The Rays of Hope Center for Breast Cancer Research continues to support local clinical and laboratory investigators with start-up and exploratory grants, as well as our breast cancer and high-risk tumor and tissue registry.

Baystate Neurosciences & Rehabilitation

Baystate Health Neurosciences and Rehabilitation seeks to be the premier tertiary/quaternary Neuroscience provider for western Massachusetts and the regional leader in population health initiatives. This service line represents the vanguard for telemedicine at BH, exploring opportunities for use of telehealth technologies in stroke, headache, general neurology, and remote EEG and Sleep coverage for regional Baystate Health and Non-Baystate Health hospitals.

SAFETY

Stroke mortality FY17Q1 0.93 (< 1.0 is better), readmission FY17Q1 0.66 (< 1.0 is better) and composite Score (FY17Q3 94.9) statistics were excellent in FY17. The neurosurgical site infection composite score was 0.68% and favorable to national average. The addition of a Neuro Critical Care Advanced Practitioner team 24 hours/day, weekdays provided additional overnight support to general neurologists responding to acute stroke calls.

QUALITY

The ACS NSQIP Semiannual Report gave Neurosurgery an "Exemplary" rating. The stroke team implemented results of the DAWN Trial into clinical practice with three immediate favorable results of patients receiving stroke treatment in the extended window. Neurology was awarded the American Association of Neuromuscular and Electrodiagnostic Medicine (AANEM) EMG Laboratory Accreditation at BWH and BMC with exemplary status. The Neurodiagnostics and Sleep Center absorbed and reorganized the Pediatric EEG laboratory at Wason Avenue for improved quality and financial performance and implemented a remote access network for long-term Video EEG monitoring in Baystate Children's Hospital, including the Adolescent unit, PICU, NICU, Infant and Children's unit, and implemented stat EEG coverage at BWH to facilitate discharges and treatment and prevent patient transfers.

PATIENT EXPERIENCE

Sleep Services have been initiated in the East Longmeadow Multispecialty Practice. Multiple community-based sports medicine lectures were conducted in multiple Baystate Health regions. Neurosciences collaborated with surgical and operating room (OR) leadership to increase Neurosurgery OR block time in the last two quarters of FY17–reducing time to elective neurosurgery. Neurosurgical Block Time Utilization was best in class at 82%.

VALUE

Profitability increased through FY17Q2, representing 3,290 more cases and \$1.2M increased direct margin. Through vendor negotiations and system configuration, the Regional Neurodiagnostic and Sleep Diagnostic equipment was replaced with a reduction of nearly \$900K in capital costs. The Service Line executed the seamless transition of a closing private Greenfield Neurology practice to gain access to the patient panel, which is responsible for a yearly ancillary revenue stream of \$400K/ year. The Service Line terminated a non-Baystate Medical Practice Neurosurgical Practice based at Baystate Wing Hospital and have redirected the formally out-migrated surgical cases.

ACADEMIC INNOVATION

The Director of Sleep received a Baystate Research Pilot Award of \$50,000 annually for two years to study a Novel Scoring Method for Mild Obstructive Sleep Apnea. The Neurodiagnostics and Sleep Center has a new affiliation with the Laboure College Neurodiagnostics program. Rehabilitation clinicians provided 19 clinical affiliations this fiscal year for area physical, occupational and speech–language pathology graduate programs.

CHALLENGES

Physician recruitment and staffing challenges have limited growth of the Neurosciences service line. Opening the neuro critical care unit and primary admitting service will result in improved outcomes, decreased cost of care, lengths of stay, and improved patient experience. The Spine Program needs to expand to include more community practices, potentially decreasing Emergency Department visits and inpatient admissions, while increasing surgical procedures. The development of philanthropic funding streams will help propel Neurosciences to a new level.



Edward Feldmann, MD, FANA, FAHA Vice President and Medical Director, Neurosciences and Rehabilitation, BH Chair, Department of Neurology

Baystate Primary Care

Primary Care continues to grow as Baystate increases its primary care footprint in the region. We work to be the best primary care group for patients and providers in western Massachusetts by delivering value in clinical, measurable ways: better patient outcomes, lower cost than our competitors, improved patient experience, and improved provider engagement.

SAFETY

- We prioritize safety by developing easy access for more of our community to high functioning and engaged care teams.
- We promote a culture of safety and strive for a "no harm" environment.
- The primary care providers of Baystate Medical Practices (including Baystate Wing and Baystate Noble PCPs) care for over 99,165 adults and over 12,205 children in western Massachusetts with over 245,000 annual visits.
- Our affiliation with Cardiology and Internal Medicine Associates and Western Mass Medical Group delivers primary care to another approximately 9,000 patients.
- In addition, Baystate and the Primary Care Service Line (PCSL) affiliated with another community primary care practice this year: Springfield Medical Associates. SMA provides excellent care to approximately 12,000 patients in our community.

QUALITY

- We deliver high quality with best practices in clinical models of care for both individuals and populations.
- Primary care providers continue to collaborate with specialists to develop care models around common disease states as part of continued efforts to provide high quality, evidence-based, and efficient care. Technology has aided in this process with adaption of secure texting used to increase clinical communication among providers.
- Providing high quality care and performing well in standardized clinical quality measures (HEDIS) is a priority for the PCSL. We were part of one of the highest quality Accountable Care Organizations in the Next Generation Medicare risk contract.
- We continue to engage our patients and care teams in providing coordinated care that is effective and patient centered. Ten PCSL practices successfully renewed their Patient Centered Medical Home Recognition with the National Committee of Quality Assurance (NCQA) this year.
- We continue to integrate behavioral health and case management resources into our practices to drive population healthbased models that improve the wellness of our communities.

PATIENT EXPERIENCE

- Professional Research Consultants (PRC) recognizes providers as 5-Star Performers in patient experience for achieving the 90th percentile in overall provider rating including providers working in BMP-Northern Edge, BMP-Pioneer Valley Family Medicine, Baystate Primary Care-Palmer, BMP-Greenfield Family Medicine, and BMP-East Longmeadow.
- BMP Primary Care continues to look for alternatives to engage with patients, including telemedicine and our patient portal.
- We have centralized care coordination as well as embedded care managers to improve patient care. Care coordinators outreach to patients who are behind in care for preventive health and disease management. Nurse care managers help patients manage chronic diseases.

VALUE

- We provide value to our community with smart growth and improved population health, and high quality, affordable care.
- The PCSL continues to work to achieve the Triple Aim by managing patient populations, improving the patient experience, and lowering costs.
- Our 85 physicians and 38 advanced practitioners increased patient appointments and access from 82% in 2016 to 85% in 2017.
- We focused on regional and rational consolidation of practices this year. We consolidated practices in Belchertown, Wilbraham, and Deerfield improving efficiency and reducing costs.
- We consolidated pediatric services in the eastern region into two sites and began offering Saturday coverage.
- Health New England collaborated with us to capture the severity of illness for our patients providing greater recognition of the severity of illness and financial resources needed for our Medicare Advantage patients.

ACADEMIC INNOVATION

• University of Massachusetts Medical School-Baystate recruited students interested in rural and urban primary care and our primary care practices will support the ambulatory training of these students. This partnership will help Baystate Health address the region's urgent need for primary care physicians in western Massachusetts by building a pipeline of students more likely to remain in our health system or practice locally.



Elizabeth Boyle, MD

Vice President Primary Care & Clinical Integration

2017 BAYSTATE MEDICAL PRACTICES **Region Highlights**

BAYSTATE HEALTH Eastern Region (BHER)

The integration process of Baystate Mary Lane Outpatient Center and Baystate Wing Hospital with Baystate Health has continued to be a priority. A major step forward was accomplished in May 2017, with the implementation of the CIS Electronic Medical Record for the inpatient unit of Baystate Wing Hospital. Additionally, 43 other software applications were transitioned

at that time, including Finance, Pharmacy, Radiology and Operating Room processes as well as many other areas. This was a significant undertaking, requiring many months of preparation and close, productive collaboration across many disciplines, most notably I&T and clinical operations. As a consequence of the CIS conversion, BHER is now fully integrated into Baystate Health. This permits us to create reliable data and metrics by which to make strategic and tactical decisions in allocating and deploying resources and providers in the region.

With these IT tools, we can more effectively focus on which specialty providers are most needed to support our patients, our hospitalist service, and our local PCPs. For example, we have added a pulmonologist and endocrinologist in shared practice arrangements with Baystate Medical Center. Prior to these recruitments, BHER patients were required to travel to Baystate Medical Center but often refused or were unable to travel for specialized care.

For the year ahead our priorities will be to continue our close work with the Service Lines to provide services appropriate to BHER. Where that is not possible, we will work with Service Line leaders to adopt alternative care strategies, e.g. telehealth, to fill the gaps. Our other major priority will be to realign and restructure the utilization of the operating rooms on each campus. Discussions are underway with pertinent stakeholders (e.g. surgeons, gastroenterologists, cardiologists, nursing, etc.) The ultimate goal is to have two surgical centers of excellence in BHER with different missions, both functioning with optimal efficiency.

SAFETY/QUALITY

We have established a Quality Council with the assistance of the Department of Quality. This has broad participation, including administrative and clinical leadership. To align our safety/quality programs with the overall Baystate Health constructs, the Baystate Wing Hospital medical staff amended its bylaws creating the Quality Council and the Hospital Quality Coordinating Committee.

Other Quality/Safety initiatives this past year have included re-invigorating the prior Baystate Wing Hospital LEAN experience via BHMIS. Unit huddles and Idea Boards with leadership and provider training have begun.

PATIENT EXPERIENCE

There has been a focus on this area both directly and indirectly. Many of our staff and providers have participated in Compassionate Connections training and this is ongoing. There was also participation in the recent day-long patient experience event. We also recognize that the patient experience is affected by the employee engagement and provider burn-out. These issues are being reviewed at the system and local level.

VALUE

- Practice schedules have been closely reviewed and adjusted to meet expected clinical hours and no-show rates.
- Hospitalists and specialist inpatient billing is being monitored for compliance and timely billing submissions resulting in better financial sustainability.

CHALLENGES

Executing the operating room re-alignment strategy will be a key challenge. The expectation is that with the focused, efficient, surgical sites (and an additional general surgeon) we will be able to recapture the lost volume of surgical procedures we experienced over the past few years.

The two other substantial challenges will be restoring our specialty provider base (in progress) and shoring up our primary care network, also challenged by provider vacancies. These challenges may require innovative thinking to find solutions.

David Maguire, MD Chief Medical Officer



BAYSTATE HEALTH Northern Region (BHNR)

SAFETY

- Completed telemetry project including the creation of the new cardiac monitor tech role. Hired and trained all new certified monitor techs and went live with the monitor room.
- BFMC Emergency Department patient wrist band scanning increased by 16% and medication scanning by 20% resulting in increasing the PPID (Positive Patient Identification) compliance.
- Leapfrog "A" score for four consecutive rating periods in a row.

QUALITY

- Implemented SurgiNet, electronic medical record/documentation system for pre/post/OR.
- 3D mammography with ACR accreditation implemented in April.
- Successfully opened a newly renovated Endoscopy suite with state-of-the-art equipment. Multiple meetings with other Baystate disciplines, as well as multiple site visits. New work flow and scheduling process for endoscopy cases implemented. All RNs crossed-trained and competent for this revised work flow.
- BFMC's triennial on-site accreditation survey by the Joint Commission (TJC) occurred on February 7 February 10, 2017. The survey was successful as evidenced by the fact that there were no findings on TJC Safer Matrix in the high limited, pattern or widespread sections. Close coordination of corrective actions and written evidence of standards compliance is underway. This includes everything from revamped policies, auditing and monitoring of corrected practices, and renovations to improve the safety of the mental health unit.
- Recognized as Top 100 Rural and Community Hospitals.
- Lab began work on Electronic Documentation Control initiative.
- AHA Gold Plus "Get with the Guidelines" award.
- CareChex 2017 Quality Award for Surgical Care. BFMC is in the top 10% of hospitals with a score of 90.9.
- Journal of Infection Control recently reported BFMC made the list of "50 Hospitals with Lowest Pneumonia Mortality" according to data from CMS.
- In FY17, accomplished both true ED and Hospitalist Service Line integration across all of the BH entities.
- Hospitalist recruiting was excellent during FY17; improving the staffing of the group which in turn allowed many patient centric measures to be implemented going forward in FY18.

PATIENT EXPERIENCE

- Left without being seen in ED FY2016 was 2.5%; FY2017 is 1.4%, FY17 goal = 1.4%.
- PRC 5-Star excellence award for "Overall Quality of Care" in OB- top 10% nationally for patient satisfaction.
- Community Health Center's Urgent Dental Clinic at the BFMC campus opened for business on October 14.

VALUE

- Surgical inpatient cases above budgeted projections FYTD.
- ED provider productivity was in the 85th percentile.

ACADEMIC INNOVATION

• Grant approved for Pioneer Valley Region AHEC (American Health Education Center) to be located at BFMC for the purpose of developing a Department of Family Medicine and a Family Medicine residency.



Cindy Russo, MS, RN, FACHE President and Chief Administrative Officer, BH Northern Region

BAYSTATE HEALTH Western Region (BHWR)

Acceleration of integration into Baystate Health was the overarching theme for FY2017. We have been amending bylaws, coordinating our departments, and aligning our processes to mirror those of the health system. We continue to orient toward our community and its needs.

SAFETY

- Baystate Noble Hospital Emergency Department and local fire departments improved Return of Spontaneous Circulation (ROSC) in out-of-hospital cardiac arrest from 8% to 50% between 1QFY2017 and 3QFY2017 by standardizing processes and community education in CPR, strengthening relationships with pre-hospital teams, and creating a "pit crew" approach to cardiac arrest.
- The Safety Reporting System (SRS) went live, transferring all safety reporting to electronic form on June 1, 2017. The system communicates with leaders and quality, creating a BH wide coordinated effort.
- There is a daily safety huddle for hospital leaders and staff. The focus is on opportunities for process improvement in safety and quality, as well as recognitions of excellence among staff.
- BNH received an "A" grade for safety by the Leapfrog group for the Leapfrog surveys completed in spring and fall 2017.
- Hand hygiene performance is currently at 95%.

QUALITY

- The CMO and quality director reviewed and revised the processes in place for medical staff peer review, and the CMO began participation in all departmental peer review committees in May 2017.
- In Fall 2017, the BNH hospitalist team became universal admitters for all medical, critical care, surgical and psychiatric patients, creating the same standard of care for all admitted patients.
- In 2017, our hospitalists completed cross credentialing at all BH hospitals. BNH hospitalist Dr. Lebaka was the first hospitalist to work shifts in all of the BH hospitals.
- The BNH Quality dashboard is presented at the Hospital Quality Coordinating Council and the Hospital Quality Council, with each department presenting performance relative to established benchmarks. The quality director, in conjunction with the CMO and departmental chiefs, completed Ongoing Professional Practice Evaluations (OPPE) for medical staff.

PATIENT EXPERIENCE

- In April 2017, the CMO began working with medical and surgical staff to improve HCAHPS physician communication scores.
- Senior and department leaders perform patient experience rounds and report on these rounds in the Patient Experience Committee. BNH implemented improvements in patient relations, including leadership involvement and accountability, policy, process, tracking, trending and dedicated communications.

VALUE

- The CHART (Community Hospital Acceleration, Revitalization and Transformation) team reduced Emergency Department visits by 25% (goal set by state was 15%) among high users, paving the way for similar strategies to be used by case management for ACO patients. In 2017, Appeals and Denials work transferred to the Baystate Medical Center (BMC) team.
- In 2017, we began to transfer excess outpatient surgical volume at BMC to BNH, with a 5% increase in BNH OR volume.

ACADEMIC INNOVATION

• BNH currently provides educational opportunities to nursing and advanced practitioner students. Following the integration of the electronic medical record, the hospital plans to offer rotations for medical students and residents.

CHALLENGES

- Conversion of the Meditech electronic Medical record to Cerner, will be the major focus of BNH over the next two years. This conversion will dominate staff energies at a great expense to the health system. Other initiatives at BNH must wait for this Information and Technology (I&T) integration.
- Teletracking and Telehealth initiatives must await completion of I&T conversion at BNH, possibly as late as 2019.
- Completing the full integration of the hospitalist team system-wide will involve a measure of instability and challenge as we leave behind a community hospital group and convert to a system-wide team of hospitalists that move between locations.
- Surgical services integration, involving surgical call coverage arrangements with BH surgeons and improving outpatient surgical volumes at BNH, present challenges and opportunities. I&T system integration is also a rate-limiting step.
- Ongoing building renovations at BNH will continue to consume capital, time and staff attention.



Britton T. Percy, MD Chief Medical Officer Baystate Health Western Region and Baystate Noble Hospital

Advanced Practitioners

Every day you will likely have contact with one advanced practice (AP) provider. There are 345 advanced practice providers within Baystate Medical Practices which equates to 271 full-time employees. They are employed in all areas of health care including genetics, primary care, travel medicine, inpatient specialties of hospital medicine and ICU. We have begun foundational work on developing a competency-based orientation; AP, specific policies, and the credentialing and privileging process. It is a privilege to work alongside the teams at Baystate Medical Practice and help chart a positive path forward.

QUALITY/SAFETY/VALUE

Advanced Practice now has representation in multiple hospitals and ambulatory quality and safety committees; laboratory utilization, medication safety, CAUTI, Baystate Medical Practice quality council to name a few. The representation allows us to have a voice to guide best practices and to assist with information exchange with multidisciplinary groups. The AP group has also been very active with site projects that have resulted in both local and national presentations. Staff has also published works related to quality outcomes. A recently started project is looking at AP utilization and models of care.

PATIENT EXPERIENCE/PROVIDER ENGAGEMENT

This year a subcommittee called LEAP (leading, engaging advanced practice) was established with the purpose of outlining a pathway for career advancement, building platforms for insightful dialogue and developing an innovative AP network. We have since created multiple sites on Workplace and are developing a website on eWorkplace. To facilitate discussion, a list serve was created to allow for distribution of pertinent information.

ACADEMIC INNOVATION

Inspired by the tremendous traits of resiliency and determination observed in student learners, building the pipeline of talent is critical. This year we implemented a placement process for nurse practitioner students. This method allows for one point of entry and verification of students and allows for a more robust student experience while not overwhelming any one practice site. In 2018, this will also include the physician assistant students. In conjunction with the placement process, we have also developed a preceptor training course to help staff who are new to the educator role. A committee was formed to create educational programs for AP staff. This year we held our first advanced practice provider grand rounds, featuring local AP staff. Going forward Grand Rounds will be a bimonthly program that offers CEUs to those who attend. This program is also video recorded and uploaded to YouTube to facilitate learning for staff who are offsite or unable to participate. With the opening of the medical school, several of the nurse midwives are now faculty members at the level of clinical instructor up to associate professor.



Lisa Erickson DNP, CNP, ACNP-BC Director of Advanced Practitioners

2017 BAYSTATE MEDICAL PRACTICES New Physicians and **Advanced Practice Clinicians**



Julie Abert, CNP Baystate Noble Primary Care-Feeding Hills



Mehak Ali, MD Baystate Hospital Medicine



Fahad Alroumi, MD Baystate Greenfield Pulmonary and Sleep Medicine



Larisa Altman, CNP Baystate Hospital Medicine



Michael Bell, PA-C Baystate Wing General Surgery



Tatiana Bendioukova, MD Baystate Brightwood



Cambel Berk, MD BMP-Northern Edge Adult & Pediatric Medicine



Kranti Kiran Bhagi, MD **Baystate Neurology**



Aleksandra Blackmer, PA-C **Baystate Emergency Medicine**





Zeling Chau, MD Baystate Wing General Surgery



Esteban DelPilar-Morales, MD **Baystate Infectious Disease**



Paula Braverman, MD Chief, Baystate Adolescent Medicine



Veda Chau, PA-C Baystate Neurology



Jaime Broussard, PA-C Baystate Emergency Medicine



Kirankumar Chauhan, MD Baystate Noble Primary Care-Feeding Hills



Fadi Chalhoub, MD **Baystate Cardiology**



Lori Circeo, MD Baystate Critical Care Medicine





Molly Czaplicki, CNP Baystate Hospital Medicine







Ashley Deutsch, MD Baystate Emergency Medicine



Lisa Erickson, DNP Director, Advanced Practice Clinicians



Christina Fitch, DO Baystate Geriatric Medicine



Colleen Foley, CNP Baystate Neurology



Joel Fuller, PA-C Baystate Emergency Medicine



Margaret Griffith, MD BMP-Northampton Obstetrics and Gynecology



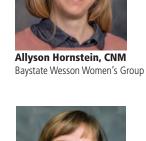
Julie Grondin, CNP **BMP-West Side Adult Medicine**



Cortney Haynes, MD Baystate Mason Square Neighborhood Health Center



Sharon Holley, CNM Chief, Baystate Midwifery





Emily Jackson, CNM Baystate Midwifery & Women's Health



Hamed Jalaeian, MD **Baystate Vascular Services**



Rahul Jawale, MD **Baystate Pathology**



Jeanne Johnson, MD Baystate Noble Primary Care-Feeding Hills



Judith Jorge-Leonard, CNP Baystate Behavioral Health-Griswold Center



Jemimah Jurado, CNP Baystate Newborn Medicine

Ameet Kumar, MD

Baystate Hospital Medicine



Ashley Kennedy, PA-C Baystate Trauma and Acute Care Surgery



Elizabeth LaChapelle, CNP Baystate Hospital Medicine



Arthur King, MD Baystate Noble Primary Care-Southwick

Sophal Lam, CNP

Baystate Wesson Women's Clinic



Erin Koshinsky, CNP Greenfield Family Medicine



Emily Laurenzano, DO Baystate Behavioral Health-Adult Outpatient



Alok Kumar, MD Baystate Behavioral Health-Adult Psychiatric Treatment Unit



Jonathan Lee, MD Baystate Plastic Surgery







Ronald Leombruno, MD BMP-South Hadley Adult Medicine



Jay Levin, MD Baystate Neurology



Sheldon Lyons, MD Cardiology & Internal Medicine Associates



Anita MacDonald, CNP Baystate Hospital Medicine



Danielle Lipoff, DO Baystate Regional Cancer Program, Surgical Oncology



David Maguire, MD Chief Medical Officer, Eastern Region



Alison Little, MD Baystate Newborn Medicine



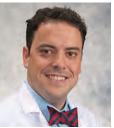
Alexandra Marchetta, MD Baystate Hospital Medicine



Marcelo Montorzi, MD Baystate Noble Primary Care-Westfield



Julia Lustick, MD Baystate Behavioral Health-Adult Psychiatric Treatment Unit



Robert McDonald, MD Baystate Pediatric Hospital Medicine



Megan Miller, MD Baystate Wesson Women's Group



Laxmitejaswi Mittapalli, MD Baystate Hospital Medicine



Baystate Behavioral Health-Adult Psychiatric Treatment Unit





Laura Morris, CNP Baystate Geriatric Medicine



Rehan Mujahid, DO Baystate Hospital Medicine



Ahmed Niloy, MD Baystate Hospital Medicine



Christa Nordstrand, MD BMP-Greenfield Family Medicine



Peters Okonoboh, MD Baystate Critical Care Medicine



Jennifer Orenstein, CNP Baystate Hospital Medicine



Maria Ortega, CNP Baystate Noble Primary Care-Ludlow



Mehdi Pajouh, MD Baystate Cardiology



Keerthana Paladugu, MD Baystate Hospital Medicine



Sandeep Pandey, MD Baystate Hospital Medicine



Raju Panta, MD Baystate Endocrinology & Diabetes









Pamela Paton, CNP Baystate Noble Primary Care-Monson



Baystate Hospital Medicine



Neena Qasba, MD Baystate Wesson Women's Clinic



Ryan Quarles, MD Baystate Hospital Medicine



Denzil Reid, MD Baystate Pulmonary & Critical Care Medicine



Kiersten Revord, PA-C BMP-Valley Orthopedic Surgery and Sports Medicine



Baystate Behavioral Health-Adult Psychiatric Treatment Unit



William Rockett, MD Baystate General Surgery



Anthony Rousou, MD Baystate Cardiac Surgery



Caeli Russell, PA-C Baystate Emergency Medicine



Edward Ryter, MD BMP-South Hadley Adult Medicine



Erin Salvador, MD Baystate Geriatric Medicine



Ghanshyambhai Savani, MD Baystate Hospital Medicine



Hans Schlecht, MD Baystate Infectious Disease



Linda Schoonover, MD BMP-Wilbraham Adult Medicine



Fitzgerald Shepherd, MD Baystate Hospital Medicine

Katelyn Smithling, MD

Baystate Urogynecology



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Meghan Sperry, CNM

Women's Evaluation &

Treatment Unit



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Aaron Stupple, MD Baystate Hospital Medicine



Russell Smith, PA-C Baystate Newborn Medicine



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Alethia Swanson, CNM Women's Evaluation & Treatment Unit



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Ehan Anna Wei, CNM Baystate Midwifery & Women's Health



Wai Chung Yong, MD BMP-Greenfield Family Medicine



Amanda Westlake, MD

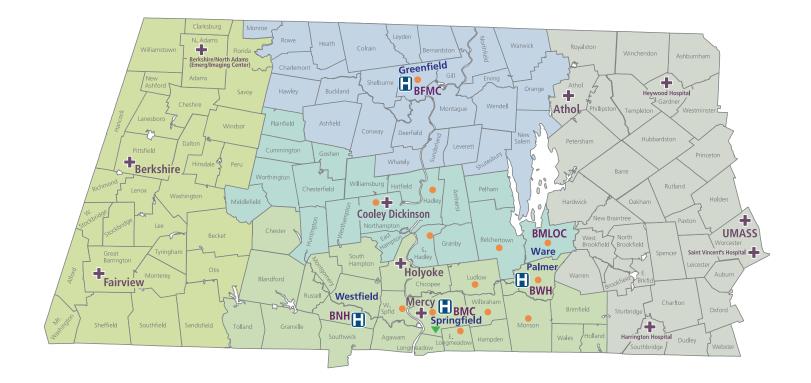
Neighborhood Health Center

Baystate Mason Square

Daniel Zenevitch, PA-C Baystate Neurosurgery

AS OF DECEMBER 2017

Baystate Health Service Area



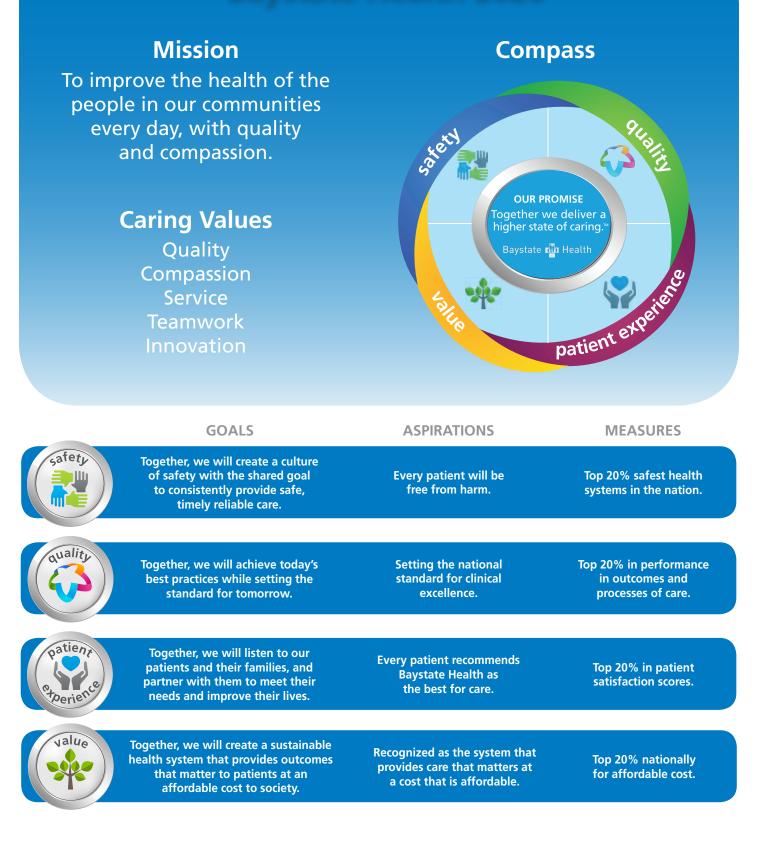
- Baystate Franklin Medical Center (BFMC) Greenfield Baystate Medical Center (BMC) - Springfield Baystate Noble Hospital (BNH) - Westfield Baystate Wing Hospital (BWH) - Palmer
- Baystate Home Health
- Non-Baystate Hospital
- Baystate Medical Practices Baystate Mary Lane Outpatient Center



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