

## Self Study

Department of Family Medicine and Community Health  
University of Massachusetts/UMass Memorial HealthCare

February, 2016



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<sup>1</sup> **Time period covered by the narrative:** Several sections make reference to the “review period;” when this is utilized, it refers to the past 7-8 years, given that our last external review was in 2008. In some instances, many years of background are covered in order to provide context.

**Redundancy:** There are times when assignment of a topic to one section or another has been arbitrary, and others when the topic bears repeating with a slightly different focus (e.g. discussing resident QI projects that result in a poster presentations at a national meeting in the section related to education and/or scholarship). We have tried to keep redundancy to a minimum, and in many places have provided cross-references.

**Faculty:** Other than those specifically identified as faculty in other departments, all faculty named in the narrative are members of the Department of Family Medicine and Community Health.

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- F. Clinical Services
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<sup>2</sup> See Appendix D for service and leadership, and E for regional and local recognition

## **A. Chair's Letter**

February, 2016

Valerie Gilchrist, MD  
Lloyd Michener, MD  
Carlos Moreno, MD

To the Review Committee:

Welcome to central Massachusetts and to our department. I hope your visit will be as helpful to you as it will be for us.

My department's success comes from the success of its talented faculty. They teach me new things every day, and it's a privilege to serve them. I'm sorry that this brief overview can't provide you with a full list of their talents and accomplishments. I do hope you'll be able to meet as many as possible during your short visit.

Our climate surveys reflect how important it is for the faculty to be part of a mission-driven organization. In preparation for our review, we revised our strategic plan. The robust discussion of its meaning, how it shapes our priorities, and the areas where we fall short are summarized in this self-study.

I appreciate the work of an external reviewer, and I am grateful that you have accepted the invitation to visit us. We look forward to your feedback and advice.

Best regards,

A handwritten signature in black ink, appearing to read 'Dan Lasser', with a stylized flourish at the end.

Dan Lasser, MD, MPH  
Professor and Chair



## B. Introduction

The **University of Massachusetts Medical School** was founded in 1962 to provide affordable, high-quality medical education to state residents and to increase the number of primary care physicians practicing in underserved areas of the state. One of five campuses in the UMass system, the Medical School, which includes the School of Medicine, the Graduate School of Nursing, and the Graduate School of Biomedical Sciences, is the Commonwealth's first and only public academic health sciences center. The Medical School is committed to training in the full range of medical disciplines, with an emphasis on practice in the primary care specialties, in the public sector and in underserved areas of Massachusetts. It has consistently been recognized for its excellence in primary care education. It graduated its first class in 1974.

The Medical School is also a world-class research institution, consistently producing noteworthy advances in clinical and basic research. Its basic science faculty have made pivotal advances in HIV, cancer, diabetes, infectious disease, and in understanding the molecular basis of disease. The Medical School's research programs are central to the Massachusetts Life Sciences Initiative, with major funding from the \$1 billion Massachusetts Life Sciences Bill signed into law in 2008.

The **UMass Memorial Health Care System** is the academic health care system partner of the Medical School. Commonly referred to as the "clinical system," its organizational structure currently includes the UMass Memorial Medical Group (the faculty practice plan, with approximately 1100 members), UMass Memorial Medical Center (with two inpatient campuses and one outpatient hospital facility in Worcester), and three member hospitals across central Massachusetts. Within the UMass Memorial Medical Group, clinical faculty who are actively involved in the department's activities report up through the department; there is also a community practice division, the Community Medical Group, which employs Family Physicians who work in community-based practices.

The clinical system's mission is to provide leadership and innovation in seamless health care delivery, education and research, all of which are designed to provide exceptional value to its patients. Much of its health care contracting is achieved through its Managed Care Network, and in 2015 it established a Medicare Shared Savings Accountable Care Organization.

The **Department of Family Medicine and Community Health** is a clinical and academic department based within both parent entities, with clinical faculty employed within the UMass Memorial Medical Group, while research-oriented nonclinical faculty are employed by the medical school. The Chair reports to both the clinical system CEO and to the Dean. The department and its Worcester Family Practice residency was one of the first departments to be established at the Medical School. Its structure operationalized the school's original mission statement, focusing on training across a variety of community settings reflecting the health care needs of the Commonwealth, with an emphasis on care to vulnerable populations. It graduated its first residents in 1976.

### The Chair

In 1998, Daniel Lasser, MD, MPH was appointed as Chair. Dr. Lasser attended a public university and medical school (SUNY at Buffalo), and completed his residency training in public hospitals (Erie County Medical Center, Buffalo, and Hennepin County Medical Center, Minneapolis). After a year in a rural National Health Service Corps practice in the Berkshires, he was promoted into a new position in HRSA's Region I office devoted to providing clinical leadership to the network of NHSC clinicians across New England. Shortly thereafter (1979), he was recruited to UMass as Director of the Worcester Family Practice residency, with a clinical practice at the Family Health and Social Service Center, one of the program's training sites. In 1986 he

took a sabbatical devoted to the one year MPH in Health Policy and Management at the Harvard School of Public Health, continuing his clinical practice at FHSSC, and on return from sabbatical, he served as Medical Director at the Health Center for two years.

In 1989, he was recruited to the Family Medicine Department at SUNY Buffalo, charged with developing a new urban track for the department at the Erie County Medical Center. In 1991, he was recruited back to Worcester as Chair of the Family Medicine Department at Worcester Memorial Hospital, which at the time was a large teaching hospital affiliated with the medical school, and which was home for most of the resources that made up the Worcester Family Practice residency. In the 1998 merger between Memorial Hospital and UMass Medical Center, he was one of three Chairs from the Memorial side of the merger who were appointed as Chair of one of the new combined departments.

In addition to serving as Chair, he has taken on leadership roles outside the department. He has chaired the UMass Memorial Medical Group Board Finance Committee since 2002. In 2003, recognizing the medical school's growing commitment to health care for vulnerable populations, he was appointed Associate Dean for Commonwealth Medicine, charged with serving as a formal link between Commonwealth Medicine and the medical school's academic departments.

In 2005, UMass Memorial Health Care CEO John O'Brien asked him to serve as UMass Memorial's Senior Vice President for Primary Care, bringing together the leadership from primary care across the system and the Medical School in a Center for the Advancement of Primary Care. In 2007, Mr. O'Brien asked him to serve as interim President of UMass Memorial Medical Group, a position he held for over three years.

He has always practiced in a Community Health Center setting: in the NHSC, at the Family Health and Social Service Center (for ten years, including two as its Medical Director), at Buffalo's Erie County Medical Center, and since 1991, at the Great Brook Valley Health Center (renamed the Edward Kennedy Health Center in 2010).

### **The Department's Strategic Plan**

When he was appointed as Chair in 1998, Dr. Lasser initiated a department-wide strategic planning process, which included a robust discussion of what it means to be committed to both Family Medicine and Community Health (see G. Community Health). In 2008, the department underwent an external review, and immediately after the review, we revised the strategic plan. In preparation for this 2016 review, we engaged in this self-study, which has included an update of the plan. In the discussions about vision, mission and values, we recognized that:

- A health care system with a strong primary care base delivers the highest quality, the lowest cost, and the greatest equity;
- Family Medicine is the largest, most geographically distributed, and most well developed primary care specialty, based on trusting, long-term doctor-patient relationships;
- The principles of Community Health complement those of Family Medicine, providing an understanding of the communities in which our patients and their families reside, the impact of communities on health, and the importance of advocacy for those who are most at risk; and
- The combined impact of Family Medicine, Community Health, and integrated Behavioral Health – the biopsychosocial approach – is a powerful model upon which to base the health system.

Based on the above, we developed a common vision, mission, and set of values that guide how we execute our strategic goals:

### **Our Vision:**

*Healthy people, families, and communities – with equal access for all*



### **Our Mission:**

*We pioneer novel approaches devoted to clinical care, medical and health professions education, research and health policy in Family Medicine and in Community Health, with a commitment to the health of populations who are most at risk.*

*We foster partnership and collaboration to enhance and spread innovations that improve health and promote access for all.*

### **Our Values:**

*Bringing several related disciplines together, we support a diverse, creative faculty with skills ranging from health policy to clinical care. We support their professional development, and we are committed to the improvement of their work life. We provide environments where they collaborate with each other, with learners, with teams, and with their patients, thinking outside traditional comfort zones and generating effective change. We serve as a catalyst to find solutions to complicated problems as we advocate for our patients and their communities, for rational transformation of the health care system, and for equal access for all.*

The plan includes a high level goal for each of five areas related to the mission – **organization and culture, research and scholarship, education, clinical services, and community health**. The five sections that follow examine how we are doing in each of these areas, particularly focused on the interval since our 2008 external review. It also includes a section devoted to finances and administration.

### **The Vice Chairs**

**Robert A. Baldor, MD** received his MD (1983) from the University of Vermont College of Medicine. He completed his Family Medicine residency training in the UMass Worcester/Hahnemann Family Health Center program. Following completion of his residency, he served three years with the Indian Health Service on the Mescalero Apache Reservation, in New Mexico. He joined the department in 1989, was appointed Associate Professor in 1994 and as Professor in 2001.

Dr. Baldor serves as Senior Vice Chair, representing the department for the Chair, and taking primary responsibility for all activities related to education, faculty appointments and promotions, awards, faculty development, faculty investments, and strategic planning for the department's Title VII proposals. He serves the Medical School's Office of Medical Education as Director of Community Based Education, and as Director of Health Policy Education at the Meyers Primary Care Institute. He chaired the Medical School's Educational Policy Committee from 2002-12, which included several years devoted to a complete revision of the Medical School curriculum under his leadership.

He has clinical expertise in caring for individuals with intellectual and developmental disabilities. He serves as Medical Director of the Center for Developmental Disabilities Evaluation and Research at the Eunice Kennedy Shriver Center. To assist with providing comprehensive care to previously institutionalized individuals, he works closely with the UMass Department of Psychiatry to develop a specialized 'Medical Home' that links community-based care management with integrated behavioral and mental health primary care.

Dr. Baldor has been the PI on multiple funded Title VII training grants and has been published in the *Journal of Family Practice*, *Family Medicine Review*, and the *Journal of Clinical Outcomes*. He is the author of the textbook *Managed Care made Simple*, the editor for *Bratton's Family Medicine Board Review* and an assistant editor for *The 5-Minute Clinical Consult*. He maintains an extensive lecturing schedule on a variety of topics in clinical evidenced-based family medicine and remains involved in the Massachusetts medical community as a Past-President of the Massachusetts Academy of Family Physicians.

**Dennis M. Dimitri, MD** attended Clark University and received his MD at George Washington University School of Medicine and Health Sciences (1979). He completed his Family Medicine residency training in the UMass Worcester/Hahnemann Family Health Center program.

He serves as Vice Chair for Clinical Services, with responsibility for all clinical services delivered in the department with an emphasis on quality improvement, and practice innovation and redesign. Before joining the department in his current role in 2006, he was in private practice in Worcester for over 20 years. During that time, he served as the first Chief of Family Practice at Worcester Hahnemann Hospital and as Vice President of the medical staff. He served in several leadership roles in medical management, including Medical Director of the Montachusett Health Plan (an early HMO), Associate Medical Director for the Blue Cross of Massachusetts Central Region, and President of the Memorial Hospital PHO Board of Directors. After the merger of UMass and Memorial Hospitals in 1998, he served as the first chair of the newly-organized UMass Memorial Healthcare Managed Care Contract Committee.

He has been a leader in the community as a member of the Boards of Trustees for Memorial Healthcare, UMassMemorial Healthcare and Clark University. Dr. Dimitri has previously been appointed to serve on the Massachusetts Medicaid Delivery Model Advisory Committee, the Massachusetts Executive Office of Health and Human Services Patient Centered Medical Home Pilot Coordinating Council, and the Massachusetts Healthcare Workforce Advisory Council.

Dr. Dimitri has a long history of leadership in organized medicine. He is a Past President of the Massachusetts Academy of Family Physicians and is a Massachusetts delegate to the Congress of Delegates of the AAFP. He has served the Worcester District Medical Society as a member of its Executive Committee, and as Chair of its Legislative Committee. He has been a member of the Massachusetts Medical Society's House of Delegates since 1989, and is currently President of the Medical Society. He has served on numerous MMS committees with emphasis on issues of advocacy, legislation and regulation, and physician workforce.

He was appointed Assistant Professor in 1986 and as Associate Professor in 2011. He received the Society of Teachers of Family Medicine's 2015 Advocate Award at their annual meeting in Orlando.

**Warren Ferguson, MD** is a graduate of Boston University School of Medicine (1981) and completed his Family Medicine residency at the Maine-Dartmouth Family Medicine Residency. He was a National Health Service Corps Scholar, serving at the Greater Lawrence (Massachusetts) Family Health Center, where he was appointed Medical Director two years following residency. In 1989, he was recruited to Worcester as Medical Director and later Vice President of Medical Services at the Family Health Center of Worcester, the department's longstanding CHC partner. Under his clinical leadership, the health center moved its base of operations to Worcester City Hospital, which closed and transformed its outpatient clinic to become part of the community health center.

In 1999, he was appointed as the department's Associate Chair for Commonwealth Medicine, serving as a liaison with the public policy and consulting division of the medical school. His academic career has centered on achieving health equity among vulnerable populations. He has developed curricula on cultural competence spanning every element of medical education. He has conducted quality improvement research focused on language services for limited-English speaking patients, chronic illness care research with interventions by community health workers, and policy studies on the underserved clinician workforce. He was appointed Vice Chair for Community Health in 2004, as Associate Professor in 2004, and Professor in 2012.

In 2002, Dr. Ferguson took on a new challenge, assisting the medical school in the development of a comprehensive medical care program for detainees in the state's prisons, making UMass one of the few academic health science centers engaged in correctional health care, workforce training, and health services research. With funding from NIH and AHRQ, Dr. Ferguson leads a movement to engage academic health science institutions to harness their capabilities to tackle one of the country's most vexing crises through the Academic Consortium on Criminal Justice Health, for which he serves as Board Chair, and its annual Academic & Health Policy Conference on Correctional Health.

Dr. Ferguson also serves as the Medical Director for the MassAHEC Network. He maintains his clinical practice at Family Health Center of Worcester.

He will be a plenary speaker at this year's Annual Spring Conference of the Society of Teachers of Family Medicine, addressing "*A Call to Action: The Role of Academic Family Medicine in the Era of Mass Incarceration*"

**Linda Weinreb, MD** is a graduate of Pennsylvania State University Medical School (1981) and of the University of California-San Francisco Family Medicine residency. She began her career as Medical Director of the St. Anthony Foundation Clinic in San Francisco, which was portrayed as a model program for homeless families in a 1988 report from the Institute of Medicine. She was recruited to the department in 1987 as Associate Director of the Worcester Family Medicine residency, and after two years she served as the department's Director for Predoctoral education and then as Associate Chair for Community Health.

In 2001, she was appointed Vice Chair for Research, with responsibility for oversight of a core group of faculty researchers, maintaining partnerships and collaborations with faculty in other departments, Divisions and Institutes, and supporting scholarship for clinically-oriented faculty, as well as residents and students. She was appointed Associate Professor in 1991 and as Professor in 2003. From 2005-08, she was appointed as the medical school's inaugural Joy McCann Professor for Women in Medicine, established to reward female physician faculty who have demonstrated leadership in medical education, mentoring, research, patient care, and community service.

For 3 decades, Dr. Weinreb has maintained a clinical practice that focuses on addressing the needs of homeless families. Upon coming to Worcester, she spearheaded a comprehensive health program to address the needs of the community's growing number of homeless families in collaboration with the Family Health Center of Worcester. The Homeless Families Program takes advantage of the health care setting to provide trauma-informed, integrated health, mental health, and support services for this vulnerable group of families and has received considerable national recognition for its innovative model of care.

Dr. Weinreb is a nationally recognized expert on the health and support needs of homeless families, having produced an extensive portfolio of research and publications elucidating the health care needs of homeless and low income families, and of interventions to address these needs. Findings from her research have contributed significantly to the understanding of the health care needs of homeless families and the course of homelessness.

#### **Our Academic Administrator**

**Alan Chuman, MPH, MA** has served as the department's Academic Administrator since 1998, responsible for all administrative, budgetary and human resources matters for the department in both the clinical system and the medical school. He received his graduate degrees from the University of Pittsburgh and started his career as a Research Associate at Rhode Island Health Services Research, a health data consortium in Providence. From 1979-98 he worked in the University of Massachusetts Medical School as Administrator and Associate Director of several primary care training programs which eventually came under the umbrella of the Office of Community Programs. These included the Massachusetts Statewide AHEC Program, the New England AIDS Education and Training Center, and the Generalist Physician Initiative, sponsored by the Robert Wood Johnson Foundation.

In his capacity as a member of the faculty, he has taught in the Patient, Physician and Society first year course on medical interviewing for many years, has served as an Admissions Committee interviewer, and has taught in interclerkships and in the department's global health curriculum. He also was Project Director for a three year HRSA grant on Quality Improvement Curriculum that resulted in a Quality Scholars program at UMass Memorial that continues as an ongoing opportunity for faculty. He was promoted to Assistant Professor in 2001.

### **Significant issues that have arisen since our last external review**

Each section includes discussion of new and ongoing initiatives, programs, and challenges. Of note, some of the more significant issues that have occurred since our last external review include the following:

- In 2011, we conducted the first of a series of biannual faculty climate surveys, and established a series of programs to respond to our findings. These are discussed in (C) Organization and Culture (page 14).
- While we have an established track record for research, we have experienced attrition of our core research faculty. The issue is discussed in depth in (D) Research and Scholarship.
- Over the review period, we have had significant growth in our services and programs devoted to Behavioral Health. These have become a signature for the department, including the development of a Center for Integrated Primary Care (discussed in (E) Education, page 49) and expansion of integrated primary care services (discussed in (F) Clinical Services, page 58).
- In 2012, we experienced a financial crisis. The financial underpinning of our residency practice in Fitchburg collapsed, threatening the viability of the program. The turnaround of the practice is discussed in (F) Clinical Services (page 57).
- We have devoted considerable energy and resources to transformation of our clinical practices. This is discussed in (F) Clinical Services (page 59).
- In addition to our financial crisis in Fitchburg, we have experienced additional negative financial trends, including decreasing core funding from the medical school and the end of several decades of successful funding from HRSA's Title VII training grants. Our response to these trends has required strategies which have re-established the stability of the department's bottom line and provided opportunities for future investment. This is discussed in (H) Department Finances and Administration.

### C. Organization and Culture<sup>3</sup>

**Summary:** We strive to be a “high performance organization.” A 2011 faculty climate survey of the faculty rated the department highly on many of the attributes of high performance. Experiencing an uptick in faculty attrition in 2011-12, we focused on several areas for improvement, and subsequent surveys showed higher ratings. When asked to rate the overall climate of the department on a scale of 1-10, the 2013 survey average score was 7.75, and in 2015 it was 8.15. In particular, the faculty write that they appreciate being part of a mission-driven organization, and express high regard for their colleagues.

A second series of faculty engagement surveys conducted by the UMass Memorial Group focusing on the clinical environment indicate that while department faculty are relatively more engaged than their counterparts in other departments, there is overall dissatisfaction with the operation of hospital clinics and the electronic health record. We have undertaken a series of projects using Lean techniques to make changes in clinic operations; these are discussed in detail in (F) Clinical Services.

We have also focused on succession planning, and will need to continue to do so.

#### **Strategic Plan for Organization and Culture**

**Our 2015 strategic goal for organization and culture:** *We will be a highly functioning academic and clinical department*

**We strive to accomplish this goal by focusing on one overarching strategy:** *The department’s leadership and management infrastructure will be mission-driven, aligning planning and implementation, clarifying expectations, and supporting a culture of innovation and professional growth*

#### **Leadership**

We have no divisions within the department, functioning as a matrixed organization. Faculty are based within geographic sites and/or within programs. A Senior Leadership Team provides strategic leadership, and a larger Leadership Team manages the operation of sites and programs.

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<sup>3</sup> Data in the appendices supporting this section include

Appendix A: **Organization and culture**

Leadership

2015 strategic plan

Organization chart

Faculty by academic rank and location

Faculty rank by gender

Professional development opportunities by gender

Reporting relationships

Medical staff roster

Examples of communication – Monday Memo, Thursday Morning Memo, Community Health Newsletter

Steven Putterman Lecturers

Appendix B: **Climate survey results**

Appendix C: **Metrics**

Core metrics

AAMC Missions Management Tool: Tables 1,4,5

2008-15 Preventive Medicine Graduates – current positions

**Senior Leadership Team:** The Senior Leadership Team (SLT) is charged with providing strategic direction to the department, including setting priorities, overseeing the development of the budget and the faculty compensation plan, and assuring integration of activities across the missions. It is staffed by our Administrative Manager, Melissa McLaughlin. Its members include:

Daniel Lasser, MD, MPH	Chair
Robert Baldor, MD	Senior Vice Chair
Alan Chuman, MPH	Academic Administrator
Dennis Dimitri, MD	Vice Chair for Clinical Services
Warren Ferguson, MD	Vice Chair for Community Health
David Gilchrist, MD	Medical Director, Hahnemann Family Health Center
Stacy Potts, MD, MEd	Director, Worcester Family Medicine Residency
Linda Weinreb, MD	Vice Chair for Research

**Leadership Team:** The senior leadership is joined by several additional leaders who have primary responsibility for departmental operations, meeting monthly as a Leadership Team to offer input, serve as a sounding board, and participate in decision-making with the SLT. The Leadership Team discusses and resolves resource issues, provides communication regarding critical issues to and from department sites and major programs, tests and modifies key communications, and identifies cross-departmental themes and issues. The Leadership Team manages urgent and important projects, problem-solving issues that impact delivery or effectiveness (issues that affect visibility, vulnerability or liability). Periodically, the group reviews a set of core metrics (included in Appendix C) to evaluate the status of activities in each mission area.

In addition to the SLT members, the Leadership Team includes:

Katharine Barnard, MD	Medical Director, Plumley Village Health Services
Thomas Byrne, MD, CPE	Chief Medical Officer and Vice President of Provider Services, Family Health Center of Worcester
Joseph DiFranza, MD	Medical Director, Benedict Family Medicine Services
Frank Domino, MD	Director, Pre-doctoral Medical Education
Stephen Earls, MD	Medical Director/Education Director, Barre Family Health Center
Beth Koester, MD	Chief of Service, Family Medicine Hospitalist Division
James Ledwith, MD	Director, Fitchburg Family Medicine Residency
Beth Mazyck, MD	Medical Director, HealthAlliance Fitchburg Family Practice
David Polakoff, MD, MSc	Director, Center for Health Policy & Research, Chief Medical Officer and Associate Dean, Commonwealth Medicine
Christine Runyan, PhD	Director, Post-Doctoral Fellowship in Primary Care Psychology
Herb Stevenson, MD	Director, Sports Medicine Fellowship

Additional faculty hold leadership, management and administrative responsibilities within sites and programs, as well as at affiliated sites. The entire list is included in Appendix A-1.

**High performance:** For many years, Dr. Lasser and the Senior Leadership Team have worked with Rose Swensen, MBA, a management consultant skilled in strategic planning, organizational development, and leadership coaching/leadership team development, who has provided coaching and guidance focused on functioning as a high performance organization. In addition to meeting regularly with the Chair, she has met periodically with both the SLT and the Leadership Team. Discussion has focused on the goal of developing the department and its programs as “destination” programs which are highly attractive and which foster retention. She has also worked with and has provided workshops and one-on-one consultation with individual leaders, faculty groups, sites, and individual faculty.

### **Key relationships with other Departments, Centers and Organizations**

Relationships with other departments, centers, and organizations are discussed in depth in each of the sections devoted to the mission areas. A few are of particular note:

**Family Health Center of Worcester:** The department has partnered with Family Health Center of Worcester (FHC/W) since the early 1970s. A Federally Qualified Health Center (previously named Family Health and Social Service Center), FHC/W has been one of three residency sites within the Worcester Family Medicine residency since the start of the program. Family Physicians at the Center are full participants in the academic activities of the department, and selected faculty serve in key leadership and administrative positions within the department and the Medical School. The Center now sponsors a Nurse Practitioner residency program, and sponsors and provides leadership to Fellowships in HIV/Hepatitis C, and in Global Health.

The financial relationship between the department and the Center is managed through an agreement that supports academic work at the Center, including provisions to support salary increases for faculty who have achieved academic promotion.

The relationship between the department and the health center has attained national recognition as a model of an academic/service collaboration devoted to the dual missions of serving an underserved community and training the next generation of physicians to work in these settings. 44% of the residency's graduates from this track have gone on to work in similar settings, citing faculty role modeling and a multidisciplinary team approach to care as strong influences in their decision-making.

**Centers:** Three UMass Centers derive their leadership from, and impact work within the department:

- The **UMass Community Faculty Development Center** promotes excellence in learner-centered teaching and patient-centered practice by advancing the teaching and communication skills of clinicians and promoting the professional development of clinical educators. The Center was created with initial support from HRAS's Title VII Faculty Development program, and now provides services for both UMass and outside organizations providing medical education. Its faculty are drawn primarily from the Departments of Family Medicine and Community Health, Pediatrics, and Internal Medicine. Its funding is derived from grants, contracts, and direct departmental support. Its Director is Scott Wellman, MD.
- The **UMass Center for Integrated Primary Care** was established in 2011 to develop and disseminate skills for best practices in Integrated Primary Care (IPC). It is described in detail in (B) Education. It was founded by Alexander (Sandy) Blount, EdD; its current Director is Daniel Mullin, PsyD.
- The **UMass Center for the Advancement of Primary Care** provides a single focal point for primary care for both the medical school and UMass Memorial Health Care. Dr. Lasser has served as its leader; it is described in (F) Clinical Services.

**Greater Lawrence Family Health Center:** This Federally Qualified Health Center provides care for a major percentage of the population of the City of Lawrence, MA, and is the only FQHC in the country to sponsor its own Family Medicine Residency program. It also hosts one of the six regional AHEC sites that comprise the Massachusetts AHEC Network. The department maintains an affiliation with the Center and its residency, granting UMass faculty appointments, providing access through the department to the UMass IRB, and including their faculty in our retreats, programs, etc. They host our medical students in several courses, including the third year Family Medicine clerkship, and their residents occasionally partake of UMass electives.

**Commonwealth Medicine:** The department enjoys a strong working relationship with Commonwealth Medicine, the health care consulting division of the medical school. Established in 1999, Commonwealth Medicine employs a public university-state agency model of collaboration to improve outcomes while controlling costs, especially for publicly funded populations. CWM employs more than 2,500 individuals and uses innovative strategies focused on health care reform, financing, care management and service delivery. Approximately 35 faculty based in CWM have faculty appointments in the department, with several department-employed faculty embedded in CWM programs. The relationship is discussed in detail in (G) Community Health (page 68).

## **The Faculty**

On December 1, 2015, there was a total of 460 faculty appointed in the department (including all appointments, from volunteer and adjunct appointments and instructors to full professors) working across a variety of settings:

- 78 were directly employed by the department, based at the Barre Family Health Center, Benedict Family Medicine, Fitchburg Family Medicine, Hahnemann Family Health Center, Plumley Village Family Medicine Services, South 6 on the Memorial campus (hospitalists), as well as a few faculty based within outreach locations. Administrative and research offices are on the University campus on the third floor of the Benedict Building;
- 42 were based at three federally qualified Community Health Centers (Family Health Center of Worcester, Edward M Kennedy Community Health Center, and the Greater Lawrence Family Health Center);
- 35 were based within Commonwealth Medicine, UMass Medical School's health care consulting division serving government agencies, nonprofits, and managed care organizations;
- 30 based within UMass Memorial Medical Group's community-based division, the Community Medical Group; and
- 275 additional faculty at locations across central Massachusetts and the Commonwealth. The roster includes private physicians on the medical staff, Family Physicians across the state who host medical students in their offices, physicians who teach residents and fellows, health care professionals and leaders in community agencies, and many others who contribute to the department's programs.

**Faculty list:** The table in Appendix A-4 listing individuals with active appointments to the faculty as of December 1, 2015 includes faculty who are based in the department, at Family Health Center of Worcester, and within Commonwealth Medicine. It also includes a faculty roster from the Greater Lawrence Family Medicine Residency. It excludes other voluntary faculty and adjunct faculty.

**Recruitment and Retention:** We track faculty attrition in categories including salaried faculty, Hospitalist faculty, Family Health Center of Worcester, and Community Medical Group. A graphic representation is provided in our core metrics in Appendix C. Since the faculty are based in several different locations, we have monitored absolute numbers, without calculating attrition rates.

Attrition was remarkably low from 2000-2008 (three or less per year), followed by an increase starting in 2009-10 and peaking in 2012. As attrition increased, we instituted formal exit interviews conducted by a neutral party, categorizing departures according to a series of reasons for leaving. From 1999 through 2015, a 16-year period, 80 faculty left their position: 48 salaried, 8 Hospitalists, 12 from Family Health Center of Worcester, and 8 from the Community Medical Group. Of this 80, 9 made a "lateral move" to another position within the UMass Memorial/UMass Medical School community. Our best assessment of the reasons that the remaining 71 left includes:

- Retirement (6)
- Job elimination (3)
- Asked to leave (3)
- Left for additional education (1)
- Had started work here with a short term commitment (2)
- Personal circumstances (17)
- Unhappy here (11)
- Left for an opportunity not available here (19)
- Unknown (9)



We also conducted our first faculty climate survey in 2011, and developed a series of interventions based on the findings (described below).

**Leadership:** During the review period, we have had turnover in four leadership positions:

- The Medical Directorship at the Hahnemann Family Health Center opened up when Gerry Gleich, MD, stepped down as Medical Director. A full search was conducted, and in 2013, David Gilchrist, MD, a 2009 residency graduate who had joined the faculty at the health center, was appointed to the position.
- The Medical Directorship at the Fitchburg Family Practice site opened as we were reconfiguring the practice in 2015. An expedited search was undertaken, and Beth Mazyck, MD was asked to take the position. The transition of the practice and its leadership is described in detail in (F) Clinical Services.
- The Medical Directorship in the Benedict practice went through a transition in 2012 when Dr. Michael Reyes left the position to take a position within the UMass Memorial Community Medical Group. After a search, he was succeeded by Joe DiFranza, MD, a senior researcher in the department.
- Thomas Byrne, MD was recruited in 2015 through a national search as Chief Medical Officer at Family Health Center of Worcester after Interim Medical Greg Culley, MD stepped down. His past experience included service in the Navy as a staff physician and residency faculty member at the Bremerton Naval Hospital's Family Medicine Residency, eight years as a staff physician at DFD Russell Medical Center in Lewiston, ME, service on the faculty at Central Maine Medical Center's Family Medicine residency (where he also served as the Department Chair), service as Family Medicine Chair at Southern New Hampshire Medical Center in Nashua, and three years as Medical Director for Hallmark Health Medical Associates, based in Woburn, MA.

In 2015, 2 women faculty leaders comprised 25% of the department's Senior Leadership Team of 8 faculty leaders. 6 women faculty leaders comprised 31.5% of the department's full Leadership Team.

**Faculty race/ethnicity:** A lack of racial diversity has been a problem for the medical school, as noted in its last LCME accreditation review. One issue that has been identified is the lack of a professional community for African Americans in the greater Worcester area. Within the department, the number of minority faculty, particularly African American, has remained exceedingly small. At this writing, two salaried faculty are African-American, both joining the faculty this year.

The medical school has developed several initiatives to assist with recruiting underrepresented minorities. One such initiative was the Faculty Diversity Scholars Program which we utilized in the mentorship and development of the research career of Dr. Chyke Doubeni (who has since been recruited to Philadelphia where he is now the Chair of the Department of Family Medicine & Community Health at the Perelman School of Medicine at the University of Pennsylvania). Additionally, all faculty positions are posted on Academic Jobs Online, a national academic job site, and are held open for a minimum of 90 days to allow for a diverse pool of external applicants to apply.

**Succession planning:** Work to develop the leadership skills of the faculty has resulted in several layers of leadership and administrative responsibilities. The Leadership Team reviewed principles related to succession planning and faculty retention at its Spring, 2012 retreat, and developed a list of action items for each leader, each site, and for the department. Having worked at this, we are aware that there is always more work to be done. In 2014, Dr. Bob Baldor was appointed as Senior Vice Chair to provide clarity regarding decision-making in the absence of the Chair, and Drs. Stacy Potts and David Gilchrist were asked to join the Senior Leadership Team, bringing younger leaders and another woman to the group.

### **Communication:**

We are geographically distributed across central Massachusetts, working at sites focusing on specific programs or services. Each program and health center establishes its own processes for communication and for conducting business. Communication by the leadership across the whole department is accomplished in a variety of ways:

- The department maintains a **listserv** for all faculty, residents, fellows, and staff. Residency graduates also remain on the listserv. It is used for a variety of purposes, ranging from announcements to discussion of topics of interest.
- The **Monday Memo** is a weekly post on the listserv enumerating faculty presentations, publications, new grants, awards and events of interest. Each Monday Memo is archived on the department's website.
- Faculty member Hugh Silk, MD organizes a weekly online **Thursday Morning Memo**, which features brief essays, poems, and other reflections on the doctor-patient relationship. These are also archived on the department's website.
- The department hosts an **annual faculty dinner** in October, devoted to introductions of new faculty, review of department metrics and major accomplishments of the past year, and recognition of academic promotions and of recipients of teaching and Chairs' awards. In conjunction with the meeting, the department produces an **Annual Report** which summarizes events of the past year, lists new faculty, and celebrates academic promotions and awards. The Annual Report is posted on the department's website.
- The department maintains its **web page on the internet**, which is used primarily for recruitment purposes. It has a "Faculty Resources" tab, which provides information and guidelines regarding academic appointments and promotions, applications for requesting support for research or professional development, guidance regarding IRB applications, and links to web pages for the Center for Integrated Primary Care and for the Community Faculty Development Center. The department also maintains a **web page on the medical school library's intranet**, which is restricted to faculty members. It serves as home for a variety of reference materials, as well as newsletters, minutes from Leadership Team meetings, archives of the Monday and Thursday Morning Memos, the Annual Report, and a series of materials from the Worcester Family Medicine residency.
- The department holds **business meetings** twice each year. Typical agendas include a review of the budget, the compensation plan, and major department or system initiatives.
- The Chair, Academic Administrator, and Vice Chairs join **faculty meetings** at each site (Benedict, Hahnemann, Plumley Village, Family Health Center of Worcester, Fitchburg, Hospitalists and Commonwealth Medicine) 3-4 times each year.
- In 2012, Dr. Lasser established a **Chair's Advisory Group**, referred to as his "Kitchen Cabinet". This group of junior faculty from across the department meets with him 3-4 times each year, providing a sounding board for faculty to interact directly with the Chair, and to give him a better sense of the issues that are of particular importance to the faculty. Membership in the Advisory Group rotates annually.
- The department sponsors two **faculty retreats** each year, scheduled from noon Friday through noon Saturday. Topics vary, dependent on needs assessments and evaluations of past programs. The agendas provide unscheduled time to allow faculty from across the department to connect with each other.
- The department utilizes a **videoconferencing system** for many educational and administrative workshops and meetings. Some events, including our weekly Grand Rounds and monthly Research Forum are webcast as well.
- The department sponsors three **orientation breakfasts for new faculty** in their first year, focusing on topics ranging from basic information about common logistical issues to beginning to think about the process toward academic promotion.
- The department sponsors an annual lecture devoted to the memory of Steven Putterman, MD, Associate Director of the Worcester Family Medicine residency, who died in a plane crash in Tanzania in 1999. **The Steven L. Putterman Memorial Lecture** focuses on a broad topic that reinforces the interplay between the disciplines of Family Medicine and Community Health. Author and Family Physician David Loxterkamp, MD of Belfast, ME delivered the 2015 Lecture, *The Once and Future Family Medicine: A Minority Report*. A complete list of the department's Putterman Lecturers is in Appendix A-10.

Department meetings that bring faculty together to focus on clinical issues (weekly Grand Rounds, monthly Morbidity & Mortality conferences, annual Maintenance of Certification workshops) are reviewed in (F) Clinical Services.

### **Professional and Faculty Development**

**Academic Development Committee:** The Senior Leadership Team is joined monthly by Judy Steinberg, MD, Deputy Chief Medical Officer for Commonwealth Medicine, to serve as an Academic Development Committee. The group is responsible for planning, managing and coordinating programs to support the professional growth of the faculty including department retreats, the annual department faculty dinner, mentorship, new faculty breakfasts, faculty development initiatives, and solicitation of nominees for awards. The Committee also systematically reviews faculty progress toward promotion, and actively assigns mentors to faculty who are nearing eligibility for promotion. It tracks faculty status by gender:

- A 2015 snapshot of faculty who are directly employed by the department, based at the Family Health Center of Worcester (FHC/W), and based within Commonwealth Medicine (CWM) categorized by gender and faculty rank:

	Dept-Employed		FHC/W		CWM	
	Men	Women	Men	Women	Men	Women
<b>Professor</b>	8	4	0	2	2	0
<b>Assoc. Prof</b>	9	6	0	2	1	4
<b>Asst. Prof</b>	20	22	2	12	5	9
<b>Instructor</b>	0	7	0	8	4	9
<b>Total</b>	37	39	2	24	12	22

- A comparison between 2008 and 2015, focused on department-employed faculty:

Department-Employed Faculty 2008 through 2015				
	Men-2008	Men-2015	Women-2008	Women-2015
<b>Professor</b>	7	8	1	4
<b>Assoc. Prof</b>	10	9	5	6
<b>Asst. Prof</b>	20	20	22	22
<b>Total</b>	37	37	28	32

Each year, the Academic Development Committee facilitates faculty participation in a variety of professional and faculty development programs, including the following (tracked by gender, as noted in C-5):

- **The Physician Leadership Development Program** is a one year professional development opportunity offered through the UMass Memorial Medical Group.
- The **Quality Scholars Program** originated in a 2007-2010 project funded by a HRSA Title VII "Administrative Units" grant devoted to developing a cadre of faculty with expertise in Quality Improvement. While it was initially focused on the primary care departments, it was institutionalized within the clinical system at the end of its grant support and now attracts participants from both primary care and specialty departments. Many Quality Scholar graduates continue to play a role in their sites in the teaching of residents and development of quality improvements projects.
- The department established a formal **mentorship program** (described below); while participation is voluntary, we have suggested or facilitated the establishment of mentorship relationships for several faculty.

- Each year the medical school's Office of Faculty Affairs solicits nominations for women faculty to attend the **AAMC Early Career or Mid-Career Women Faculty Professional Development Seminars**, and we have encouraged, nominated, and supported two faculty to attend since 2009.
- The Medical School Office of Faculty Affairs initiated a **Junior Faculty Development Program** in 2011; one faculty member completed the program in its first year, and one faculty member is in the current program.
- **Teachers of Tomorrow (TOT)** is a nationally recognized and highly acclaimed faculty development program for preceptors from primary care departments at medical schools across New England and eastern New York. First offered in 1994 with HRSA Title VII support, the program now includes two weekend workshops provided by faculty from the UMass Clinical Faculty Development Center (CFDC), which is administered from our department, and includes faculty from the Departments of Family Medicine and Community Health, Internal Medicine and Pediatrics. Track 1 provides an introduction to teaching in the clinical setting, and is offered to all new faculty. Track 2 provides an advanced program for faculty who wish to deepen their knowledge and skills in teaching and learning.

The Committee also seeks out faculty to nominate for awards that support professional development or that recognize achievements, systematically reviewing a list of internal and external opportunities that range from local to national recognition.

**Support for individual professional development activities:** Contingent on the availability of funding, the department supports a limited number of faculty to devote time to short term projects or professional development activities (typically 20-40% effort over 1-3 years) that align individual goals with the department's strategic plan. A formal application on the department's website calls for discussion with faculty supervisors, assignment of a mentor, and sponsorship by a member of the department's Senior Leadership Team. Decisions regarding support and ongoing oversight are made by the SLT. In the past, the department has supported a variety of projects, which have included time and support for selected faculty to pursue Masters-level training, or advanced clinical training. Support has been provided to develop early research activities that may lead to ongoing external funding, as well as for time commitments devoted to advocacy or working within organized medicine (such as the Massachusetts Academy of Family Physicians or the Massachusetts Medical Society).

**Annual faculty reviews:** The department uses the medical school's annual faculty review process as an opportunity for each faculty member to summarize accomplishments of the past year, to review progress toward goals that were set in the previous year, and to establish new goals for the upcoming year. A reporting structure indicates which supervisor is to conduct each review, and the forms are reviewed by the Chair and Vice Chairs, providing written commentaries which are returned to the faculty. Mid year reviews are encouraged.

### **Climate surveys**

In 2011, two separate faculty climate surveys were initiated, one by the department and the second by the UMass Memorial Medical Group.

**Department climate survey focused on measures of high performance:** With the assistance of management consultant Rose Swensen, MBA, the department conducted its first climate survey based on the attributes of a "high performance organization." The results of the 2011 surveys were discussed at open faculty meetings and at a department retreat. Overall, we felt that the department's high performance ratings were good. Faculty indicated that features that were most satisfying about the department included opportunities for collaboration, high regard for colleagues who share their passion for Family Medicine, the opportunity to do work that is mission-drive and to have an impact on the community, the ability to work on health reform policy, the ability to teach students and residents, being part of a vibrant community on the leading edge, and working in a supportive environment.

Feedback from the initial survey suggested several areas for improvement. Features that were ranked lower included the impact of geographic dispersion of the faculty (leading to a lack of connection), a lack of mentoring, a lack of understanding regarding decision-making, and problems understanding the system for promotions. There were also concerns about increasing financial pressure resulting in shifting emphasis from academic to clinical work, coupled with concerns about levels of support for clinical practice. After discussing the findings of the survey with the faculty, a number of initiatives were undertaken:

- The appointment process for leadership and management positions was formalized, with more use of open processes and fewer administrative decisions.
- Leadership Team minutes were posted on the department's intranet site.
- Dr. Lasser, Mr. Chuman, and one or more Vice Chairs started attending faculty meetings at each site (Hahnemann, Barre, Plumley, Fitchburg, Family Health Center of Worcester, the Benedict Building, the Hospitalists, and Commonwealth Medicine) on a regular basis 3-4 times each year.
- A working group was established to review the faculty compensation plan. The group surveyed the faculty, and found that while there was general satisfaction with the plan, there was a need for greater understanding of its details. Based on their recommendations, we maintained health center-specific group incentives (discussed in more detail in (J) Finances and Administration), and established annual awards for academic excellence. We also established a more formal process for requesting support for individual professional development activities protected time for special projects (discussed above).
- Biannual department-wide business meetings of members of the Medical Group or the entire department were established to review issues affecting the department's budget, including discussion of areas that are cross subsidized with clinical dollars, the details of the faculty compensation plan, and the department's financial challenges and priorities.
- We instituted periodic reviews of issues related to faculty attrition. We started tracking faculty departures as a key department metric, and exit interviews were instituted with departing faculty.
- Dr. Lasser convened his Advisory Group ("Kitchen Cabinet"), comprised of junior faculty, meeting over breakfast or dinner devoted to an agenda developed by the group. In addition to increasing communication and developing relationships between the faculty and the Chair, suggestions from the group have been implemented (such as a request to have the department clarify ambiguities in its policy regarding CME time).
- Drs. Linda Weinreb and Mary Lindholm began hosting periodic social gatherings to support women faculty, included dinners, breakfasts, and most recently, a hike. In general anywhere from 10-20 women faculty participate.
- We look for opportunities to provide discussions of the medical school's academic personnel policies. The topic is now included in first year orientation breakfast meetings for new faculty, and as breakfast roundtable discussions at all faculty retreats.
- In response to a call for mentorship, in 2013 the department launched a formal 18 month program bringing 21 mentor/mentee pairs together, with assistance from the medical school's Office for Faculty Affairs. Elements of the program included orientations, formal mentorship contracts and goal setting, review and feedback regarding goals, required meetings every 4-6 weeks, reporting, and participation in an evaluation process. In many cases, projects were completed; in some, the formal relationship has continued.  
In 2015, the department launched its second cycle of the program for 14 mentor/mentee pairs. The program will operate over another 18 month period and includes an orientation, training sessions, reporting expectations, and an evaluation process.

**2015 high performance survey:** The department repeated its "high performance" survey in 2013 and 2015, with a few questions added in 2015 regarding leadership for purposes of the external review. The results have shown steady improvement in most categories. Appendix B-1 compares the 2011 and 2015 surveys, and includes the narrative comments (Appendix B-2) provided in the 2015 survey. In particular, the department's mentorship program and formal programs related to the promotions process have been

helpful. Several of the ratings also indicate that we are working toward greater transparency in the way we make decisions. There is still work to do to better inform the faculty regarding how we make strategic investments, and there is concern about resources to provide competitive compensation levels. The narrative comments also reflect on the need for leadership from the department and from Family Health Center of Worcester to work together to clarify mixed messages that the faculty receive regarding the expectations of each party.

When asked to rate the overall climate of the department on a scale of 1-10, the 2015 survey average score was 8.15 (in 2011 it was 7.75). The most gratifying data from the survey can be found in the narrative comments. When asked to describe the most satisfying aspect of being a member of the department, the majority of respondents write about the mission, the opportunity to work with vulnerable populations, their high regard and trust of their colleagues ("great colleagues," "inspiring co-workers," "amazing people," etc.).

**UMass Memorial Medical Group engagement surveys focused on the clinical work environment:** The UMass Memorial Medical Group conducted three standardized physician engagement surveys in 2011, 2013, and in November, 2015. Department-specific data from the 2015 survey is included in Appendix B.

In general, levels of engagement across most departments were below national averages, with primary areas of concern including frustration with an array of electronic medical records and with hospital operations, including the operating rooms, the clinics, and patient flow from the Emergency Department. While ratings from the surveys have been higher in our department than in some others, the faculty have indicated that the issues they find most frustrating include the electronic record, IT support, lack of resources to get their work done, staffing, problems with patient scheduling and with managing referrals, slowness of decision-making, and problems with patient flow. In most cases, scores in these areas dropped from 2013 to 2015.

Items that have been ranked higher within the department include measures related to department leadership, access to feedback regarding performance, and service from the Hospital Medicine service, along with satisfaction with reports from pathology, the laboratory, and radiology.

**Introduction of Lean methodologies:** In 2014, the department embarked on a series of projects to utilize Lean methodologies to create process improvements within work settings, particularly within clinical settings. Idea boards have been instituted across work sites, faculty and staff have been trained in Lean, PDCA cycles have been utilized to address a variety of problems, visual management systems are being implemented, and faculty retreats have included gallery walks to demonstrate projects that are underway. Members of the Senior Leadership Team utilized the A3 process to learn about the process and to model it for the faculty. Many of these initiatives have been focused on improvement of clinical practices, and are also discussed in (F) Clinical Services.

**Wellness:** The 2015 revision of our strategic plan for Clinical Services makes a commitment to the quadruple aim. This year, Tina Runyan, PhD and Ginny Van Duyne, MD are leading a department-wide committee charged with adding an active focus on activities or resources at each site to support the personal growth and emotional, physical, and mental well being of the faculty and staff.

### **Challenges/Opportunities**

**Climate:** As we contrast the two climate surveys, we feel that we have done a good job in managing the department as a high performance organization and by actively responding to feedback from the surveys focused on this topic. Our biggest challenges lie in areas where the faculty work within facilities that are managed by the hospital system. As these are clinical venues, this work is discussed in more detail in (F) Clinical Services.

We will also work with the leadership at Family Health Center of Worcester to clarify the messages that their faculty receive regarding the expectations of each entity.

**Succession planning:** This is an area that requires our continued attention. We will utilize a list of ideas that were generated at the Leadership Team's 2012 retreat devoted to succession planning.

## **D. Research and Scholarship**

**Summary:** During the review period, the department had a productive research effort characterized by significant NIH and foundation-supported research, successful collaborations with medical school and external partners, and considerable success for scholarly achievements among education and clinical faculty. Our faculty, residents, fellows and students made considerable contributions to clinical resources, including books, book chapters, online reference materials, etc.

Much of this success was based on investments in core faculty that were made over a decade ago. Attrition in core research faculty, coupled with a lack of investment in new faculty over many years, has led to a smaller group of senior investigators who are now closer to the end of their careers. This trend is coupled with a loss of dedicated medical school support that was once devoted to infrastructure. Without an invigorated approach to investment in and dedicated support for research, these trends will continue. Utilizing department resources as a starting point, along with assistance from the medical school, we are now proposing new initiatives, partnering with our two parent organizations, to address these issues.

### **Strategic Plan for Research**

**Our 2015 strategic goal for research:** *The department will conduct and disseminate prominent and relevant research focused on health promotion, disease prevention and innovative approaches in primary health care, with a particular focus on health disparities.*

**We strive to accomplish this goal by focusing on three strategies:**

- *We will support a core group of research faculty who will conduct research focused on health promotion, disease prevention, and innovative approaches in primary health care*
- *We will enhance our approaches to research collaboration that are bidirectional and responsive to community priorities by working with community practices and partners, Commonwealth Medicine and other departments*
- *We will support an environment for scholarship across the department's residencies and fellowships, and at each of our health centers*

### **Background, and history since the last review:**

In 2000, shortly after Dr. Lasser's appointment as Chair, he appointed Linda Weinreb, MD as Vice Chair for Research. We developed a strategic plan with three areas of focus. It started with a clear definition of the role of our core research faculty as a cadre of skilled PhD and physician investigators who would devote at least 70% of their time to their own funded research; if unfunded, we would support their time to focus on the generation of new proposals for funding. It was not envisioned that these positions would necessarily be tenure track positions, as non-tenure track appointments are typical for faculty in the medical school's clinical departments. The strategic plan called for collaboration with other medical school research units, and for support for scholarship across the department's education and clinical activities. The core group would lead and manage the department's research infrastructure, including encouragement of collaborations and support for scholarship.

The Dean committed funds to develop the department's research, focused on startup recruitment packages for research faculty. In 2003, the department was awarded a Title VII "Establishing Departments of Family

Medicine” grant which supported another startup package for a new core research faculty member, as well as support for selected clinical faculty in development of their own projects, working in collaboration with the core faculty. In addition, a portion of the department’s annual funding from the medical school was devoted to support for research infrastructure.

**PBRN:** In 2009, the Department established a Practice-Based Research Network (PBRN). Registered with the Agency for Healthcare Quality and Research and directed by Drs. Roger Luckmann and Barry Saver, the PBRN had a steering committee including representatives from large and small member practices, as well as members at large. Member practices included over a dozen Family Medicine practices, including four federally qualified health centers, four academic/hospital community health centers, three community-based group practices, and several solo physician practices. Serving over 35,000 patients, the PBRN represented providers caring for a diverse population of patients across the Commonwealth of Massachusetts. Monthly steering committee conference calls provided research updates and ongoing opportunities for members to identify research topics of interest and importance. Semi-annual Department retreats and an email list were utilized to discuss projects and ideas.

In 2010, nine PBRN practices contributed to its first study, *Family Physicians’ Perceptions of Patients’ Health Literacy*, which led to presentations at AHRQ’s annual National Practice Based Research Network conference and at AcademyHealth’s annual research meeting. The PBRN then implemented a second project focused on a systematic assessment of selected patients with chronic pain by behavioral health providers based at the practice sites. Unfortunately, the project encountered numerous implementation challenges, including competition from an enhanced focus on PCMH development and practice transformation, and was terminated. Further development of the PBRN has not been pursued.

**CTSA:** The UMass Center for Clinical and Translational Science (UMCCTS) was founded in 2006 to enhance clinical and translational research across the five University of Massachusetts campuses (Amherst, Boston, Dartmouth, Lowell, UMass Medical School) and at UMass Memorial Health Care. In 2010, the UMCCTS received an NIH Clinical and Translational Science Award (CTSA). The school obtained a successful renewal in 2015.

Development of the community engagement section of the initial proposal in 2008 was led by Drs. Weinreb and Suzanne Cashman. Their planning group developed a series of ideas to stimulate and support community-based research. The NIH asked the medical school to revise its proposal, and leadership for the community engagement section was transferred to Ira Ockene, MD, Director of the Department of Medicine’s Preventive Cardiology Program, with ongoing input from Drs. Cashman and Weinreb. While the final proposal gave some voice to community health and primary care research, the resources devoted to these areas have been limited, with the initiative favoring bench to bedside translation efforts. Dr. Cashman continues to serve on the Leadership group for the UMCCTS and co-directs the Community Engagement Core with Dr. Ockene. Dr. Weinreb also participates on the Community Engagement Steering group.

While the UMCCTS has been successful, the Department’s faculty have not qualified for their career awards or pilot grants, and it has had limited impact on the Department’s research activities.

### **Current Infrastructure for Research**

Our 2015 revision of the strategic plan continues its focus on core research activities, collaborations, and support of an environment for scholarship across the department.

### **Core Research Activities**

Support for our core research activities includes core faculty support, an administrative budget, support for research assistants, and some data management and analysis capacity.

**Research Faculty:** Review of the recruitment and retention of core research faculty requires a long range perspective, as it includes the development of junior faculty (“grow your own”), commitments to collaboration that include medium level investments, and heavier investments to support the recruitment of



mid-level or senior faculty with promising or established research portfolios. As such, the following is a review of the roster of research faculty going back prior to the review period:

- **Linda Weinreb, MD**, Vice Chair for Research, joined the department in 1987 as Associate Residency Director. Over several years, while she focused on a series of early clinical, teaching, and administrative responsibilities, she developed her career as a researcher focused on the health needs of homeless families, as well as the integration of behavioral health services in primary care, especially for women and disadvantaged populations. Her epidemiologic and intervention studies with homeless populations have helped to define the health needs of homeless mothers and children, impacted state and federal policy, and substantially informed clinical practice, program design, and program replication across the country. She has conducted funded research from NIMH, NIAAA, SAMSHA, and the RWJ Foundation. Her current studies include an Oak Foundation funded study to determine the level of coordination between homeless services for families and safety net health care in Boston and a Maternal and Child Health Bureau/HRSA funded study to adapt and test an evidence-based intervention for pregnant women with post-traumatic stress disorder.
- **Roger Luckmann, MD, MPH** is a primary care internist whose research has focused on promoting cancer screening for more than 20 years. With support from NIH, CDC and the Komen Foundation, he has focused on the development and evaluation of innovative, computer-assisted telephone counseling programs for promoting breast and colon cancer screening and for supporting informed decision-making on prostate cancer screening. With recent support from PCORI, he has been collaborating with a group of professional mediators in Massachusetts on designing and implementing a process for developing clinical practice guidelines on prostate and lung cancer screening. Most recently, he has turned his attention to the application of mindfulness and related meditation practices aimed at helping patients cope with chronic pain using alternative therapies. He is currently part-time in the department.
- **Joe DiFranza, MD** has been recognized as one of the most influential people in the fight against tobacco during the last 25 years. A UMass Medical School and Worcester Family Medicine residency graduate, Dr. DiFranza joined the faculty in the Fitchburg Family Medicine residency, where his clinical observations of adolescent smoking behaviors started him on career covering a range of tobacco-related topics including tobacco addiction, the effects of tobacco advertising, tobacco industry public relations programs, and the effects of environmental tobacco smoke. In 1995, he shifted his base to Worcester to concentrate on his research, which included a demonstration of the tobacco industry's deliberate marketing strategies for minors, which formed the basis of successful legal action before the Federal Trade Commission culminating in the end of RJ Reynolds' "Joe Camel" advertising campaign. He has a significant history of funding from the Massachusetts Tobacco Control Program, the RWJ Foundation, the American Cancer Society, NCI, and NIDA. Most recently, after several years of difficulty securing ongoing funding for his research, he has shifted his career focus to clinical leadership as Medical Director of the department's Benedict Family Medicine practice. He still devotes 30% of his time to his research.
- **Carole Upshur, PhD** has over 30 years of research experience areas of education, mental health, disability, and health care. She was recruited to the department in 2001 with a recruitment package. Between 2004-12, she decreased her activities in the department to serve as Associate Dean for a new Clinical & Population Health Research Program in the medical school. She has received funding from the RWJ Foundation, AHRQ, HRSA, NIH, and the US Department of Education. She has studied the prevention of behavior problems in young children enrolled in preschool programs, and currently has a large Department of Education funded classroom RCT investigating an executive functioning and social/emotional development intervention in 64 preschool classrooms in Worcester County. She was recently been funded to conduct a nationally representative epidemiological study of women's alcohol and drug use and co-occurring mental health and health problems among women using Health Care for the Homeless primary care clinics.
- **Robin Clark, PhD** specializes in the economic evaluation of health care interventions and policies. He served as Director of the Research and Evaluation Unit in the Center for Health Policy and Research at Commonwealth Medicine for 11 years, and in 2015 he shifted his faculty home to the department as a

part time member of the core research faculty. He has considerable expertise in the integration of behavioral health and primary care services, high service utilizing patients, and evidence-based treatment for opioid addiction. His work has been funded by NIDA, NIMH, the RWJ Foundation, the BCBS Foundation, and by health and human services agencies in all New England states. Dr. Clark's current work focuses on efforts to manage costs and improve the quality and effectiveness of care for individuals with chronic illness, with a particular focus on primary care for Medicaid beneficiaries and other underserved populations.

- **Judy Savageau, MPH** is an epidemiologist and biostatistician with over 25 years of experience in a variety of investigations of community-based, public health issues. Her particular interests include maternal and child health as well as the identification of factors related to the utilization of health care and compliance with preventive health measures. The relationship between these outcomes and the development of programs to improve the quality of medical care provide a focus for her work, especially as they relate to medical education and faculty development efforts. Splitting her time between the department and Commonwealth Medicine's Center for Health Policy and Research, she works with Dr. Weinreb and a research assistant to support research projects with a variety of clinical and education faculty across the department. She sits on the school's Institution Review Board.
- **Chyke Doubeni, MD** was a 2004 graduate of our Preventive Medicine residency and MPH program who was recruited to join the faculty to establish his career as an independent investigator. With support from the medical school's Faculty Diversity Scholars Program (FDSP) between 2004-2006, as well as more than five years of close mentorship from Dr. Jerry Gurwitz, Executive Director of the Meyers Primary Care Institute, Dr. Doubeni established his research focused on reducing disparities in cancer-related screening and care. He received funding from the RWJ Foundation and NCI to pursue research activities with investigators in the Cancer Research Network, a consortium of 14 geographically dispersed research centers in health care delivery systems. In 2010, he received a 2010 Presidential Early Career Award for Scientists and Engineers (PECASE) for his work on cancer screening comparative effectiveness research, mentoring and community service care. Dr. Doubeni was recruited to the Department of Family Medicine at the University of Pennsylvania in 2012, where he was recently appointed as Chair.
- **Barry Saver, MD** is a family physician/health services researcher who began his research career at the University of Washington. He was recruited here in 2006 with a supporting research package from the Dean. His research interests have focused on vulnerable populations, the organization and financing of health care services, and developing and testing interventions that empower patients to take a more active role in managing their health conditions and making evidence-informed decisions about controversial cancer screening tests. He has received funding from NIH, AHRQ, and PCORI along with foundation support and has conducted research in a variety of areas including chronic illness management, racial and ethnic disparities in health care, and effects of financial incentives on health care costs, quality, and utilization. For personal reasons unrelated to his work, he left the department in Spring, 2015 to return to Seattle.
- **Lee Hargraves, PhD** was recruited to the department with support from a HRSA Academic Units grant in 2004. An accomplished survey researcher with extensive experience developing and using survey methods to assess health care quality from patients' perspectives, he has contributed to national efforts to document racial and ethnic disparities in health care. Dr. Hargraves left the department in 2013 for a new position with more funding security at the American Institutes for Research. Dr. Hargraves has retained his appointment in the department and serves as PI of an R34 intervention development and testing grant that is part of the UMass Center for Health Equity Intervention Research grant and focuses on using community health workers to improve patients' blood pressure control.

At the beginning of the review period, the department had its largest number of faculty devoting the majority of their time to investigator-initiated research compared to any other time period, totaling seven (Drs. DiFranza, Doubeni, Hargraves, Luckmann, Saver, Upshur, and Weinreb). At present, we have four faculty

who meet our definition of “core” faculty (Drs. Clark, Luckmann, Upshur and Weinreb), two of whom are now part-time, and another who is entering the last 18 months of her career.

Shortly after our 2008 review, the Dean awarded the department with a new research recruitment package for a position to be shared with the Department of Quantitative Health Science, and we came close to recruiting an accomplished Family Physician researcher. When the search broke down, the position was frozen, and was just made available this month to be utilized to recruit a candidate with whom we are currently negotiating.

Overall, the department faces challenges related to the lack of significant investment in research over the past several years. We have been unable to replace departing faculty, and our total research funding has started to drop. In addition, the medical school changed its methodology for allocation for its annual support for the department, utilizing a formula-based approach that does not provide support for research faculty who are not on the tenure track, or for research leadership or infrastructure. While there have been discussions about a change in the medical school’s approach toward supporting non-tenure track research faculty in clinical departments, formula-based funding for these individuals has been lacking. We do note that as a stopgap, the Dean has provided the department with interim funding to support research, which has been negotiated on an annual basis.

**Support services:** The department has maintained approximately the same amount of support services to assist faculty researchers during the past five years. The department provides grants management assistance and budget monitoring, and supports a research assistant along with Judy Savageau, who devotes approximately one-third of her effort to research related support and collaboration, including research design, data management, analysis and write-up of results. We have been able to augment our capacity for data management, analysis, and research methods and design work with colleagues from the Department of Medicine’s Preventive Medicine Division, Department of Quantitative Health Services, and Meyers Primary Care Institute.

**Collaborations:** The department’s investigators and research activities have benefitted from close collaborations with key partners, including:

- **Commonwealth Medicine** is described in detail in (G) Community Health.
- **The Meyers Primary Care Institute (MPCI)** was established in 1996 as a joint endeavor of the medical school, Reliant Medical Group (previously Fallon Clinic), and the Fallon Community Health Plan. The MPCI conducts population-based research to inform policy and practice, utilizing a multidisciplinary group of investigators and educators who focus on topics including patient safety and quality improvement, communication in healthcare, the organization and delivery of healthcare, health care policy, the epidemiology of chronic diseases, pharmacoepidemiology and medication safety, and comparative effectiveness research. Its Executive Director, Jerry H. Gurwitz, MD has been a strong collaborator with the department over many years (and also serves as Chief of the Division of Geriatric Medicine, which is jointly sponsored by the Department of Internal Medicine and by the Department of Family Medicine and Community Health). Dr. Weinreb serves as a member of the MPCI Board. Collaboration has provided multiple opportunities, including faculty mentorship (as noted above, Dr. Gurwitz served as a research mentor for Dr. Doubeni for over five years), active research collaboration, and educational programming for medical students on topics related to primary care and health policy.
- **The Division of Preventive and Behavioral Medicine** within the Department of Medicine, led by Judith K. Ockene, PhD, MEd, MA. Over many years, department investigators have collaborated with faculty in the Division. It serves as home for the UMass Worcester Prevention Research Center (PRC), one of 37 CDC-funded Prevention Research Centers across the country, co-directed by Drs. Stephenie Lemon and Milagros Rosal. Department member Suzanne Cashman, ScD collaborates closely with the PRC faculty and serves as a co-Investigator in the PRC.
- **The Department of Quantitative Health Science** was established in 2010 with a goal to become an internationally recognized resource for accomplishing translational research through methodological innovation. Catarina Kiefe, PhD, MD, a highly regarded scientist, clinical epidemiologist and internist who

has published extensively in the fields of health care quality measurement and outcomes research, was recruited to chair the department, and has successfully recruited talented methodologists and biostatisticians to the institution. Some have developed successful collaborations with Department investigators. In addition, the department leads several initiatives that involve our faculty in collaboration, including its UMass Center for Health Equity and Intervention Research. The department's Quantitative Methods Core serves an important role within the research community, providing additional study design, data management, and biostatistical support. On the other hand, there continues to be a relative lack of resources to assist in study development and biostatistical support, which can be particularly difficult for newer and less established researchers who do not have established relationships across the campus.

- **The UMass Center for Clinical and Translational Science (UMCCTS)**, first funded in 2010 and renewed in 2015, is led by Katherine Luzuriaga, MD, Vice Provost for Clinical and Translational Research. The Community Engagement and Research Section in the recently renewed proposal will build upon the foundation created during the last five years to expand and deepen its work, including continuation of an annual community-engaged translational research symposium, while providing consultation, webinars, and a website. A new initiative will create two Community-Based Research Networks (CBRNs) to enhance the scale, scope and impact of collaborative research between UMass investigators and clinical entities, community organizations and departments of public health. Suzanne Cashman from the department serves as a Co-Director of the Community Engagement Section.

An additional focal point for the department's goal for research collaboration is the facilitation of research with community practices and partners in a way that is bidirectional and responsive to community priorities. Department investigators partner with a range of community and state agencies and leaders, including the Worcester and Massachusetts' Departments of Public Health, the Massachusetts Department of Housing and Community Development, and the Massachusetts League of Community Health Centers.

Examples of some current collaborative relationships and associated projects include:

- UMMS Quantitative Health Sciences: *UMass Center for Health Equity Intervention Research (NIMHD): Community Health Workers/Diabetes Management R34 Intervention Grant (Hargraves, PI); Education & Training Core for Center (Upshur, PI); and Community-Engagement Core for Center (Cashman, Co-Director)*
- Meyers Primary Care Institute:
  - *Extended Release/Long-Acting Opioid Post Marketing Requirement Study, Federal Drug Administration, Group Health Cooperative is the primary grantee, Meyers is a sub. (R. Clark, Co-I)*
  - *Addiction Research Network, NIDA, Kaiser Northern California is the primary grantee and coordinating center (R Clark Co-PI, MPCI site)*
- Family Health Center of Worcester and Edward M. Kennedy Health Center:
  - *Meeting the Needs of Pregnant Women with PTSD in Healthy Start (HRSA/MCHB; Weinreb, PI)*
  - *Influence and Evidence: Understanding Consumer Choices in Preventive Care (PCORI; Saver, PI)*
- Massachusetts Department of Public Health: *Direct Engagement of Stakeholders in Translating CER into Clinical Guidelines (PCORI; Luckmann, PI)*
- Massachusetts Department of Housing and Community Development: *The Boston Homeless Families Project (Oak Foundation; Weinreb, PI)*
- Sixty Central Massachusetts School and Head Start Classrooms: *Kidsteps II: Promoting School Readiness Through Social-emotional Skill Building in Preschool (US Department of Education, Upshur, PI)*

The department also has a unique and productive collaboration with the National Health Care for the Homeless Coalition. In 2007, the Research Committee of the National Health Care for the Homeless (HCH) Council and the HCH Clinicians' Network worked in close collaboration with Drs. Upshur and Weinreb to establish the HCH Practice-Based Research Network (PBRN) which includes 62 organizations, many of which are a subset of 185 federally funded HCH grantees across the US. Drs. Upshur and Weinreb worked closely with 12 PBRN sites, resulting in the Network's first NIH funded grant, *Substance Abuse, Mental Health, and Health in Homeless Women in Primary Care (NIH/NIAAA, Upshur, PI)*.

**Environment for Scholarship:** The department has had a sustained commitment to enhance the scholarly environment across the department through strengthened efforts in the training programs, and at each of our practice sites, and promotes the scholarly activities of junior faculty.

- The department's **monthly Research Forum** provides a venue for faculty and staff to get feedback on projects in whatever their current state: developing a new project idea, identifying possible grant funding sources, reviewing a data collection instrument, assessing study results and identifying key summary points, or providing a forum for a dry-run before a national presentation. In addition to presentations by the core research faculty, many education and clinical faculty have presented their study or ideas at this forum and have gone on to successful completion of their work. The noontime meeting is available via webcast across the department.
- The department provides **structured oversight for all projects originating in the department which require IRB review**. Proposals are initially reviewed by Judy Savageau, MPH, who sits on the University IRB. This required review assists faculty in putting forth a more complete application to the IRB and provides quality assurance within the department that projects are adhering to local and national requirements for human subjects research. Guidelines are posted on the department's website.
- For over 10 years, the department has packaged and distributed a **monthly compilation of the Table of Contents from approximately 15 peer-reviewed journals** (e.g. *Family Medicine, Pediatrics, Primary Care Internal Medicine, Health Policy, Preventive Medicine*, etc.) with links to the articles to help faculty keep up with current literature in their area of interest. Journals are added as requested by the faculty.
- In 2011, in response to a growing interest in translational and community-based research at clinical and teaching sites, the department established **Principles and Policies for Researchers Seeking to Use Practices/Clinical Sites Associated with the UMass Department of Family Medicine and Community Health**. Posted on the department's website, this document helps practices to evaluate a request from a potential investigator, utilizing guidelines for conducting research that is collaborative, relevant, and minimizes practice burden. Criteria favor studies that are responsive to the community or practice, as well as department priorities, and that enable sites to participate as true partners in the research, rather than just as sources of patients or as last-minute afterthoughts.
- The department provides a **formal application process for faculty to request resources and support for a range of research-focused needs**, including literature reviews, developing a focused question, study design, grant preparation, instrument development and data analysis, IRB questions, and scientific writing and table generation. Judy Savageau, MPH, and Dr. Weinreb oversee this process. When appropriate, assistance is provided by a research assistant, or a mentor is assigned. In any given year, the department has supported from 13 to 26 projects, some over several years. Several projects have resulted from collaborations between faculty and medical students and residents, focusing on the populations seen by our faculty.

Overall, projects supported over the review process have resulted in many successful outcomes, including manuscripts, newsletter articles, regional and national presentations, and poster presentations. The process has also resulted in 8 small grant applications, 3 of which were funded (STFM, AAFP and a university-based public health service grant). Examples of the work generated by this process include:

- Increasing YMCA membership/utilization among health center patients with type 2 diabetes:
  - Matt Silva, Suzanne Cashman, Parag Kunte and Lucy Candib. *Improving Population Health Through Integration of Primary Care and Public Health: Lessons from an Intervention to*

*Foster Physical Activity Access for Community Health Center Patients. American Journal of Public Health* 2012;102(11):e56-61.

- Identifying at-risk residents in Family Medicine training:
  - Kedian T, Gussak L, Savageau JA, Cohrssen A, Abramson I, Everard K, Dobbie A. *An Ounce of Prevention: How Are We Managing the Early Assessment of Residents' Clinical Skills?* Family Medicine 2012; 44(10):723-726.
- Assessment of oral health training among Family Medicine, Pediatric and OB/Gyn residents in primary care practice:
  - Silk H, King R, Bennett IM, Chessman AW, Savageau JA. *Assessing Oral Health Curriculum in US Family Medicine Residency Programs: A CERA Survey.* Family Medicine 2012;44(10):719-722.
  - Curtis M, Silk HJ, Savageau JA. *Prenatal Oral Health Education in U.S. Dental Schools and Obstetrics and Gynecology Residencies.* Journal of Dental Education 2013;77(11):1461-1468.
- Evaluating the availability and utilization of Family Medicine hospitalists in residency education:
  - Baldor RA, Savageau JA, Shokar N, Potts S, Gravel J, Eisenstock K, Ledwith J. *Hospitalist Involvement in Family Medicine Residency Training.* Family Medicine 2014;46(2):88-93.
- Evaluating the role of reflective writing on medical student education and subsequent clinical practice:
  - Veno M, Silk H, Savageau JA, Sullivan KM. *Evaluating One Strategy for Including Reflection in Medical Education and Practice.* Family Medicine, in press, 2015.
- Evaluating the use of scribes in a primary care community health center on physician work/life balance and clinical service utilization:
  - Earls ST, Savageau JA, Begley S, Saver BG, Sullivan K, Chuman A. *Implementation of Scribes in an Academic Family Medicine Primary Care Practice.* J Am Board of Fam Med, under review, 2015.
- Evaluating the longitudinal integration of quality improvement curriculum in residency:
  - Potts SE, Shields S, Upshur C. *Preparing Future Leaders: An Integrated Quality Improvement Residency Curriculum.* Family Medicine, accepted for publication, 2016.

In recent years, the department has had specific interest in supporting scholarship projects that focus on practice innovations and quality improvement initiatives. During 2014-15, Dr Weinreb, in collaboration with Judy Savageau, launched an **A3 process to link a rigorous scholarship effort to a practice innovation in the department.** Two of the department's research core team partnered with faculty at the Barre Family Health Center to evaluate the implementation of a scribe program. In this mixed-methods QI study, we measured the impact of those scribes on physician office hours, clinical documentation, perceptions of work-life balance, physician and patient satisfaction, productivity, and return on investment. In summary, the study found that scribes significantly improved clinicians' practice experience, job satisfaction, and productivity without adversely affecting, and possibly enhancing, the patient experience. A revised manuscript is currently under review by the *Journal of American Board of Family Medicine*.

**Funding provided by the department to support selected faculty projects** (described in (B) Organization and Culture) **has included protected time for research.** From 2010-2013, the department, in collaboration with Commonwealth Medicine, provided a 30% salary offset to Steve Martin, MD to develop and implement a pilot study focused on the health effects of the Bureau of prison's 2004 smoking ban, which created an enforced smoke-free environment for a population with high rates of smoking. With mentorship provided by Robert Goldberg, PHD, an epidemiologist in the Department of Quantitative Health Science, Dr. Martin published several manuscripts during this time period. Unfortunately, his attempts to secure funding to continue this work (to ACS and NCI) were not successful.

## **Medical Writing**

In addition to making contributions to the peer reviewed literature, department faculty are productive writers in numerous additional ways. Highlights from the past five years include:

- The *5 Minute Clinical Consult* (Wolters Kluwer, 2016) is an internationally recognized book and online database for health care providers. Frank Domino, MD has served as editor in chief since 2005, and Drs. Robert Baldor and Jeremy Golding serve as Associate Editors. Updated annually and delivered in a practical, bulleted outline format, it provides direction for the diagnosis and treatment of the full spectrum of illness and health. It is used as a primary educational resource for over 30 medical schools worldwide, and is utilized in many Allied Health (NP, PA, Pharmacy, etc.) schools. The book contains over 650 medical diagnostic topics and over 120 diagnostic and treatment algorithms, and includes a primer on the concepts of Health Maintenance and Evidence Based Medicine. The online database has over 2,000 clinical topics and approximately 200 diagnostic algorithm, 200 videos focusing on physical diagnosis and treatment procedures, physical therapeutic maneuvers and over 2,000 patient education tools, many in Spanish. The 2015 edition sold over 10,000 copies and the online database receives over 9,000 unique visits each month.  
Approximately 28 authors for the 2016 edition are members of our faculty, most contributing several topics, often with students and residents as co-authors. The majority of the authors for the book are Family Medicine faculty from around the U.S.
- In addition to the *5 Minute Clinical Consult*, the relationship between Wolters Kluwer and our department also includes Robert Baldor, MD as editor in chief of *Bratton's Family Medicine Board Review* book and J. Herb Stevenson, MD as co-editor of the *Sports Medicine Consult* with Brian Busconi, MD from the Department of Orthopedics and Rehabilitative Medicine. A number of faculty author and edit for these publications, as well as for the online database *UpToDate*.
- In 2010, Drs Lucy Candib and Sara Shields edited *Women-Centered Care in Pregnancy and Childbirth* (Radcliffe Publishing, 2010). This book explores a woman-centered approach to pregnancy and birth and applies the proven model of patient-centered care to pregnancy and birth - an expansion beyond previous applications to various chronic illnesses. *Woman-Centered Care in Pregnancy and Childbirth* incorporates dozens of vignettes describing clinicians' approaches to woman-centered maternity care with women and families from a variety of social, cultural, and economic situations facing common or problematic challenges over the course of prenatal care, birth and the postpartum period.

## **Metrics**

Department metrics for research track funding, publications, presentations, and dedicated support for education and clinical faculty, and can be found in summary in Appendix C. A listing of publications and presentations can be found in Appendices F-2 and F-3.

**Grant Funding:** The review period has been characterized by considerable success in research funding, productivity, and national recognition. As determined by the Blue Ridge Institute for Medical Research, our ranking for NIH funding, compared to other Departments of Family Medicine, was 11, 9, and 9 from the years 2010-2012 respectively. In addition to NIH funding, during the past several years, investigators have also received funding from AHRQ, PCORI (the department received 2 of the grants in the first cycle in 2012), the U.S. Department of Education, the HRSA Maternal and Child Health Bureau, and various foundations including the Robert Wood Johnson Foundation, Oak Foundation, and Blue Cross of Massachusetts Foundation. Areas of research focus have included: 1) screening and treatment of behavioral health and substance abuse issues in primary care; 2) eliminating health disparities in access and outcomes; 3) health

promotion and prevention services especially related to cancer; 4) chronic illness management; 4) homeless families and women; and 5) behavior problems among preschoolers.

Research grants totals from FY09 to FY15 are:

FY9	\$1,241,427.00
FY10	\$2,093,000.00
FY11	\$1,503,492.00
FY12	\$3,107,107.00
FY13	\$2,489,571.00
FY14	\$3,205,170.00
FY15	\$1,903,323.00

**Publications:** Faculty publish extensively in the peer reviewed literature. The number of publications has ranged from 29-67 articles per year during the past five years with an average annual number of just under 50. The faculty have commonly published in journals devoted to clinical medicine (JAMA), Family Medicine (Family Medicine and the Journal of the American Board of Family Medicine), public health (American Journal of Public Health, BMC Public Health), behavioral health (Drug and Alcohol Dependence, Journal of Substance Abuse and Treatment), and education (Academic Medicine), among many others.

**Presentations:** Faculty presentations at local, regional, national, and international conferences have ranged from 85-128 annually for the past 6 years, with an average of 116 oral presentations and posters per year. Meetings commonly include the STFM Annual Spring Meeting, AAFP Global Health Conference, STFM Conference on Practice Improvement, AAFP Annual Scientific Assembly, American Public Health Association Annual Meeting, AcademyHealth Annual Research Meeting, NAPCRG Annual Meeting, Collaborative Family Healthcare Association Conference, American Medical Society of Sports Medicine Annual Meeting, and the IHI Annual International Summit.

A list of faculty presentations from the last 5 years is included in Appendix F-3.

**Dedicated support for education and clinical faculty:** As noted above, in any given year, the department has supported from 13 to 26 projects formally requested by education and/or clinical faculty, some over several years.

### **Challenges/Opportunities**

We have two primary challenges:

- We need to rebuild the number of core research faculty, and we need to continue our commitment to a base level of financial support for an infrastructure to support scholarship across the department.
- Conducting research in our very busy clinical settings is more challenging, and there is also more competition for our sites with investigators from other departments and other institutions.

### **Opportunities**

- *We now have modest resources to support one to two new faculty recruitments.*

As noted in (H) Finances and Administration, the department has accumulated sufficient resources in its trust funds, and has achieved a level of financial stability, to partially support a funding strategy to recruit new core research faculty. We have approached the Dean, who has agreed to participate, and the UMass Memorial CEO, who has made a general commitment to continuing to fund departmental Academic Investment Funds across the medical group.

We can now provide a financial package to fully support a mid-career researcher, as well as a package that is shared with one of our partners for a more junior level investigator. We are now planning for a recruitment process for the former, and discussing the latter with the Meyers Primary Care Institute.



In addition, as noted above, a unique opportunity has arisen regarding the recruitment of a husband (basic science) and wife (health policy) team, and the Dean has made available the recruitment package that was awarded to us, shared with the Department of Quantitative Health Science, to facilitate the recruitment of the latter individual.

- *The department's leadership has made a commitment to cross fund our research infrastructure from clinical revenues.*

In its discussions of budget priorities, the department's Leadership Team has made a commitment to cross funding a portion of the department's research infrastructure with clinical revenues. While no specific dollar amount was specified, there is understanding across the faculty that a department of our size must include a significant research agenda.

- *The department occasionally is presented with opportunities to bring on new faculty in low risk, low cost arrangements that can foster research development and productivity.*

We have broadened our traditional definition of core faculty to include accomplished research faculty working in the department less than full time, and it has been successful:

Robin Clark, PhD, a Professor in the department who was based at Commonwealth Medicine for many years, asked to join the department one year ago, working on a part-time basis, supported by his grant funding. In return, the department is providing support for a portion of his effort (20%) for support of the department's infrastructure.

Kristin Mattocks, PhD, Associate Chief of Staff/Research for the VA Central Western Massachusetts Healthcare System, is receiving limited support from the department to work with Drs. Weinreb and Clark to submit a grant to NIDA focused on pregnant women and substance use.

- *Innovation in primary care practice creates opportunities for research and support of faculty scholarship*

The department has particular strength in the areas of primary care transformation, integrated behavioral health and primary care, services addressing the needs of homeless populations in primary care and substance abuse services. These are areas of considerable national interest, offering potential for further research. The research core faculty are working systematically to support selected projects that enhance clinical faculty scholarship focused on practice innovation. Collaboration between the research faculty and faculty at the Barre Family Health Center to evaluate the utilization of scribes is one example. A new collaboration with residents and faculty at the Hahnemann Family Health Center to study a new clinic focused on high utilizers of care is another.



## E. Education

**Summary:** Since our last review, we have maintained a broad array of predoctoral and graduate programs spanning the breadth of Family Medicine and Community Health. They continue to be rated extremely positively. Our predoctoral teaching covers all four years of the medical school, with faculty based at locations ranging from a variety of clinical sites to community agencies and programs to the Office for Clinical Affairs at MassHealth, the Massachusetts Medicaid program. We have had continued success in our two Family Medicine residencies as well as our programs in Preventive Medicine, Sports Medicine, Primary Care Psychology and Geriatrics. Our collaboration with the Family Health Center of Worcester continues to provide an excellent venue for training our residents and students in caring for an underserved urban population, and we assisted them in the development of two new Fellowships based at the health center, devoted to HIV/hepatitis C and to Global Health.

We solidified our commitment to integrated primary care through our post-doctoral Fellowship in Primary Care Psychology, and under the leadership of Alexander (Sandy) Blount, EdD, we established a new Center for Integrated Primary Care. The Center has become a national leader, providing consultation and online training reaching across the country and beyond.

Our Worcester Family Medicine Program is becoming a “Destination Program” for students, as we’ve worked to address the needs of individuals while providing learners novel curricula devoted to leadership and wellness. Teaching is based in an integrated behavioral health model, with a variety of learners being taught at our centers. During the review period, we responded to problems of dropping ABFM scores, and rebounded with a new emphasis on lifelong learning, which included attention to test taking skills and board preparation, in addition to an evidenced-based journal club.

We experienced a difficult transition with our Fitchburg program, which had been run collaboratively with a federally qualified Community Health Center in Fitchburg for several years. For financial reasons, we were forced to separate from the Center and its clinical practice. For a short time it threatened the future of the program. However, marking the importance of the program to the local community and to the medical school, HealthAlliance Hospital, a UMass Memorial member hospital, stepped in to develop a new practice for the program, and the Dean became personally involved, visiting onsite to assure the residents and faculty that the medical school was committed to the training program. The transition of the clinical program is discussed in detail in (F) Clinical Services.

All of our programs have had high fill rates and very low attrition. Our graduates are highly recruited and many are practicing in medically underserved areas.

Looking ahead, our two most immediate challenges are UMass student interest in Family Medicine and the need for a larger network of preceptors for the growing third year class. We are also challenged by a loss of funding streams (from Title VII and from the medical school) that we have used for four decades to foster educational innovations, and a new medical school campus in western Massachusetts offers new challenges and opportunities.

### **Strategic Plan for Education**

**Our 2015 strategic goal for education:** *Our advanced education programs serve as a leading resource for addressing the primary care and public health workforce needs of the Commonwealth of Massachusetts:*

**We strive to accomplish this goal by focusing on four strategies:**

- *We will train outstanding, patient-centered, community-responsive clinicians and public health professionals to be leaders in providing quality health care services to diverse populations*
- *We will integrate teaching within all of our practices, based in community settings that reflect the health care needs of the Commonwealth, with an emphasis on training for shortage area practice*
- *We value a rigorous curriculum with particular attention to addressing wellness, the social determinants of health, evidence-based medicine and team-based practice transformation.*
- *Our faculty respond to the needs of our learners and society, focus on innovation, while evaluating and disseminating outcomes via peer-reviewed scholarship.*

## **Overview**

Robert Baldor, MD serves as Senior Vice Chair for Education. Frank Domino serves as Director for Predoctoral Education. Dr. Domino chairs the **Department Curriculum Committee**, which meets periodically to review all undergraduate teaching provided by departmental faculty, reviewing evaluations and to assist course Directors in responding to evaluations and to strategize about future initiatives.

## **Faculty involvement across the Medical School**

- The **Admissions Committee** is responsible for the selection and matriculation of qualified applicants for admission to the Medical School based on standards approved by the Dean and by the Educational Policy Committee of the School of Medicine. The committee consists of 24 faculty, two from the department, Drs. Kristen Mallett and Peter McConarty (until Dr. McConarty's retirement in fall, 2015). The selection committee utilizes a 'Multiple-Mini Interview (MMI)' process; several department faculty serve as interviewers.
- Michele Pugnaire, MD serves as the Medical School's **Senior Associate Dean for Education**.
- The **Educational Policy Committee (EPC)** is the primary governing body of the School of Medicine and determines policy for undergraduate medical school education, reporting to the Dean of the School of Medicine. Dr. Bob Baldor served as Chair of the EPC from 2002 to 2012, which included several years devoted to a complete revision of the Medical School curriculum under his leadership. Dr. Frank Domino now serves as the department's voting representative and several other departmental faculty are active within the EPC by virtue of their roles as course Directors.
- The Medical School is organized into five **Learning Communities**, each with 25 students from each class. Mike Ennis, MD serves as co-director of the Learning Communities program and as Head of Blackstone House, and Phil Fournier, MD serves as Head of Kelley House. Additional House Mentors from our department include Drs. Lisa Gussak, and Hugh Silk. The House Mentors are funded by the medical school for 25% of each faculty member's time.

**GME Governance:** The Graduate Medical Education Committee is chaired by the DIO (Deborah DeMarco, MD from the Department of Medicine), and our residency and fellowship Directors (Drs. Potts, Ledwith, Stevenson, Coghlin-Strom) are active members. The GMEC is responsible for performing self-studies and for managing resident evaluations of the programs. Such information is provided to the GMEC for discussion.

**External relationships:** The department collaborates with a number of external partners in educational endeavors:

- The most significant relationship is with Family Health Center of Worcester, which hosts one of three continuity tracks for 12 of our Worcester Family Practice residents, as well as a variety of educational opportunities for medical students. The relationship is described in more detail in (C) Organization and Culture.
- We collaborate with several other academic departments that assist in the training of our residents. The most robust relationships are with Orthopedics for our Sports Medicine Fellowship and with Internal

Medicine as a co-sponsor of our Geriatrics Fellowship. We also host the longitudinal primary care block for the Ob/Gyn residency at the Hahnemann Family Health Center.

- A unique relationship exists with The Massachusetts College of Pharmacy (MCPHS). A MCPHS Pharmacy Practice faculty member is based at the Barre and the Hahnemann Family Health Centers, and two are based at Family Health Center of Worcester. Each site takes 15-18 pharmacy students per academic year for ambulatory care Advanced Pharmacy Practice Experiences, which are 6 weeks in length. The faculty and students work with our faculty and residents during patient care encounters to help optimize patient drug therapy. The MCPHS faculty participate in specialized visits such as Diabetes Group Visits (Barre), High Risk Clinic (Hahnemann), and a Falls Prevention Clinic (FHC/W), and participate in activities including health center Chart Rounds and the department's Grand Rounds and Morbidity & Mortality Conferences. They also have worked with health centers to obtain NCQA PCMH recognition.
- Our Preventive Medicine program has a variety of collaborative training experiences with both the Worcester City and Commonwealth of Massachusetts Departments of Public Health. Additionally, the residents receive a MPH from the UMass/Amherst School of Public Health Science.
- Several local colleges and high schools provide a training environment for our Sports Medicine program, where the faculty provide coverage of team events and the fellows obtain active hands on involvement with a variety of sporting events. We would be remiss not to also mention our relationship with the Boston Athletic Association: Our faculty have provided support for the Boston Marathon and several faculty were recognized for their roles in providing care after the 2013 bombing.
- A collaboration with the one-year postdoctoral fellowship in primary care psychology from the Bedford VA was established 8 years ago. Their Fellows each spend one day a week at one of our health centers, delivering integrated primary care in the same model as our Fellows, working alongside resident and attending family physicians to provide comprehensive, patient-centered care. Two fellows per year were initially placed at the Barre and Hahnemann Family Health Centers. For the past three years, the Bedford VA has sent 3 fellows per year to spend 1 day/week at either the Hahnemann Family Health Center or the Benedict Family Medicine practice. The VA fellows are supervised by our Behavioral Science faculty.

**Training grants:** During the review period, innovative 5-year federal training grants from the Health Resources and Services Administration supported curricular efforts at both the predoctoral and GME levels.

- The **Predoctoral Education grant** "*Caring for Underserved Populations in the Patient-Centered Medical Home*" (Bob Baldor, MD, PI) provided support for medical student curricular innovations. Our goal was to increase the ability and desire of medical students to care for underserved populations in the Patient-Centered Medical Home (PCMH). The program aimed to prepare students for practice in medically underserved areas through new curricular modules that educated our students in skills needed to succeed in the evolving PCMH model of care, with a special emphasis on skills that are necessary to provide for the most vulnerable – those with cultural barriers, chronic disease and the disabled – many who seek care from Community Health Centers where a large percentage of our medical students will train. We enhanced our curriculum with 3 components so that our students are prepared to practice in this changing world:
  - A community-oriented cultural competence curriculum was introduced into all 4 years of medical school.
  - New PCMH educational modules for the required Family Medicine clerkship included community-based exercises working with inter-professional team members and participation in new clinical skill building modules that focused on difficult clinical issues such as disabilities, obesity, and substance abuse.
  - An advanced writing elective in evidenced-based medicine and comparative effectiveness concepts.

- The **Worcester Family Medicine Residency grant** “*Training Family Medicine residents for the Patient Centered Medical Home: Chronic care management, cultural competence, and lifelong learning*” (Stacy Potts, MD, MEd, PI) supported curriculum development for our Worcester-based program.

This proposal developed a curriculum to train Family Medicine residents to practice in Patient Centered Medical Homes through the following objectives:

- Developing skills in chronic disease management of diabetes
- Providing culturally competent care in serving the underserved, and
- Building lifelong learning skills through the use of a learning management system.

Residents worked in interdisciplinary quality improvement teams to improve the care of their patients with diabetes. Skills in providing care for a culturally diverse population were bolstered through a global health curriculum that focused on immigrant health and cultural competence.

- The **Fitchburg Family Medicine Residency grant** “*Caring for Vulnerable Populations*” (Jim Ledwith, MD, PI) focused on curricular enhancements related to geriatrics.

This project created new curriculum and training programs that enhanced the ability of Family Medicine residents to deliver high quality care to a particularly vulnerable population in the Fitchburg area, the elderly. The Geriatrics project developed a new comprehensive curriculum, which included: a geriatric assessment training program within the teaching health center; new procedure training sessions with simulation; and a long-term care center based curriculum supervised by Family Medicine faculty. Teaching techniques and enhanced integrated care developed during this project enhance the care and training in the care of other vulnerable population groups at the Fitchburg Health Center.

**Articulated learning outcomes for courses for which the department has responsibility:** The following sections devoted to Predoctoral and Graduate Medical Education describe each formal course or program and its goals and objectives.

### **Predoctoral Medical Education**

Our predoctoral curricula ensure that all medical students graduate with a firm understanding of the primacy of the doctor-patient relationship, the critical role of behavioral health in Family Medicine, and key principles of community and population health. Our flagship course is the third year Clerkship in Family Medicine, which continues to receive some of the highest student evaluations in the school. Our fourth year electives are very popular, with Dr. Frank Domino’s leadership elective serving as the most sought-after fourth year elective.

**Interdepartmental courses:** Department faculty participate in and provide leadership to several predoctoral courses that span multiple departments:

- The ***Doctoring and Clinical Skills*** (DCS) course aims to have students achieve competencies in the areas of personal and professional development, continuous teaching and learning, the medical interview, physical examination, clinical problem solving including integration of basic science material and use of specific analytic and assessment principles contained within epidemiology, community health, and medical ethics, all geared toward enhancing students' skills in the content and process of patient care. The course has 3 main components, including ***small groups*** of 9-11 students facilitated by 2 faculty members (several from our department) and the ***Longitudinal Preceptor Program*** (LPP), where students work alongside a practicing physician twice a month during the first year and monthly in the second year practicing the skills taught in the small group. Family physicians (52 in 2014-15) host 1st and 2nd year

students in their practices for the Longitudinal Preceptorship Program. The third component is the **Physical Diagnosis** course, in which the principles of the normal and abnormal physical examination are taught and practiced. Phillip Fournier, MD is the course director for the LPP and physical diagnosis components of the DCS course.

- Suzanne Cashman ScD, serves as co-director of the **Determinants of Health** course for first and second-year medical students. The course focuses on the key biopsychosocial aspects of health.
  - An **Epidemiology-Biostatistics block** of the DOH course provides students with a core set of concepts and skills in epidemiology and biostatistics, and is directed by Michael Kneeland, MD. The primary goal of the block is to provide students with a core set of concepts and skills in epidemiology and biostatistics required to critically evaluate the medical literature, important components of evidence-based medicine. Students learn about the various types of epidemiology study designs including strengths and weaknesses. Students are introduced to the use and application of basic statistical tests and data in the medical literature. Using these skills, students evaluate articles from the medical literature in small group skill sessions.
  - A key area for interprofessional education is the portion of the Determinants of Health course devoted to the **Population Health Clerkship**, directed by Heather-Lyn Haley PhD. The two-week immersion course brings together all second year medical and first year graduate nursing students. Its aim is to introduce students to public health concepts and to communities as a unit of care. Community engagement in this course allows students to develop and nurture relationships with community organizations for the mutually beneficial exchange of knowledge and resources, in a context of equitable partnership and reciprocity. In the clerkship, up to 30 small groups, mostly facilitated by faculty from our department, are geographically dispersed to urban areas including Worcester, Lawrence and New Bedford, as well as rural areas on Martha's Vineyard and in Barre. Students complete service projects ranging from the development of patient education materials to hosting a senior health and safety fair, and are given opportunities to study and describe populations including for example, children with asthma, adolescents, refugees, incarcerated persons, and elders at risk for falls.
- Judith Savageau, MPH directs the **Senior Scholars** program. Its goal is to increase students' understanding of scientific methods that can be applied directly to problem-solving skills development and critical thinking. Students working on their Capstone projects can convert them into Senior Scholars projects in their 4th year if they have 2 more months of research that they want to devote to their research instead of the Advanced Studies month to 'wrap up' their Capstone work. Specific goals of the program are to provide a structured research experience for fourth year medical students, to develop students' hypothesis-generating skills, to provide a learning opportunity for students considering academic careers, and to foster student-mentor relationships.

**Third Year Interstitial Curricula:** These daylong symposia are to provide instruction in topics that do not typically fit within the objectives of the core clinical clerkships, yet are crucial to the education of our students. Department faculty are involved in teaching in all of the 8 'Interstitial' days, but 1/2 are led by department faculty:

**Disabilities** (Linda Long-Bellil, PhD, JD, Director)

The goals are to approach people with physical and cognitive disabilities in a manner that builds trust and confidence; understand the challenges that people with disabilities and their families experience when they seek medical care; and anticipate potential secondary medical conditions related to a disability and work as partners with their patients to maximize health and well-being.

***Pain Management*** (Jeff Baxter, MD, Director)

The goals are to understand the components of the accepted standard of care for chronic nonmalignant pain; to describe strategies for optimizing safety in the provision of opioid analgesics for chronic pain and to appreciate the differences between physical dependence on and addiction to opioid pain medications and how to recognize addiction in chronic pain patients.

***Health Policy*** (Bob Baldor, MD, Director)

The overall goal of this ISC is to provide students with a detailed understanding of key health policy issues that may affect their future practice and to provide students with a knowledge base with which to advocate for both their patients and health policy change at the local and national level.

***Multiculturalism*** (Warren Ferguson, MD, Director)

The goals are to develop cultural sensitivity to the hardships faced by immigrants and refugees during the migration process and develop knowledge about cultural variations in the health beliefs, expressions and practices of patients, and provider care and outcomes.

**Department-based courses:** The department sponsors a wide array of courses across the medical school curriculum. Our flagship course is the required third year ***Family Medicine Core Clerkship*** (Mary Lindholm, MD, Clerkship Director, with Drs. Kristin Mallett, Frank Domino, Cynthia Jeremiah, Tracy Kedian, Kim Houde and Ahmed Hussain serving as core faculty), which is consistently highly rated by students, with 85 faculty serving as preceptors:

**Course: FC-300 *Family Medicine Core Clerkship* / 5 weeks** (Clerkship Director: Mary Lindholm, MD)

Description: The 5-week Family Medicine Clerkship places students in dynamic teaching practices that are models for the provision of Family Medicine. Students participate in a case-based core curriculum weekly at the medical school, with the remainder of the time precepting with a Family Physician in a community-based practice across the Commonwealth. The purpose of the Clerkship is to provide instruction in the basic knowledge, attitudes and skills of Family Medicine, providing a foundation that prepares the student for his/her future role as a physician, regardless of specialty choice, by demonstrating the importance of the primary care physician in providing continuous, comprehensive care to the patient, and by teaching the importance of the doctor-patient relationship, interviewing skills, appropriate physical exam, and clinical problem-solving in caring for patients.

The Clerkship provides exposure to Family Medicine as a specialty choice for third year students and supports those students considering Family Medicine as a career.

The goals of the clerkship include:

- The student will gain an understanding of the Family Medicine approach to the diagnosis and management of patient problems along with appreciation for the provision of comprehensive continuous care for patients and their families irrespective of disease or patient characteristics.
- The student will develop the basic clinical skills required to assess and manage acute and chronic medical conditions commonly seen by the family practitioner.
- The student will gain knowledge of the principles and applications of health promotion, disease prevention, patient education and behavioral modification as they relate to family medicine.
- The student will appreciate the role the family physician plays in providing and coordinating care for the patient with complex problems. This includes the use of available personnel, economic and community resources, and appropriate specialty consultation.
- The student will demonstrate an appreciation for the doctor-patient relationship in providing effective, high quality health care.



- The student will independently review and be competent to manage the 20 most common presentations in Family Medicine.

Other courses offered by the department include:

**Year 3 Flexible Clinical Experiences (FCE):** These 1 or 2 week long electives are to provide students with a brief immersion in an aspect of medicine that is not typically available as a clinical rotation and/or to experience an area of medicine that may be of interest as a future career choice. Departmental faculty have offered a few of these experiences, including:

- ***Adventures in Prison Medicine*** (Faculty Supervisor: Patricia Ruze, MD; Janet Hale, PhD)  
By the end of the course, students have a general understanding of a basic approach to addressing clinical issues within an incarcerated population. Students will develop an awareness of conflicting responsibilities of the correctional practitioner including provision of high quality medical care, patient advocacy, provision of safety and security for patients, fellow prisoners and prison staff. Students will work with faculty sponsor daily in the prison.
- ***Country Doctoring-Rural Medicine*** (Faculty Sponsor: Stefan Topolski, MD)  
A country doctor experience caring for all comers in a beautiful rural region of Western Massachusetts near Vermont. Office care and practice management, triage and surgery, house calls and barter may all be experienced during your time with us.
- ***Health Behavior Change*** (Faculty Sponsor: Daniel Mullin, PsyD)  
Students will demonstrate increased knowledge and improved competency in facilitating patient health behavior change for health promotion and behavior change, disease prevention and chronic disease management. The course will provide advanced training in health behavior change counseling theories including Social Cognitive Theory, Motivational Interviewing, Transtheoretical Model of Change, and the "5 As". The knowledge and skills developed in this course will be relevant to the inpatient and outpatient care of adolescent and adult patients.
- ***Policy and the US Health Care System*** (Faculty Sponsors: Suzanne Cashman, ScD; Michael Tutty, MHA)  
The health care system in the United States continues to present seemingly intractable problems. While there is some agreement that the issues of cost, quality, and access continue to demand fundamental change in the system, our society continues to be polarized around the ways those changes should be made. Underlying the debate seems to be a fundamental conflict in how we see the health care system. That is, do we see it as goods to be bought and sold through the market or as a public good to which all should have access? This elective will delve into these themes with presentation, group discussions, and meetings with key thought leaders.
- ***Traditional Osteopathy*** (Faculty Sponsor: William M. Foley, DO)  
This course is designed to introduce the student to the daily practice of a traditional osteopathic physician. It would be informative for a student who wishes to incorporate osteopathic manipulation into their practice or who anticipates referring to an osteopathic specialist. Objectives include understanding the osteopathic philosophy and gaining an understanding of the methods, indications, and contraindications of osteopathic manipulation, along with an appreciation for when and how to refer patients to an osteopathic specialist

#### **Fourth Year Sub-Internships in Family Medicine:**

- **FC-400 Sub-Internship in Family Medicine** (Director: Patricia (Trish) Seymour, MD)  
Students/month: 1 student @Health Alliance/Leominster; 2 students @ South 6/Memorial Campus  
Description: This elective fulfills the 4th year Medicine Subinternship requirement for UMass students. During this intensive subinternship the medical student functions as a member of a Family Medicine team serving adult patients. This includes taking histories, performing physicals, writing notes and orders, making work rounds, and participating in conferences. The students will learn about inpatient adult medicine delivered from a family practice viewpoint, including a strong focus on evidence-based medicine and patient-centered practice.
- **FC-423 Family Health Center Outpatient Subinternship** (Director: Stacy Potts, MD)  
Elective Description: Students participate in the longitudinal delivery of outpatient primary care to adults, pregnant women, and children through a Family Medicine based model at one of our three residency health center locations. Settings include a small New England town, an urban community health center, or a Worcester based group practice as indicated below:
  - 1) Hahnemann Family Health Center: Stephanie Carter-Henry, MD
  - 2) Family Health Center of Worcester: Tracy Kedian, MD
  - 3) Barre Family Health Center: Steve Earls, MD
- **FC-450 Family Medicine Office Subinternship** (Director: James Ledwith, MD)  
Sites Available: HealthAlliance Fitchburg Family Practice, Fitchburg Family Medicine Residency  
Students/month: 2  
Elective Description: Students will participate in a Family Medicine approach to patient care, and will have opportunities for community engagement. Students will assess patients and plan treatment along with a precepting attending or resident physician. Encounters include preventive care and acute and chronic disease management, including maternity care. Work collaboratively with a team of physicians, nurses, and behavioral health specialists. Students are welcome to work with the residency inpatient team to experience work in a state-of-the-art community hospital.

#### **Other Clinical Electives**

- **FC-401 Family Medicine Clinical Elective** (Coordinator: Frank Domino, MD)  
Sites Available: Individual Preceptorship Sites  
Students/month: 1  
Elective Description: Goals include: (1) To develop the student's ability to use the Family Medicine approach to problem solving and clinical decision making; (2) To advance the student's knowledge of the clinical content of Family Medicine so that s/he has an understanding of the most common cause of symptoms and the natural history of the common conditions; and (3) To expose the student to another style of family practice that can be contrasted with his/her experience in the core clerkship, thereby enriching his/her knowledge about Family Medicine as a viable and rewarding practice alternative.
- **FC-409 Outpatient Student Health Care** (Director: Christine Purington, MD)  
Sites Available: College of the Holy Cross, Clark University, and Worcester Polytechnic Institute  
Students/month: 1  
Elective Description: Experience a wide range of acute and chronic health problems in the college population in areas of infectious disease, trauma, dermatology, eating disorders, women's health, sports medicine, and substance abuse.

- **FC-413 *Sports Medicine*** (Director: John Herbert Stevenson, MD)  
 Sites Available: Hahnemann Campus  
 Students/month: 1  
 Elective Description: This four-week fourth year elective is offered through our Sports Medicine Fellowship. It is an excellent opportunity to gain knowledge on common sports injuries including their diagnosis and management. The elective comprises sports medicine clinics, training room sessions, and game coverage.
- **FC-415 *Health Care for the Homeless*** (Director: Erik Garcia, MD )  
 Sites Available: Homeless Shelters and Outreach Centers  
 Students/month: 1  
 Elective Description: Goals include (1) To learn how homelessness impacts on health and the ability to access health care, and to participate in a program which addresses these issues through a unique comprehensive approach; (2) To explore the special health care needs of patients with psychiatric illness and substance abuse issues; (3) To expand the students' knowledge base through direct participation at outreach clinics in Worcester; and (4) To gain insight and appreciation of the difficult medical and social issues faced by the medically underserved. Students will observe and assist in providing medical care at several sites throughout Worcester, including local shelters.
- **FC-419 *Rural Family Medicine*** (Coordinator(s): Stephen Martin, MD & Suzanne Cashman, ScD)  
 Elective Description: Students are provided with opportunities to work closely with a family physician in rural practice, learn about the challenges faced by physicians working geographically distant from tertiary care and be involved in office practice, inpatient and nursing home admissions, rounds, as well as home visits. Opportunities are available to work with community-based programs, nurse midwives and integrative health providers. Placements include Martha's Vineyard, Nantucket Island, Great Barrington, Worthington, Shelburne Falls and Franklin County, Hilltown.
- **FC-439 *Correctional Medicine Inpatient Elective*** (Director: Warren Ferguson, MD)  
 Sites Available: Lemuel Shattuck Hospital (Jamaica Plain)  
 Students/month: 1  
 Elective Description: The Lemuel Shattuck Hospital is the primary site for hospital based and specialty medical care for the Mass. Dept. of Correction. We provide both inpatient and outpatient medical management with variety of medical/surgical subspecialties. At any time, between 18-22 correctional patients are distributed among services: the teaching acute medicine service; the surgical service; the orthopedic service and medical affiliated services including HIV/ID, pulmonary, rehab and TB services. Some of the most common admitting diagnosis are: Substance Abuse Toxicity and Detoxification, Liver Cirrhosis with its complications, HIV related disease, Seizure disorder and malingering, dehydration and hunger strike, foreign body insertions and other self induced injuries.
- **FC-440 *Correctional Health Ambulatory Elective*** (Director: Warren Ferguson, MD )  
 Sites Available:  
 1. MCI-Framingham (women)  
 2. MCI-Shirley (men)  
 3. Souza-Baranowski Correctional Center, Shirley (men)  
 4. MCI-Concord (men)  
 5. MCI-Norfolk (men)  
 Students/month: 1 per site  
 Elective Description: Students participating in this elective experience will work in one site full time and under the supervision of a faculty member from UMass Correctional Health. In addition to direct care provision, students will be responsible for attending utilization management rounds each Tuesday, as

well as the monthly didactic conference which includes Morbidity and Mortality Conference. Inmates present with acute illnesses, have higher prevalence of Hepatitis C and HIV and are more likely to have chronic illnesses than in the general population. Students have an opportunity to delivery primary care to this unique population. The competencies for care behind bars are significantly different, requiring excellent communication and negotiation skills, strong skills in public health and a desire to serve a population that has been disenfranchised in society.

- **ME-4102 *Palliative Care*** (Coordinator: Jen Reidy, MD)  
 Sites Available: UMMHC-University and Memorial Campuses  
 Students/month: 1  
 Elective Description: This 4 week elective, based in the Division of Palliative Care (Departments of Medicine and Family Medicine & Community Health), provides a fourth year medical student with the opportunity to develop knowledge and skills in the biopsychosocial/spiritual care of patients with life-limiting disease and their families. The student will make regular rounds on assigned patients referred for palliative care inpatient consultation and/or hospice care, make home visits to terminally ill patients in the community and participate in family meetings and interdisciplinary interventions, and develop a comprehensive palliative care treatment plan for patient under the direction of the palliative care team after evaluation of the physical, psychosocial, and spiritual causes of distress in patients with life-limiting disease and their families.

#### Other Non-Clinical Electives

- **FC-428 *Medical Writing and Evidence Based Medicine Elective*** (Director: Frank Domino, MD)  
 Students/month: Unlimited  
 Elective Description: This is a very independent elective where you must attend a training program and select a project to author. Options include writing a critical review of an recent medical publication from FPR Journal Club, completing a project you are already involved with, writing Case Report for Publication, updating patient education pages for [www.familydoctor.com](http://www.familydoctor.com) or writing an Evidence Based Review column for the AAFP's "Cochrane for Clinician" series, amongst others. Your suggestions are also very welcome. For some writing, selection of faculty member who will "co-author" may be necessary. Location for this elective is selected once you have chosen a topic and month.
- **FC-436 *Scientific Writing Elective*** (Coordinator: Judy Savageau, MPH)  
 Students/month: No more than two students/mentor/month  
 Elective Description: For many students who are interested in research, not all have the opportunity to devote 2-3 months to a full Senior Scholars project. This one-month elective will serve as an opportunity to foster independent information acquisition skills and scientific writing skills working closely with an experienced scientist, clinician or researcher in a collaborative environment. Students will be expected to produce a one-page project outline (in a standard medical journal Abstract format), plus a comprehensive literature review on a proposed subject. A completed paper including references (plus tables and figures, if relevant) is required. The student may choose to review a subject or topic of interest, conduct a literature review for a proposed research project or paper, or write up the work conducted as part of a completed research project. The mentor will work with the student to prepare the paper for submission to a medical journal if deemed feasible within the elective time-frame and student interest.
- **FC-418 *Oral Health*** (Director: Hugh Silk, MD )  
 Sites Available: Various sites in and around Worcester, MA  
 Students/month: 1 (Elective can be 2 or 4 weeks in duration)  
 Elective Description: The student will spend time in informal and formal didactic sessions and will review

recent literature on diseases or problems encountered throughout the elective. At the conclusion of the elective, students should appreciate the significance of oral disease on overall health in Worcester and Massachusetts across the life cycle and have the skills to take a risk history for oral disease, counsel about oral health promotion; make appropriate referrals, along with learning specific procedural skills such as fluoride varnish and possibly other oral interventions including regional oral anesthetic blocks.

- **FC-445 *On Leadership and Being a Medical Professional*** (Director: Frank Domino, MD)  
Students/month: Varies  
Elective Description: The goal of this 4th year, four week elective is to introduce the learner to the concepts of Leadership and Professionalism. By the end of this rotation, the learner will understand the key concepts of Leadership and be motivated to improve leadership skills and to effectively lead in their personal and professional lives. Faculty include business leaders, politicians, and behaviorists.
- **FC-458 *Evidence-Based Medicine in Health Policy: An Introduction to Medical Necessity Guidelines and Utilization Review*** (Director: Umbereen S. Nehal, MD, MPH)  
Sites Available: Quincy, some main University campus  
Number of Students/Month: 1  
Elective Description: Understanding the structures for payment for evidence-based, high-quality care is essential in the current practice of medicine. This elective offers a unique experience in a public payer setting through the Office of Clinical Affairs (OCA) which provides clinical leadership to MassHealth, the Massachusetts Medicaid program. In this elective a student will learn to assess outcomes data and best practices to contribute to the development of medical necessity guidelines for medical procedures and pharmacologic agents. The experience involves a combination of independent work and shadowing senior health policy leaders in the public payer setting.
- **FC-459 *Health Policy: The Public Payer Perspective*** (Director: Umbereen S. Nehal, MD, MPH)  
Sites Available: Quincy  
Students/month: 1  
Elective Description: This elective offers a unique experience in a public payer setting through the Office of Clinical Affairs (OCA) which provides clinical leadership to MassHealth, the Massachusetts Medicaid program. OCA is fully embedded within MassHealth and supports a full range of medical management functions, including clinical policy, utilization management, pharmacy, quality, clinical analytics, and oral health on behalf of MassHealth programs. Working closely with MassHealth since 2001, we ensure that patients receive medically necessary, appropriate, cost-effective, quality care—in compliance with state and federal regulations.
- **FC-491 *Principles & Practice of Preventive Medicine*** (Coordinator: Judy Savageau MPH)  
Sites Available: UMMHC & Mass Dept. of Public Health Boston  
Students/month: 1 – 2  
Elective Description: To provide students with an overview of the basic principles and practice of preventive medicine and public health. To improve students' knowledge and skills in selected areas of clinical preventive medicine commonly encountered in primary care practice, which include the basic principles of patient-centered counseling to promote health behavior change.

## Pathways

### ***Rural Health Scholars Program*** (Directors: Suzanne Cashman, ScD.; Stephen Martin, MD)

This elective four-year experience is designed to nurture the interest of medical and nursing students who would like to pursue a career in rural health by develop the attitudes and skills necessary to become effective clinicians for rural and small town communities. The components of this program include:

- Preclinical Years
  - Rural practice placements for the Longitudinal Preceptorship Program (LLP)
  - Population Health Clerkship focused on a rural topic
  - Monthly luncheon seminars
  - Summer service-learning or research experiences
- Clinical Years
  - Family Medicine Clerkship in rural/small towns
  - Electives

**Global Health Pathway** (Director: Michael Chin, MD)

The Global Health Pathway (GHP) is an elective four-year experience which is designed to achieve the goal of preparing UMass Medical School students for clinical, research, public health and cultural experiences with underserved populations both in the U.S. and around the globe. The objectives of the GHP include the following:

- Increase knowledge of diseases, conditions and issues affecting underserved populations around the world
- Increase cultural competency in caring for underserved populations
- Learn about refugee and immigrant populations living in the U.S. and the challenges that they face accessing health care
- Learn about organizations in the U.S. and around the globe that serve underserved and vulnerable populations
- Learn how to advocate for underserved and vulnerable populations
- Learn about organizations that serve underserved populations around the globe

**Family Medicine Interest Group**

The department supports a Family Medicine Interest Group across the four years (1<sup>st</sup> & 2<sup>nd</sup> Year Directors: Konstantinos Deligiannidis, MD and Kristin Mallett, MD; 3 & 4<sup>th</sup> Year Director: Frank Domino, MD)

The 1<sup>st</sup> and 2<sup>nd</sup> year FMIG is a student-run organization with rotating leadership each year from members of the MS2 class at the medical school. Activities include:

- Early Fall Introductory Luncheon w/faculty panel to introduce Family Medicine with panel Q&A
- Hands On Session (offering skills stations – suturing, IUD, splinting, Nexplanon)
- Family Medicine resident panel w/Q&A
- Department Service/Community Projects
- Dinner with the 4<sup>th</sup> year match students

The 3<sup>rd</sup> and 4<sup>th</sup> year group activities include:

- MS3s attend a clerkship luncheon during their rotation
- AAFP medical student meeting scholarships
- FMEC Student Scholarships
- Summer Personal Statement dinner
- Fall Application Prep Dinner
- Winter Rank List Dinner
- MAFP attendance

**Predoctoral Education - Means to measure student attainment of these outcomes:** The outcomes for all medical school courses are measured by student pass rates, including both formative and summative assessments. In the Doctoring and Clinical Skills (DCS) course preceptors provide written evaluations of their students. Criteria to assess include attendance, participation in and preparation for precepts, and presentations at precepts. In addition, students complete an end of course evaluation that includes an assessment of the course objectives. The Epidemiology-Biostatistics block of the Determinants of Health (DOH) course assessment includes feedback from the small group leaders, along with performance on assigned case-based problem sets. The Population Health Clerkship block of this course incorporates feedback from community facilitators, small group faculty facilitators and student group performance at a formal an end-of-clerkship Poster session.

Evaluation of students on the Family Medicine Clerkship is both a formative and a summative process. Preceptors closely observe and evaluate students' skills in case presentation, physical examination, patient communication, data synthesis, and ability to formulate differential diagnoses and management plans. The preceptor meets with each student to review his or her performance at the mid-point for a formative evaluation and at the end of the clerkship for summative evaluation feedback. In addition the students return to the medical school weekly to participate in a core curriculum. Each block of students is divided into 2 small groups to learn the basic approach to medical care from the Family Medicine perspective working through a case-based learning exercise with a standardized 'MQ family'. At the end of the Clerkship, the Clerkship Director receives the students' evaluations, with numerical ratings and narrative comments, from their preceptor and their supervising MQ small group facilitator, as well as final OSCE results and performance on written assignments to determine the final grades and commentaries.

**Predoctoral Education – Department Metrics:** Appendix C includes our core metrics for predoctoral education, including UMass students matching in Family Medicine over several years. It also includes portions of the 2015 AAMC Mission Management Tool that reflect the impact of our curricula. Appendix F includes evaluation data from our third year clerkship as provided by the Office of Medical Education.

### **Graduate Medical Education**

The department's graduate programs include the 15 (5-5-5) resident Fitchburg Family Medicine residency, the 36 (12-12-12) resident Worcester Family Medicine residency, and Fellowships in Preventive Medicine, Sports Medicine, Geriatrics, Global Health, and HIV/Hepatitis C. We sponsor a post-doctoral Fellowship in Primary Care Psychology, and in collaboration with the UMass Amherst School of Public Health and Health Sciences, we also sponsor a Masters program in Public Health. A new Center for Integrated Primary Care also sponsors a series of training courses focused on primary care practice transformation and the integration of behavioral health into primary care settings. The following descriptions include articulated learning outcomes for programs for which the department has responsibility:

#### **Fitchburg Family Medicine Residency (James Ledwith, MD Director)**

**Mission/Overview:** UMass Fitchburg Family Medicine Residency's mission is to train physicians in the full spectrum of Family Medicine in a community setting, and to provide comprehensive Family Medicine services to the community and to all patients, regardless of age, sex, medical conditions, previous medical history, or ability to pay. The program is community-based and community-engaged, with the recognition of the importance of family and quality of life for our residents.

For nearly 40 years, the program has provided superior Family Medicine residency training in the North Worcester County, approximately 25 miles north of Worcester. The residency was initially organized from the

practice of an early leader in the development of the specialty of Family Medicine, Dr. Robert Babineau, Sr. Its first graduates completed training in 1982. Twenty years later, in 2002 the practice became the nucleus for a new federally qualified Community Health Center, which augmented behavioral health services and added dental care to the practice. After severe financial pressures and diverging priorities strained the partnership between the department and the Center, the residency was forced to announce that it would separate from the Center on June 30, 2014. The Board of Directors at UMass Memorial HealthAlliance Hospital quickly stepped in, and the practice was reorganized as a HealthAlliance outpatient department, which began operation on July 1 of that year. The practice remained co-located with the Center as a tenant, and today they partner in caring for the vulnerable underserved populations in the surrounding communities. Even after the separation, the program continues to integrate behavioral health services with the Center's behavioral health department. In addition, a full-time psychologist has been recruited to direct the behavioral science curriculum, with a major focus on motivational interviewing and behavioral disorder management.

The Fitchburg residency currently has 15 residents. It is dually accredited by the ACGME and by the AOA, and coordinates its osteopathic curriculum in cooperation with the Northeast Osteopathic Medicine Education Network (NEOMEN) and the University of New England College of Osteopathic Medicine (UNECOM). It is the only accredited osteopathic residency program in Massachusetts. The curriculum is an essential component of our effort to integrate complementary care modalities in Family Medicine training. The program is also a leader in the introduction and dissemination of training in primary care-based opiate dependence therapy.

#### **Program Goals and Objectives:**

1. Provide excellent training in Family Medicine in a patient centered medical home with access to a diverse patient population, highly integrated information systems, integrated behavioral health services, and highly developed team-based systems.
2. Prepare residents for practice in any environment, with an emphasis on caring for vulnerable populations.
3. Provide a flexible curriculum and learner-centered environment that allows residents to develop their unique educational priorities and provide time and resources for learners to reach their educational goals.

**Accreditation:** The program received continuing full ACGME accreditation in 2015. The Review Committee commended the program for its demonstrated substantial compliance with the ACGME's Program Requirements and/or Institutional Requirements without any new citations. The RRC however noted a Board Pass Rate of 61.9% over 5-years and the program is being monitored annually for improvement and evidence of substantial compliance with the requirement, with a target date for substantial compliance with the 90% pass rate for July 1, 2019.

The Program also received a full 5-year 'Continuing Approval' with no citations from the AOA Program and Trainee Review Council (PTRC) in August, 2013, with the next regularly scheduled program review for August 2018. The Program is preparing for the single accreditations system with plans to sustain an osteopathic track that provides regional leadership in osteopathic training under a new osteopathic program director, who was recruited in 2015.

#### **Evaluation of the Program:**

##### **Selected 5 year Outcome measures**



1. A brand new clinical facility opened on July 1, 2014 offering a state-of-the-art design for team-based care and resident instruction. HealthAlliance Fitchburg Family Practice is co-located with the Fitchburg Community Health Center.
2. Interprofessional team-based care is provided by allopathic and osteopathic family physicians, a nurse practitioner, a physician assistant, a psychologist, nurses, and a support team including certified medical assistants, medical secretaries, an interpreter (Spanish), phlebotomist, and financial and insurance counselors. The educational program utilizes interprofessional training with students of allopathic and osteopathic medicine, nursing, pharmacy, and dental hygiene. The Director of Behavioral Science resigned in July 2015, and a new Director has been successfully recruited with anticipated start in late spring, 2016.
3. Despite the stressed conditions in transitioning out of the CHC practice, there was no resident attrition, and the program filled in the match. Faculty attrition was anticipated and incorporated into program planning for the smaller practice setting. Four faculty members entered private practice in other Massachusetts sites. One departed temporarily but returned to lead the practice group as Medical Director. One transitioned to a full time hospitalist role while continuing to lead the residency inpatient curriculum.
4. Diversity is represented in the current resident group with seven of fifteen (47%) identifying as arising from MUC or underprivileged populations.
5. Every resident during the past 5 years completed a focused scholarly project. Four of six 2015 graduates, and five of six 2014 graduates, provided external presentations at state, regional, or national meetings.
6. Board performance has been a concern, though partially impacted by the cost of dual accreditation, with some osteopathic residents opting to take just the AOA exam. In 2014 the department committed to cover the cost of the ABFM exam for osteopathic residents who seek ABOFP certification in order to assure that all residents take the ABFM exam, and this year, the program established taking the ABFM exam as a new requirement for residency completion in 2016. In 2015 all graduates took and passed a board exam, although the one osteopath took only the ABOFP exam. In 2016, all residents will take the ABFM examination before certification of residency completion. In addition, the residents are now participating via videoconferencing with our Worcester program on a new Life-Long Learning workshop which includes a Board Prep component.
7. Faculty scholarly activity is extensive and has been related to buprenorphine management of opioid dependence, osteopathic manipulation in primary care, and acupuncture. Accomplishments of the 5 core faculty members during the previous academic year include:
  - a. PI for a HRSA training grant (Residency Caring for Vulnerable Populations)
  - b. 8 book chapters (5 Minute Clinical Consult)
  - c. 5 presentations at state, regional, or national meetings
  - d. 1 poster presentation

#### **Worcester Family Medicine Residency (Stacy Potts, MD, MEd Director)**

**Mission/Overview:** The Worcester Family Medicine Residency places 12 residents at each of 3 distinct health centers (36 total) for their ambulatory training, with inpatient training for all at the UMassMemorial Medical Center (UMMHC) in Worcester. Applicants choose the structure of their health center training via 3 separate match numbers, with placements at the Family Health Center of Worcester (a Federally qualified CHC), the Barre Family Health Center (a rural center 24 miles northwest of Worcester), or the Hahnemann Family Health Center (an outpatient clinic located on the UMMHC/Hahnemann campus).

The program attracts, fosters and graduates learners who will be leaders of tomorrow, sustaining their passion through excellence in state of the art, full breadth Family Medicine. Operating in an interdisciplinary team-based learning environment with strong institutional commitment to family medicine and primary care, our graduates will become leaders to provide clinically-competent, patient-centered and community-aware health services to diverse populations in diverse settings.

**Program Goals and Objectives:**

1. Provide excellent training in core Family Medicine in patient centered medical homes with a creative and innovative curriculum
2. Provide a learner centered environment that allows for learners to develop their unique educational priorities and provide time and resources for learners to reach their educational goals.
3. Maintain full ACGME accreditation with an extended cycle length of 4 – 5 years, striving towards RPS criteria for excellence
4. Admit highly qualified residency applicants who will thrive in our learning environment with a residency retention rate greater than 90%.
5. Achieve board pass rate above the national average
6. Attract, retain and support expert, passionate educators with improved faculty satisfaction.

**Accreditation:** The program maintains full continued ACGME accreditation. Previous site visit in 2013 resulted in full continued accreditation with commendation for its demonstrated substantial compliance with the ACGME's Requirements for Graduate Medical Education. At that time, the Committee cited 4 areas: 1) patients were not included in the resident formative evaluation process; 2) only 79% of first time test takers passed the exam over the previous 5-year time-frame; 3) residents expressed concerns with needing to be aggressive in getting to perform procedures in the emergency department and the CCU; and 4) resident participation in scholarly activity was difficult. All of these areas have been addressed: Patient satisfaction data was incorporated into the resident evaluation and a lifelong learning workshop, which includes a Board Prep component, was developed to assist with ABFM board completion. In addition, those that score poorly on the ITE are also offered a new 'Test-taking and Board Prep' elective. The 3<sup>rd</sup> and 4<sup>th</sup> citations were addressed by the program evaluation committee as noted below. Our next scheduled 'Self-Study Visit with the Next Accreditation System' is tentatively scheduled for July of 2020.

**Evaluation of the Program:** A Program Evaluation Committee (PEC) consisting of faculty and residents from across the residency has been developed and meets quarterly to review program data. Input is from several sources, but primarily from the e-value system which collects evaluation data on all of our resident training experiences and from the anonymous evaluations compiled by the UMass Office of Graduate Medical Education. An Annual Program Evaluation is formally completed by the PEC and an action plan developed to address any areas in need of improvement. Depending on the action taskforces and/or groups may be developed to work on various items, and progress is assessed at an annual curriculum retreat.

The results of the most recent program evaluation identified several areas for improvement and included such action items as:

- Develop a process to collect comprehensive data regarding scholarly activities;
- Provide additional training in procedures and imaging;
- Organize and standardize didactic curricula across training sites;
- Clarify the objectives for the rotation devoted to "professor chief;"
- Formalize the elective process to include a set of core elective choices
- Develop a curriculum devoted to unconscious bias; and
- Implement a milestone-based evaluation system

### **Selected 5-year Outcomes Measures:**

1. Interprofessional team-based care is provided at all three of our health centers and a component of our Family Medicine Inpatient Service (FMIS) by family physicians, nurse practitioners, psychologists, and pharmacists. The educational program utilizes interprofessional training with students of allopathic and osteopathic medicine, nursing, pharmacy, and dental hygiene. The Director of Behavioral Science resigned in July 2015, and a new Director has been successfully recruited with anticipated start in late spring, 2016.
2. In-training Exam Scores have been consistently at or above the national mean, and our board pass rate has been 100% for the last 3 years.
3. A Life-long learning workshop has been developed to train residents in interpreting the medical literature via an interactive journal club and with a test –taking an board prep review built in addition to active ABFM SAM sessions.
4. A Leadership curriculum has also been instituted and rated highly by the residents, key issues relate to understanding roles as part of a medical team in the PCMH, performing quality improvement projects and participating in ‘wellness’ activities. Our goal is to have resident graduates who are prepared to achieve the ‘Quadruple Aim’ of health care reform.
5. The program has consistently filled in the Match with highly qualified candidates and resident attrition has been minimal. The few residents who have left over the last 5 years have been primarily for personal issues unrelated to the Program and one left to pursue formal Ob/GYN training.
6. Faculty scholarly activity continues with numerous publications and presentations. Presenting is both locally (Grand Rounds) and nationally primarily at educational meeting such as the Family Medicine Education Consortium (FMEC) and STFM. Topics range from buprenorphine management of opioid dependence, skin cancer, chlamydia care, and smoking cessation to hypertension management, wellness and many others. Additionally faculty members are regular contributors to book chapters in the *5 Minute Clinical Consult* (often with residents as co-authors).
7. Leadership: Finally, resident faculty have leadership roles outside of the department, ranging from STFM working groups to representative to the Mass Academy of Family Practice and the FMEC. In 2013, residency Director Stacy Potts was appointed the ACGME Review Committee for Family Medicine, and will serve as the committee chair from 2016-2019.

### **Fellowship in Preventive Medicine** (Jacalyn Coghlin-Strom, MD, MPH, Director)

**Mission/Overview:** The Preventive Medicine Fellowship is designed to prepare physicians for a wide range of careers in public health agencies, community health centers, research institutions, academic medicine, and managed care organizations. Residents pursue highly individualized training programs aimed to meet their specific career goals. The Program attempts to strike a balance between the diversity of residents’ educational interests and the need for a common core of skills and knowledge. The program provides flexibility in resident schedules and a wide array of training sites also with a clearly defined set of core requirements and performance expectations.

### **Program Goals and Objectives:**

1. Residents will become proficient in providing compassionate, appropriate, and effective patient care for groups and individuals to identify risks for disease or injury, and opportunities to promote wellness.
2. Residents will acquire medical and population health knowledge about established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences and learn to apply this knowledge to patient and population care.
3. Residents will demonstrate practice-based improvement through investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, and improvements in patient care and community health.

4. Residents will become proficient in interpersonal and communication skills that result in effective information exchange and teaming with patients, families, other health professionals, public health professionals, stakeholders, and community members, including the public and the media, in a clear and effective manner, both orally and in writing.
5. Residents will demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to diverse populations.
6. Residents will understand the importance of systems-based practice and demonstrate awareness of, and responsiveness to, the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value.

**Accreditation:** The Preventive Medicine Fellowship received continuing full accreditation in 2012. The Program was commended for substantial compliance with ACGME requirements and received a ten year accreditation cycle with no citations. Annual electronic reports to ACGME in 2010-2014 also received commendations for substantial compliance without citations.

**Evaluation of the Program:** Residents' feedback about their experiences in the program is extremely important to the continuous process of improving the quality of the program. Residents are encouraged to report any problems they are experiencing with practicum work, preceptors, faculty, program facilities, program policies, or other issues to their advisor and/or the Program Director. As part of the biannual performance review process, residents are asked to provide a written summary of their assessment of the residency program. This assessment is reviewed and discussed with the resident's advisor, the CCC, and the Program Director.

#### **Selected 5-year Outcomes Measures:**

1. **MPH Performance:** 100% of Preventive Medicine Residents were elected to Public Health Honor Societies and maintained a GPA of 3.75 or higher.
2. **Scholarly Work/Residents:** 100% of Residents engaged in formal teaching activities, completed research projects and participated in quality improvement projects; 80% presented at a local, regional or national meeting; 40% had scientific papers published.
3. **Scholarly Work/Faculty:** 100% of faculty engaged in formal teaching activities; 80% conducted research and published scientific papers; 66% presented at regional or national meetings
4. **Board Certification:** 100% of Residents who took the Board exam passed; 70% took the exam.
5. **Careers:** Academic Medicine (3), Occupational Medicine (2), Clinical Practice/Preventive Medicine (2), Research (1), Public Health (1), and Pharmaceutical Safety and Quality (1) (see Appendix C-3)
6. **Anonymous Annual GME Resident Survey:** 100% extremely satisfied with the training program; 100% would recommend the training program to colleagues.
7. **Recruitment and Retention:** 100% retention rate for residents entering the Program. Previous clinical training: Family Medicine (4), Emergency Medicine (2), Obstetrics/Gynecology (1), Psychiatry Internship (2), Internal Medicine Internship (2), Surgery (1).

#### **Fellowship in Sports Medicine (John (Herb) Stevenson, MD, Director)**

**Mission/Overview:** The mission of the Fellowship is to graduate Sports Medicine Fellows who demonstrate competency in the treatment of athletes and active individuals in all aspects of Primary Care Sports Medicine including illness and injury related to exercise, physiology, nutrition, pharmacology, sports psychology, and ethical/medical-legal aspects of exercise and sports. It is open to graduates of ACGME accredited residencies in Family Medicine, Internal Medicine, Pediatrics, and Emergency Medicine. The Fellowship averages 40-50 applicants per year for 2 fellowship positions.

**Goals/Objectives:** The curriculum is a 12-month longitudinal curriculum with required selectives in areas of orthopedic sub-specialty, radiology, cardiology, physical therapy, physical medicine and rehabilitation, and podiatry. A major focus is demonstrating competency in sports medicine and orthopedic ambulatory skills including the musculoskeletal exam, injection technique, casting, splinting, and MSK US.

The Fellowship emphasizes all aspects of Primary Care Sports Medicine including illness and injury related to exercise, physiology, nutrition, pharmacology, sports psychology, and ethical/medical-legal aspects of exercise and sports.

The Fellowship distinguishes itself by having one of the largest Sports Medicine Board certified faculty along with one of the most extensive and diverse team coverage experiences. These include high school, prep school, collegiate, and professional experiences. The Fellows' mass sporting event coverage includes the Bay State Games, Boston Marathon, and the Cyclocross Events.

At the center of the Fellowship is the extensive clinical experience gained at the UMassMemorial Sports Medicine Center. The Sports Medicine Center is a high volume multi-disciplinary Sports Medicine Center treating athletes of all ages and abilities from the recreational to professional. There is extensive interaction and collaboration with Orthopedic Sports Medicine.

The Sports Medicine Fellowship is committed to provide care to underserved communities through a variety of outreach programs:

- The Fellowship provides free school based Sports Medicine Clinics at two underserved High Schools in North Central MA.
- Provides free pre-participation physicals to underserved athletes in North Central MA
- Provides orthopedic and sports medicine services within the Family Health Center of Worcester, a federally funded community health center.
- Cares for athletes and active individuals of all ethnic communities within our service area

Research and scholarly work is highly emphasized throughout including teaching, required research, writing projects, presentations at national conferences, and formal didactics. On average our Fellows have graduated with 2 national Academy presentations, 1 regional presentation, and a Family Medicine Grand Rounds presentation. Additionally, they have averaged 3-5 publications per year including book chapters and peer reviewed journal publications.

The program was established with the Fitchburg Family Medicine residency serving as its sponsor. In 2014, when the future of the residency was in question, program sponsorship was moved to the Worcester Family Medicine residency.

**Accreditation:** The last ACGME site visit was 2010 with the Fitchburg Family Medicine Program review and at that time we received a full 5-year accreditation. As we transferred our sponsorship to Worcester in 2014, the next site visit will be done in conjunction with the UMass Worcester Family Medicine Residency Program scheduled for 2019. The only citation was appropriate Program Personnel were not properly listed. This was a clerical error and has subsequently been corrected and updated with ACGME. We always have and continue to meet or exceed all required program personnel.

**Evaluation of the Program:** We have a 100% Sports Medicine CAQ Board pass rate for all Fellowship graduates (the national average pass rate is around 80%). The Fellowship has been able to place graduates in a variety of highly sought after practice types and locations. We have a 100% success rate in Fellows securing their first choice in job choice over the past 5 years. Fifty percent of our graduates have an academic appointment and 2 of our graduates have gone on to establish Sports Medicine Fellowship programs at Brown University and Maine Dartmouth Family Medicine Residency.

**Selected 5- year outcomes:**

1. Transition of sponsoring residency program from UMass Fitchburg to the UMass Worcester Family Medicine Residency Program. The majority of the faculty and fellow time is now based out of Worcester rather than Fitchburg.
2. Development of one of the most comprehensive Musculoskeletal Ultrasound training programs. The goal is to train our fellows to be fully competent in the most current diagnostic and interventional musculoskeletal ultrasound procedures. 100% of our graduates over the past seven years have successfully integrated musculoskeletal ultrasound into their clinical practice.
3. Over the past 5 years on average we interview 10 applicants and fill with our top 4 ranked applicants.

**Fellowship in Geriatrics (Gerry Gurwitz, MD, Director, Erika Oleson, MD, Assistant Director)**

The Geriatric Medicine Fellowship accepts 2 Fellows every year into a collaborative program offered by the Division of Geriatric Medicine. This is a one-year ACGME approved Fellowship for physicians trained in Family Medicine or Internal Medicine. The Division of Geriatric Medicine is dually situated within the Department of Medicine and the Department of Family Medicine and Community Health, with faculty from both departments. This provides a diverse faculty and a variety of approaches to health, education, and research regarding older persons.

The Fellowship focuses on maximizing the health of older adults as they navigate across the continuum of care. Fellows learn the principles of Geriatric Medicine through a combination of longitudinal and block clinical care experiences in the outpatient, inpatient, home, long-term care, and subacute care settings. Fellows work closely with Division and other UMass faculty and community resources, and have opportunities for teaching medical students and residents. Additional learning activities include the Geriatric Medicine Conference, Quality Improvement Project, Teachers of Tomorrow, core didactic lectures and research conferences.

Significant success since our launch in 2010:

- ACGME accreditation, citation free, with notable practices
- 100% Geriatric Medicine Board pass-rate

**Post doctoral Fellowship in Primary Care Psychology (Tina Runyan, PhD, Director)**

The Primary Care Psychology Fellowship is a two year program which prepares Fellows to practice integrated behavioral health within primary care practices. The training philosophy and model is based on a supervised experiential approach in which first year post-doctoral fellows are training in evidence-based clinical health psychology through intensive didactics, clinical observations, clinical supervision, and by training side-by-side with Family Medicine residents. In the second year of the program, the fellows continue their clinical training and supervision, but also begin a more focused experience of learning how to teach and train family medicine residents to recognize behavioral needs and use psychosocial knowledge and behavioral health skills. Fellows also learn to build integrated service programs in a primary care setting and achieve the following goals:

- Become leaders and advocates for integrated, collaborative healthcare
- Practice evidence-based psychology in a primary care environment
- Be capable of advanced practice competency in independent practice as Clinical Health Psychologists with sufficient preparation to be credentialed and ultimately Board Certified by ABPP in clinical health psychology
- Make meaningful scholarly contributions, particularly by learning how to conduct applied research projects leading to practice-based evidence for integrated care

- Assume roles in medical education, working as behavioral science experts within Family Medicine residency training programs, Family Medicine Departments or other medical departments including but not limited to Oncology, Obstetrics, Pediatrics, and Internal Medicine

Fellows are evaluated in a variety of ways, including live observation, and are expected to gain competencies in:

- clinical health psychology assessment techniques
- clinical health psychology intervention strategies
- ethical practices specific to primary care psychology
- conducting effective consultations with physicians
- professionalism, communication, effective documentation, and acculturation to the medical environment
- healthcare management and administration, including leadership skills
- research skills, particularly in the area of conducting clinical quality improvement initiatives.

In the past year, both faculty and Fellows have become engaged in consulting roles focused on implementation of integrated primary care psychology for the state's Medicaid program through Commonwealth Medicine.

**Accreditation:** We chose to have the program accredited by the American Psychological Association, and successfully achieved that designation in 2007. However we have found that the designation is confined to more traditional psychology training programs, requires a lot of effort to maintain, is expensive, and does not recognize many important aspects of the program, such as teaching students or residents or working on health care transformation projects. As we do not expect that it will impact recruitment into the program, and won't impact negatively on our graduates' employment prospects, we do not intend to renew the certification when it expires in 2017.

#### **Masters in Public Health (Jacalyn Coghlin-Strom, MD, MPH, Director)**

A Master of Public Health is accredited through the School of Public Health and Health Sciences at UMass/Amherst, yet offered through the department with courses taught in Worcester by faculty from both campuses. The MPH Program draws a wide spectrum of students, including UMass students, residents and fellows, area physicians, and other health professionals looking to broaden their knowledge of Public Health. Twelve students graduated from the Program in 2015 and three were accepted into the Phi Kappa Phi Honor Society. Jennifer Bradford, a graduate of both the Preventive Medicine Residency and the MPH Program, was inducted into the Rho Chapter of the Delta Omega Honor Society, a prestigious public health honor society.

#### **New programs developed during the review period**

##### **Fellowship in Global Health (Olga Valdman, MD, Director)**

**Mission/overview:** This newly developed non-accredited, 2-year long Family Medicine Global Health Fellowship was implemented in response to a growing interest in the field and is hosted by the Family Health Center of Worcester. The Fellowship seeks to train family physicians to become leaders in global Family Medicine by training them to be clinicians, advocates, community health scholars and teachers locally and globally through equitable local-global partnerships.

**Goals/Objectives:**

1. Fellows collaborate in didactic sessions with UMMS Global Health Fellows in the Departments of Pediatrics and Emergency Medicine.
2. Global health electives include clinical rotations, public health and health policy practicum experiences, research opportunities, and teaching activities.
3. Domestic sites include Family Health Center of Worcester, which sponsors the program, a Community Health Center serving diverse patient population with a large refugee community. Immigrant and Refugee groups include patients from: Puerto Rico, El Salvador, Dominican Republic, Brazil, Albania, Iraq, Vietnam, Ghana, Liberia, Kenya, DRC, Burundi, and Somalia.
4. International placements are in Nicaragua, Liberia, Kenya, and the Dominican Republic.

**Fellowship in HIV/Viral Hepatitis Care** (Phil Bolduc, MD, Director)**Mission/overview:**

Like the Global Health program, this recently developed non-accredited, yearlong Fellowship was implemented in response to a growing interest in the field and is hosted by the Family Health Center of Worcester. The Fellowship seeks to address the National HIV/AIDS Strategy goals by training family and internal medicine primary care specialists to also become experts in HIV and Hepatitis B and C and to become educators and leaders in the care of these patients in community-based primary care settings.

Fellows are hired as attending physicians to work at Family Health Center of Worcester for four clinic sessions per week, seeing HIV, Hepatitis B and C, and general family medicine patients. The remaining six sessions are spent doing self-study, attending HIV and ID grand rounds, fellow time with the fellowship director, and 1:1 teaching sessions with the rounding HIV/ID attending at UMass. Fellows may also do collaborative visits with other primary care providers' HIV patients. They attend all HIV team meetings and work on HIV CQI projects as well. Oral evaluation is done by the fellowship director on an ongoing basis, and the fellow completes the University of Washington on-line HIV question bank at the beginning and end of the fellowship to measure their year-end progress. The fellow is also expected to apply for credentialing as an HIV specialist with the American Academy of HIV medicine at the completion of their fellowship.

**Development of a Center for Integrated Primary Care** (Dan Mullin, PsyD, Director)

As the department's Director for Behavioral Science from 1996-2015, Alexander Blount, EdD has been a pioneer in describing and implementing the integration of Behavioral Health and Primary Care. Under his direction, the department recruited Behavioral Science faculty to work in an integrated fashion within our clinical training sites, and as their clinical and teaching roles became established, he created the post doctoral Fellowship In Primary Care Psychology. He then established a series of online courses for health care professionals involved in integrated primary care, including physicians, behavioral health providers, care managers, case managers, social workers, nurses, and other allied health providers. In 2011, he brought these courses under the umbrella of a new UMass Center for Integrated Primary Care. Today, the Center primarily serves to provide education and training to a broad audience of local, regional, national and international learners, in addition to serving as consultants to those that are interested in developing integrated care programs.

On-line training courses offered by CIPC aim at providing in-depth training to help behavioral health professionals, care managers, administrators and physician leaders build the expertise needed for the integration of Behavioral Health and primary care. Continuing education units are offered for many disciplines. The current courses include the following:



- ***Creating and Managing an Integrated Primary Care Practice:*** A One Day Mini-Course for Administrators and Physicians
- **Primary Care Behavioral Health:** for behavioral health providers transitioning from a specialty practice to a primary care setting
- ***Integrated Care Management:*** For care managers, case managers, social workers, nurses and any of the allied health fields involved in care management
- **Motivational Interviewing:** for physicians, behavioral health providers and any allied health field involved in working with patients to change health behaviors

In addition to formal courses offered by the CIPC, the faculty and Fellows also provide consultation to entities focusing on integrated behavioral health as a part of their practice transformation activities. One major entity has been the Massachusetts Medicaid program, which has utilized the expertise of the Center (through a contract with Commonwealth Medicine) devoted to transforming practices caring for MassHealth patients.

Dr. Blount retired in 2015 (remaining on with the department on a part time basis), and leadership of the CIPC was entrusted to Dan Mullin, PsyD.

### Learning Outcomes

**Measurement of learner outcomes, and how the department utilizes assessment data:** The department utilizes the outcomes data provided from undergraduate, residency and fellowship programs for quality improvement of courses, evaluation of individual faculty performance, and to assess residents and fellows in becoming accomplished and professional clinicians.

The residency program and fellowship Directors routinely use multi-model assessments including written and oral training examinations, self-evaluations, and feedback from trainees via informal feedback as well as written evaluations on an ongoing basis to inform resident performance. The *e-Value* system is used to collect evaluation data from dispersed clinical sites. Additional evaluation methods include demonstration of competency along with procedure logs. Residents and Fellows take an in-service exam each year. This past year has seen a move to utilize milestones as measures of competence along with expected professional assessments methods. Each program has an evaluation committee responsible for review of the program and trainees. The program is evaluated through annual review by the faculty and current fellows. Graduate surveys also are taken post-graduation. Board pass rates and in service exam scores are also tracked.

### Challenges and Opportunities

While the department is proud of its robust training programs and curricular offerings, there are challenges ahead. The primary challenge is that **the percentage of UMass medical students matching into Family Medicine continues to slowly decline**. While we remain above the national average in the number of students choosing Family Medicine, this challenge has been frustrating. We continue to look for ways to insure that students are placed in excellent training sites with enthusiastic Family Medicine role models, and to find ways to expose students to Family Medicine.

Coupled with the declining interest in Family Medicine has been the **struggle to find sufficient numbers of Family Medicine preceptors** to teach. We have increasing competition for our preceptors who also agree to precept students from other medical schools and for NP and PA students. We are considering a change in the way we utilize our larger clinical and residency sites, which currently host one student per block; the proposal would expand the number of students hosted at each site, under the direction of a designated faculty member. The primary barriers include space, equipment (primarily computers), and funding for faculty time at each site. While the medical school has expanded its class size, which increases the demand

for preceptors, there has been no increase in departmental funding to assist with such an expansion. We are in early discussion with the MassAHEC Network to consider a partnership that would support such an expansion, with the addition of additional learners which would align with the AHEC goal of supporting interprofessional education.

Another challenge is the **maintenance of educational innovation as we are experiencing a loss of discretionary funding from HRSA and from the medical school.** HRSA has supported close to four decades of innovative programming in community health, cultural competence, quality, and training to support serving a variety of underserved populations from geriatrics to the disabled. In addition, the medical school's formula-based funding for education is limited to faculty who teach required courses, and only for the specific time required to teach each course. Maintaining innovation without ongoing support is a challenge. At this time, we are committed to cross funding specified projects from clinical revenues. This is discussed further in (J) Finances and Administration.

Finally we are faced with a challenge and opportunity as the school has just entered into a **formal affiliation with Baystate Health in Springfield to develop a 'Western Campus' for the medical school.** Once fully operationalized, the class will expand by another 25 students/year who will be placed at Baystate for the bulk of their clinical years. Historically, Baystate has embraced a medicine-pediatrics model of primary care and does not have a Family Medicine Department, even though a number of family physicians are credentialed through the Department of Medicine. As we have been invited to help them to address this problem, it will present a challenge to provide an environment conducive to Family Medicine values. However, the intent of the new training track at this 'western campus' is to focus on community oriented urban and rural health care – areas in which our department has considerable expertise. We will be working with the AHEC and the educational leaders at Baystate to formally develop a Family Medicine experience.

## F. Clinical Services

**Summary:** The department supports and is affiliated with an array of practices providing clinical services to vulnerable and complex populations. Across the faculty, there is expertise in a variety of clinical areas, including Hospital Medicine, Advanced Obstetrics, Sports Medicine, Geriatrics, Palliative Care, Student Health, health care to the homeless, care for patients with developmental and intellectual disabilities, and addiction medicine. The department is a national leader in the integration of behavioral health into primary care, and we partner with a community mental health center to integrate primary care into their mental health services setting.

We have also been active in the transformation of our practices, and as consultants in practice transformation across the state. In 2014 we entered into a pilot Primary Care Payment Reform (PCPR) program sponsored by the Massachusetts Medicaid program, providing us with capitation for primary care services, as well as integrated behavioral health and psychiatric services. 7% of our FY15 patient care revenues were paid on a capitated basis.

Challenges include finding new clinical revenue sources, defining and demonstrating quality, and finding optimal ways to work with our hospital system in order to more effectively translate decisions into actions, engaging faculty in the ownership of change.

As we revisited the department's strategic plan for clinical services, we continued to set our sights on innovation, practice transformation, and quality improvement, recognizing the strengths that we bring to the clinical system as we continue to provide care for some of the most complex patients in the community. We have embedded the Quadruple Aim in our strategy, realizing that the journey from fee-for-service to population health will take require time and an engaged workforce.

### **Strategic Plan for Clinical Services**

**Our 2015 strategic goal for clinical services:** *We will provide and promote equitable and accessible, innovative, high quality, evidence based clinical care to diverse communities*

**We strive to accomplish this goal by focusing on five key strategies:**

- *We will recruit and retain a Family Medicine workforce of a size and breadth to meet the needs of the diverse community of central Massachusetts*
- *We will support innovative systems and programs, with emphasis on integrated behavioral health, that support all department practices in the care of patients across the entire spectrum of clinical conditions and settings of care delivery*
- *We will implement practice improvements that increase the satisfaction of our physicians, the health care delivery team, and our patients, and improve quality and effectiveness of care*
- *We will apply methods for the creation, measurement, and maintenance of a clinically superior healthcare workforce with highlight on the preservation of the patient/physician relationship*
- *Our clinical services will be inspired by the principles of the Quadruple Aim of better health and better health care, at lower cost, with improvement in the work life of our Family Medicine workforce*

## **Introduction**

Dennis Dimitri, MD serves as Vice Chair for clinical services. The department credentials clinicians providing care across central Massachusetts; a roster can be found in Appendix A-7. During the review period, our total credentialed physician membership grew from 100 in 2008 to 150 in 2015, with over 80% serving as members of the Active or Active Referring medical staff at UMass Memorial Medical Center, indicating that the Medical Center is their primary hospital affiliation:

- The majority are members of the UMass Memorial Medical Group (UMMMG), including academically oriented faculty based at the University and within the Worcester and Fitchburg Family Medicine residencies, as well as clinicians based within the UMMMG's Community Medical Group sites across Worcester County;
- A quarter are based at our two Worcester Community Health Center partners, Family Health Center of Worcester, and Edward M. Kennedy Health Center; and
- About 20% are in independent practices.

In northern Worcester County, members of the Medical Group include academic faculty in the Fitchburg Family Medicine Residency, and physicians in the Community Medical Group. They utilize UMass Memorial's member hospital, HealthAlliance Hospital in Leominster, for inpatient services, maintaining courtesy staff appointments at UMass Memorial Medical Center,

In addition to physicians, 15 affiliate staff are credentialed within the department, including nurse practitioners, physician assistants, clinical social workers and clinical psychologists. This group is actively growing, especially in those devoted to Behavioral Health.

## **Infrastructure to support clinical services**

Dr. Dimitri works closely with the Medical Directors at each of the department's practices, holding a monthly Medical Directors' meeting and monthly hospital/ group practice business meetings at each health center. He sits on the clinical system's Managed Care Committee, which oversees the system's managed care contracts and funds flow related to those contracts.

**Credentialing:** Dr. Dimitri is responsible for clinical credentialing for the department. For credentialing Family Physicians in maternity care and advanced Obstetrics, he is assisted by Anita Kostecki, MD, who serves as the department's Director for Maternal and Newborn Services and as liaison with the Department of OB/GYN.

The department's Nurse Practitioners, Physician Assistants, and Licensed Clinical Social Workers are credentialed by the medical staff's Affiliate Practitioner Credentials Committee, which is chaired by Jay Broadhurst, MD, MHA.

**Morbidity & Mortality conference:** With oversight from Jeremy Golding, MD, the department holds a monthly Morbidity and Mortality conference. In order to maintain high relevance for family physicians, the focus of the M&M was changed a number of years ago from the traditional emphasis on hospital complications to the interface of outpatient and inpatient care. On a rotating basis, each clinical site is asked to present a difficult case, often with complications brought on by systems or communications problems. A significant percentage of the cases are chosen from outpatient settings. While specialists from other departments are often invited to participate, members of the department's faculty usually provide expert commentary.

**Grand Rounds:** Dr. Golding also provides oversight for the department's weekly Grand Rounds. Speaker selection is the responsibility of each department site and program on a rotating basis, and speakers are asked to consider practicing Family Physicians as the target audience for their presentations. Prescribed CME credit from the AAFP is provided. Grand Rounds originates from the Memorial campus amphitheater, with videoconferencing to conference rooms at the Benedict Building, the Barre Family Health Center, Community Health Connections/ Family Health Center in Fitchburg, the Hahnemann Family Health Center, Family Health

Center of Worcester, and HealthAlliance Hospital in Leominster. In addition, sessions are webcast to anyone with internet access; we often have over 50 participants signed in for Grand Rounds webcasts, including residency graduates across the country. Grand Rounds are recorded and archived, and are available for viewing.

**Maintenance of Certification:** Drs. Bob Baldor and Frank Domino host an annual session for the faculty devoted to Family Medicine Maintenance of Certification. Each year they select a topic from the American Board of Family Medicine's list of Self Assessment Modules, presenting an overview of the topic followed by interactive reviews of on-line questions and patient simulation activities.

**Business meetings:** The department schedules two business meetings each year. Typically one meeting focuses on business that is of particular importance to the employed faculty, while the other may focus on broader hospital or health system issues of importance to all Family Physicians on the medical staff.

**Inpatient Care at UMass Memorial Medical Center:** At the Medical Center, the department manages its own Family Medicine Inpatient service (FMIS), based on South 6 at the Memorial campus. FMIS serves as home for a large portion of inpatient resident training for the Worcester Family Medicine residency. Medical Center data from the last 6 fiscal years is as follows:

	FY10	FY11	FY12	FY13	FY14	FY15
<b>Inpatients under the care of a Family Physician</b>						
Adults	2,390	2,498	2,558	2,649	2,067	2,313
Children	47	4	1	2	0	0
Newborns	711	782	694	665	683	665
Mothers	535	601	562	555	575	610
Total	3,683	3,885	3,815	3,871	3,325	3,588
<b>Inpatients cared for by specialists with a Family Physician identified as the PCP</b>						
Referred Patients	6,779	6,888	7,105	6,960	7,578	6,865
Total FM inpatients	10,462	10,773	10,920	10,831	10,903	10,453

- Approximately 95% of the adult inpatient discharges on the first row of the table were cared for by our Family Medicine Hospitalists, with the remainder cared for by those who make hospital rounds on their inpatients.  
Children are cared for by Pediatric Hospitalists at the University campus.
- The total number of discharges from the Medical Center runs approximately 36,690/year. Over the past several years, patients originating in a Family Medicine practice – 10,453 in FY 15 – have remained stable, with small variations in the distribution between adult, obstetrical and newborn care provided by family physicians and stable numbers of discharges by specialists caring for our patients.

**Hospital Medicine Service:** While some members of the department still round on their own inpatients, the majority rely on the department's Hospital Medicine service at the Medical Center's Memorial campus. Beth Koester, MD serves as Director of the Service. Our Family Medicine hospitalist faculty are based within a Division that is jointly sponsored with the Department of Medicine. The faculty on the service provided care for over 2,100 adult inpatients in FY15, a number that was up 9% in the last year after increasing by more than 50% during the prior two years as most department members and practices turned to the service to manage the care of their adult inpatients. The practices of over 80 Family Physicians are now covered by the service.

The Hospital Medicine team is integrated with the Worcester Family Medicine residency's Family Medicine Inpatient Service. The faculty provides a standardized curriculum for residents on their adult inpatient rotations. They are also involved in undergraduate medical education as well, providing oversight of the fourth year Family Medicine Subinternship, and teaching in the third year Clerkship.

**Family Medicine Maternity Services in Worcester:** Maternity care takes place at the Medical Center's Memorial's Memorial campus, which is also the perinatal and neonatal referral center for central Massachusetts. While regional trends have shown a decrease in the birthrate, the percentage of deliveries performed by family physicians at the Medical Center has remained steady at about 14%.

A department-wide obstetrical coverage system that includes Family Physicians at residency sites, community health centers, and community practices has been continued and enhanced. This system provides organized supervision and exposure of residents to Family Medicine maternity care, increased obstetrical experience for attending physicians participating in the coverage system, and standardization of care. The larger organized coverage system has also responded to the needs of faculty participants for an improved work-life balance by spreading call responsibility over a larger group of physicians. Individual physicians are still free to deliver their own continuity patients.

### Clinical venues and recent statistics

**Ambulatory Care at UMass Memorial Medical Center-Based Health Centers:** The Family Health Centers in which our faculty practice which are managed in conjunction with UMass Memorial Medical Center include:

- Located 24 miles northwest of Worcester, the **Barre Family Health Center** is the only rural academic health center in Massachusetts. It serves as one of the three Family Health Center training sites for the Worcester Family Medicine residency. For over four decades, the health center and the residency have served as the sole provider of health care for Barre and ten surrounding rural communities. Barre developed as a small industrial town, while most of the surrounding communities have roots both in agriculture and dairy farming. The population consists of large numbers of long term residents and a growing number of more recent settlers who live in the country and commute to work. The health center is based in a facility that was built in 2007 to replace an outmoded facility at the same site. Dr. Stephen Earls has served as Medical Director since 1989. He played an instrumental role in raising over \$2.7 million from the local community to build the state-of-the art building, which includes an emergency/procedure room, radiology, mammography, and bone densitometry.
- **Benedict Family Medicine Services** is based at the UMass Memorial University campus, which is also the main location for the medical school. It shares the first floor of the Benedict Building with the Department of Medicine's primary care clinic. It does not host resident training, but serves as a medical student training site. In addition to Family Medicine services (without obstetrics), it is responsible for Student Health services for the Medical School, the Graduate School of Nursing, and the Graduate School of Biomedical Science. This site also provides primary care to patients referred to our tertiary care medical center for complex disorders, allowing them to receive integrated care in one location. Joseph DiFranza, MD was appointed Medical Director in 2012, and Phil Fournier, MD serves as Medical Director for UMass Medical School Student Health Services.
- The **Hahnemann Family Health Center** was established in 1975 as an outgrowth of a local Family Physician's practice. It serves as one of the three Family Health Center training sites for the Worcester Family Medicine residency. The practice still includes many of its original patients, as well as a large population from the many close-knit urban neighborhoods that surround the city center, resulting in patient panels that are diverse with respect to age, ethnicity and socioeconomic status. The health center supports student health programs at Worcester Polytechnic Institute, Clark University, and the College of the Holy Cross. In addition the health center provides clinical training for pharmacy students, and residents from the UMass OB/GYN residency. David Gilchrist, MD was appointed Medical Director in 2013, and Christine Purington, MD has served as Medical Director for College Health Services.

- **Plumley Village Health Services** is a small practice serving an urban neighborhood of Worcester. The practice was founded in 1992 as a collaboration between Plumley Village East housing development and UMass Memorial HealthCare in response to resident requests for improved access to primary care services. The practice has grown over the years from a small referral center to a full-spectrum Family Medicine practice with over 2000 patients. The patient population is predominantly Hispanic, low-income, and with both medical and social needs. The practice strives to address the barriers to access that are experienced by its patients, providing culturally and linguistically appropriate services. It uses a community-oriented approach to design outreach and education activities, and employs a community health worker. Recent managed care contracts have enabled the practice to hire a part-time social worker who will assist with care coordination as well as providing integrated behavioral health services. The practice is a teaching site for medical students and Family Medicine residents. Katharine Barnard, MD serves as Medical Director.

These four practices are hospital outpatient facilities subject to JCAHO requirements, and are regulated by the Massachusetts Department of Public Health. Physicians, psychologists, social workers and mid-level practitioners are Medical Group employees who report up to the Chair. Practice managers and staff are hospital employees reporting up through Barbara Fisher, Senior Vice President for Hospital Operations. In 2015, these health centers conducted over 91,000 ambulatory visits:

	2014-2015
Barre Family Health Center:	39,825
Benedict Family Medicine:	19,653
Hahnemann Family Health Center:	24,781
Plumley Village Health Services:	6,812

The health centers are all actively involved in practice reengineering, imbedding the elements of the Patient Centered Medical Home in the fabric of their work. A key feature of practice transformation has been the integration of behavioral health into the practices. All of the health centers have achieved level 3 NCQA PCMH certification, and in 2015 the Barre Family Health Center became the first to receive recertification as a PCMH under updated NCQA requirements.

The **Family Health Center of Worcester** is an independent Federally Qualified Health Center serving over 33,000 patients from the greater Worcester area in over 37 different languages. Services include comprehensive primary care and family medicine, maternal and child health, dentistry, mental and behavioral health, vision care, a Walk In Center for urgent and primary care, a low-cost pharmacy, lab, radiology and digital mammography, a Refugee Health Clinic, a Teen Health clinic, the Homeless Families Program (directed by Vice Chair Linda Weinreb, MD), HIV counseling and testing, health education and promotion programming, and public health programs for the early detection and prevention of disease. FHCW also operates 6 school-based health centers within the Worcester Public Schools and four WIC (Women Infant & Children) offices throughout the greater Worcester area. The health center is certified by the NCQA as a Level 3 PCMH.

Tom Byrne, MD serves as Chief Medical Officer and Vice President of Provider Services, and Frances Anthes, serves as President and CEO. The health center serves as one of the three ambulatory training sites for the Worcester Family Medicine residency. In addition, the health center supports a Family Nurse Practitioner training program, a Fellowship in HIV/Hepatitis C, and a Global Health Fellowship. It promotes team-based care strategies and provides group visits for diabetes and prenatal care.

The **Edward M. Kennedy Community Health Center** is an independent Federally Qualified Health Center serving over 28,000 patients through three medical facilities, three dental sites, two optometry practices and six school-based clinics serving residents of Worcester, Framingham, Clinton, Milford, and the surrounding communities of MetroWest and Central Massachusetts. Its Worcester location is its largest site, with its Family Physicians admitting their patients to the Hospital Medicine service. It provides prenatal care on site,

with deliveries provided by our department-wide obstetrical coverage system (see below), under the direction of Anita Kostecki, MD, the department's Director for Maternal and Newborn Services, who is based at the health center. Toni Maguire, RN, MPH serves as President and CEO, and Michele Pici, DO serves as Chief Medical Officer.

The health center's Worcester site is certified by the NCQA as a Level 3 PCMH.

**Patient Care in Fitchburg – major transitions in 2012-15:** Fitchburg is a city of approximately 40,000 population 32 miles north of Worcester. In 1978, the department's second Family Medicine residency was established in Fitchburg within the private practice of Robert Babineau, MD, with inpatient training at Fitchburg's Burbank Hospital. Over many years, as the residency practice transitioned from a private practice to a faculty practice managed by the department, it became a safety net practice for northern Worcester County, with a shift in the payer mix toward a higher percentage of Medicaid and uninsured. In addition, the Burbank Hospital merged with neighboring Leominster Hospital (located 5 miles from each other) to become HealthAlliance Hospital. The Burbank campus closed as an acute care facility, and the residency practice, which had outgrown its original site, was relocated to the former labor and delivery floor of the building. This was seen as a temporary move for the practice.

Recognizing these trends, with the urging of Congressman John Olver, the department partnered with a local community group, and in 2003 ownership of the practice shifted to a new Federally Qualified Community Health Center, Community Health Connections, with the dual mission of service to the community and a continuing commitment to Family Medicine resident education. A fairly unique feature of the relationship was that the clinicians – faculty physicians, nurse practitioners and physician assistants, and the residents – remained as department employees, while the staff became employees of the new health center. The health center contracted with the department for their clinical services, and took on the responsibility of managing the practice and its billing operation. The health center also contracted with the department to provide leadership services for both the medical practice (the residency's Medical Director, Beth Maczyk, MD, was appointed as the health center's Medical Director) and the center's new mental health department (the residency's Director for Behavioral Science, Nicholas Apostoleris, PhD was appointed as the health center's Mental Health Director; he was subsequently asked to serve as Chief Operating Officer for the health center).

For several years, the new health center was successful, based within the former hospital facility. It was awarded additional federal and state grants to expand its programs, including an outreach program for homeless and publically housed adults and children, developed and directed by Dr. Apostoleris. The health center was also awarded a \$11 million award from HRSA to build a new facility next door to hospital building, Ground was broken in 2013 for a large \$16 million facility to be supported in large part by a combination of federal grant dollars and money raised from the community.

In 2011, the health center began to experience serious problems with its financial systems, particularly its billing operation. Payments to the department and to HealthAlliance Hospital (its landlord) gradually came to a halt, and the center's debt to the two UMass Memorial entities grew to over \$2 million. The working relationship between the partners became difficult, and the center's Board directed that medical and mental health leadership should be transferred to personnel employed by the health center. Dr. Maczyk resigned, recruited to be the Medical Director at a Community Health Center in Boston, and Dr. Apostoleris stepped down as the health center's COO, remaining with the practice, serving as our interim Chief, overseeing all of the department's activities at the center.

In the fall of 2013, the department gave notice that it would not provide clinical services for the health center after June, 2014. The HealthAlliance Hospital Board quickly stepped in, directing the hospital to develop and manage a new site for the residency and its practice. After a number of potential sites were considered, the hospital, recognizing that the health center's cash flow problems were also affected by the cost of bringing their new building on line, negotiated with the center to lease space within the new building for a practice that would be operated as a hospital outpatient facility. The decision unleashed a series of initiatives from the hospital to develop and license a new practice, and from the department to provide residents with assurances that their program would remain intact, and to recruit a new cohort of residents to a program



undergoing a major transition. Dean Terry Flotte played a very active role in meeting and communicating with the residents, and the program filled in the match.

In July, 2014 the practice began operations in new clinical and teaching space leased from the health center, with Dr. Apostoleris continuing to serve as Chief. On the opening day, all residents remained with the program, and we maintained a critical mass of faculty to sustain the program. The patients of those faculty and residents were invited to move across the hall from the health center to the new practice, and by the end of its first year of operation, the practice had seen 15,600 visits.

A search was undertaken for a Medical Director, and in August, 2015 Dr. Mazyck was recruited back to the program to serve in that role. Dr. Apostoleris (who at the time was serving as President of the Board of the National Health Care for the Homeless Council) was recruited to be the CEO for the Appalachian Mountain Community Health Centers in Asheville, NC. Through it all, Jim Ledwith, MD served as residency program Director.

**Inpatient care in Fitchburg:** Fitchburg patients who require hospital admission are admitted to HealthAlliance Hospital, which provides a teaching service for Fitchburg Family Medicine residents and some UMass 4th year medical students on their required inpatient sub-internship. David Ammerman, MD directs the service.

**Integration of Behavioral Health into Primary Care:** Under the leadership of Alexander (Sandy) Blount, EdD, the department has been a national leader in the integration of behavioral health into primary care, with a series of clinical and training programs. Imbedded into the Barre, Benedict and Hahnemann practices, behavioral science faculty work with our family physicians and residents as part of an integrated clinical care model. In recent years, the health centers have begun to augment their capacity in behavioral health with the addition of social workers to their clinical teams. A full time behavioral health faculty position has just been added to our Fitchburg practice.

The behavioral health faculty teach students, residents and Primary Care Psychology Fellows, and participate in training programs sponsored by the UMass Center for Integrated Primary Care (discussed in detail in the section devoted to Education).

**Psychiatry integration and co-location:** Faculty from the Department of Psychiatry provide on-site consultation at the Barre, Benedict, Plumley and Hahnemann practices, and in 2015, the Department of Psychiatry co-located and integrated a portion of its outpatient practice and residency at the Hahnemann Family Health Center.

**Integration of primary care into mental health settings:** Community Healthlink (CHL) is a member of UMass Memorial Health Care providing prevention, treatment and recovery programs addressing mental health, addiction, and homelessness. The department works closely with CHL to provide primary care services within settings serving CHL clients in Worcester and Leominster. Erik Garcia, MD serves as Medical Director for the Worcester Homeless Outreach and Advocacy Program, and has provided primary care services within CHL. In 2015, two additional physicians were added to the program to build upon this initiative to integrate medical care into settings where patients with serious mental illness get most of their care.

**Other clinical services:** Faculty members provide services in several additional programs:

- Faculty provide **student health services for UMass Medical School** (Phil Fournier, MD, Medical Director), based within the Benedict practice on the university campus, **and at Clark University, the College of the Holy Cross, and Worcester Polytechnic Institute** (Chris Purington, MD, Medical Director).
- Our **Sports Medicine** faculty and fellows (Herb Stevenson, MD, Director) provide services from clinics to the sidelines and finish lines at athletic events across the state, including the Boston Marathon.
- Faculty serve in leadership roles in **addiction medicine** (Jeff Baxter, MD, Chief Medical Officer, Spectrum Health Systems). Most faculty and resident physicians provide medication-assisted treatment for opioid addiction at the Family Health Center of Worcester, Hahnemann Family Health Center, Barre Family Health Center, Community Health Connections of Fitchburg and Plumley Village Health Center.

- Dr. Bob Baldor provides leadership in the provision of **care for patients with developmental and intellectual disabilities**, and in 2016 the department has recruited a second faculty member to build on this service
- Three faculty members provide **advanced obstetrical services**, with credentials to perform cesarean sections.
- Some faculty members are also based within Divisions co-sponsored by our department and the Department of Medicine in **Geriatrics** and in **Palliative Care** (Jennifer Reidy, MD, co-Director).
- The **UMass Memorial Ronald McDonald Care Mobile** is a mobile health van donated by the Ronald McDonald House Charities. It serves as an access site providing medical and dental services to medically underserved school-age children and their families. The program also connects patients to ongoing care, insurance enrollment and referrals to social support services. Mónica Lowell, Vice President of Community Relations, provides leadership for the project, and Dr. James Broadhurst serves as Medical Director. It provides dental services, including screening, fluoride varnish and sealants to as many as 3000 students at 16 schools. The Care Mobile travels to ten regularly neighborhood scheduled sites in Worcester. In addition, the Care Mobile conducts outreach activities by participating at ethnic festivals and neighborhood block parties.

### **Practice transformation**

In 2005, we recruited Jeanne McBride, RN, BSN, as our first Quality Improvement Project Manager. She was charged with serving as a resource to practices, identifying exemplars, and working to spread new approaches to any practice in the department with an interest in innovation. With her support, a number of initiatives were implemented. An internal collaborative for advanced access/office redesign was established. A diabetic group visit program was established at the Hahnemann Family Health Center. Planned care for asthma and depression management was instituted at Plumley Village and for diabetes at the Barre Family Health Center. A group visit program for prenatal visits was established at the Family Health Center of Worcester. Third year resident projects in the Worcester Family Medicine residency began to focus on practice improvement projects. Practices worked on a variety of processes, such as processing forms and lab results, scheduling templates and guidelines, processing prescription refills and requests, creating a patient welcome brochure, relocating of telephone triage areas and improving patient flow through huddles and other communication tools.

In 2007, UMass Memorial Health Care CEO John O'Brien asked Dr. Lasser to work with other primary care leaders to establish a focal point for primary care for the clinical system, which was designated as the Center for the Advancement of Primary Care (CAPC) in 2009. An Executive Committee included leadership from Family Medicine, General Internal Medicine, General Pediatrics, Geriatrics, and the Community Medical Group. A budget was established with support from both the clinical system and the medical school. Barbara Weinstein, MBA was recruited as the Center's Senior Director, and in 2008, the department's Quality Improvement Project Manager moved into the CAPC.

A faculty member from the Hahnemann Family Health Center, Ron Adler, MD, was appointed as the CAPC's Director for Primary Care Practice Improvement, and he was supported to complete training as an Improvement Advisor at the Institute for HealthCare Improvement in Boston. He focused his early project work on the development of diabetes registries, working in collaboration with the UMass Memorial Diabetes Center. Four waves of diabetes collaboratives were implemented. This was UMass Memorial's first experience working with registries and chronic disease management collaboratives.

Over the next several years, the CAPC took on a variety of projects, including a centralized approach to primary care recruiting, advocacy and marketing for primary care, and media training to prepare primary care physicians to be available to the Public Relations office when they are approached by the media with various questions. The Center published a newsletter, sponsored a monthly webinar, and produced an Annual Report. A series of activities took place during national Primary Care Week, including visits by the CEO to primary care practices. Activities focused on the medical school included a welcome letter from the Center

to all medical school applicants who received acceptance letters, offering them an opportunity to speak with a member of the primary care faculty from their local area, an annual Primary Care dinner, summer projects for students, and mentoring of student leaders who were responsible for a “Primary Care Principles (PCP) Group. The Center engaged outside consultation to conduct a primary care workforce analysis of the central Massachusetts market, which helped to drive practice development and recruitment for the clinical system. In 2007, Dr. Lasser served as PI (with co-PI Julia Andrieni, MD, Vice Chair and Chief for General Internal Medicine) for a successful interdepartmental Title VII “Establishing Departments” grant which created a one-year part time “Quality Scholars” program for primary care faculty. It also established curricula which were incorporated into all four years of the medical school, as well as into the residency training programs in Family Medicine, Internal Medicine, and Pediatrics. Alan Chuman served as Project Director for this three year effort.

In 2010, the CAPC sponsored an initiative to transform six practices into Patient Centered Medical Homes. Two received support from the state through a Patient Centered Medical Home Initiative, and four received financial support from UMass Memorial Health Care. The original position of Quality Improvement Project Manager grew into a cadre of Practice Improvement Facilitators (PIFs), and care managers were recruited to work at each of the practices, where planning was initiated to certify them as Level 3 NCQA Patient Centered Medical Homes. Even though practice finances were still based in fee-for-service, a new compensation plan was established for physicians in the four system-supported practices, with bonuses aligned with process measures based on movement toward the attributes of a PCMH. The practices were all certified as Level 3 Patient Centered Medical Homes.

In 2013, UMass Memorial’s Managed Care Network signed a new “Alternative Quality Contract” with Blue Cross/Blue Shield of Massachusetts. The contract sets clinical incentives based on achieving a series of primary care and inpatient quality metrics, which in turn affect rates across the contract and how risk sharing is calculated related to total medical expense. In anticipation of the system’s need to focus on population health, UMass Memorial established a new Office for Clinical Integration (OCI), which became heavily focused on assisting primary care practices to achieve the quality metrics dictated by the AQC contract. Resources and staff were shifted from the CAPC to the new Office, and some of the resources that were developed through the PCMH project, such as practice-based care managers, were discontinued. Much of the work that had been accomplished within the CAPC, including the development of the role of the Practice Improvement Facilitators and the registries, was utilized as the base for a much more robust series of initiatives that were made available to all primary care practices in the clinical system through the OCI. In addition, the “Quality Scholars” program was institutionalized within the hospital system, and made available to all specialties, not just primary care.

The former CAPC Executive Committee (leadership from Family Medicine, General Internal Medicine, General Pediatrics, and the Community Medical Group) now meets monthly with leadership from the hospital and the Medical Group as a Primary Care Executive Committee, co-chaired by Dr. Lasser and Ms. Weinstein (who now serves as Associate Vice President and Chief Administrator for Population Health within the clinical system).

**Consultation to and involvement with the state’s MassHealth program:** Over the past several years, the state’s Medicaid program has initiated projects to encourage practices to develop as medical homes. Commonwealth Medicine, serving as a contractor for the state in these efforts, has provided opportunities for department faculty and our Primary Care Psychology Fellows to serve as facilitators for other practices, as well as to serve on advisory panels. Behavioral Science Director Alexander (Sandy) Blount EdD was particularly instrumental in advising the state about the importance of supporting integrated behavioral health within capitated programs, and an initiative that was established by the state in 2014 provided three levels of primary care capitation, dependent on the degree of behavioral health and/or psychiatric integration within a practice. The department’s Benedict, Barre, Plumley and Hahnemann practices are in their second year of this Primary Care Payment Reform (PCPR) initiative, which pays a capitated rate for primary care services, in addition to a rate enhancement for the onsite presence of integrated behavioral health services, and a further enhancement for the onsite presence of integrated psychiatric services. As a

result of this program, we are expanding or enhance our provider staffing to augment staffing in behavioral health, on-site psychiatry, and social work.

**Quality:** Over the past few years, much of the work related to quality improvement has focused on practice transformation, introduction of Lean methodologies, and a series of clinical metrics linked to insurance products, notably Blue Cross' Alternative Quality Care contract. Department performance in the first years of this contract has been lower than desired. Concentrated outreach efforts and PDSA initiatives within practices devoted to turning around scores on individual measures have resulted in improvement in scores. Internal quality related incentives from the system now comprise a growing component of the overall incentive compensation for faculty.

Roger Luckmann serves UMass Memorial Medical Center as a Physician Quality Officer, and he oversees the staff who provide outreach support to the department's practices.

**Practice management, the pace of change, and the introduction of Lean:** As noted in (C) devoted to Organization and Climate, the faculty have felt frustrated by a lack of resources to get their work done, staffing, problems with patient scheduling and with managing referrals, slowness of decision-making, and problems with patient flow. These issues are compounded by the increasing complexity of the patient population that gets its care within the hospital's safety net environment. Despite the PCPR program, clinical revenues are still predominantly based on fee-for-service, and within hospital settings, it is hard to provide many of the resources and transformed processes that support providing population-based care to vulnerable populations.

In 2014, the department declared "Making the Practices Work Better" as a "must do/can't fail" priority, and this continues to be a top priority. We adopted the use of Lean management techniques to complete projects that could make small tangible changes in the practices. Projects have ranged from the establishment of idea boards at each practice site and standardization of exam rooms to the piloting of the use of scribes in Barre, with a rigorous evaluation process by research faculty which resulted in presentations and a paper submitted for publication. In return for a slight increase in productivity to finance the program, faculty have found increased face-to-face time with patients, and greatly reduced time needed for documentation at work and at home. Based on this evaluation process, and successful negotiation with the hospital, we now have scribes working in four of our ambulatory sites.

To track progress, Administrator Alan Chuman led an A3 devoted to periodic measurement of faculty attitudes toward their practices. These are administered every few months, and the results are tracked by the Leadership Team.

In 2015, responding to the Medical Group's low physician engagement scores, the hospital and the Medical Group convened a workgroup devoted to restructuring and streamlining the decision-making process within four pilot clinics, including the Hahnemann Family Health Center. In addition, under Dr. Gilchrist's leadership, the Hahnemann practice has now become a Lean "model cell" site, focused on adoption of Lean principles to improve performance.

### **Challenges/Opportunities**

**Finding new clinical revenues:** As noted in (H) Finances and Administration, the department's financial success is most directly related to its clinical services. Under Dr. Gilchrist's leadership, the Leadership Team is conducting an A3 exercise devoted to increasing the department's clinical margin by \$250,000. We are actively looking at ways to expand services, provide new services, and to keep some specialty services within our practices through the development of faculty who have special clinical interests.

**Quality:** Despite considerable efforts, our practices continue to experience scores on the lower end of measures followed in the system's Blue Cross AQC contract, though scores have improved. While there is a clear understanding of the need to demonstrate quality, there is an undercurrent of frustration with what seems to some as a preoccupation with a limited definition of quality, particularly for safety net practices.

**Accomplishing meaningful change within hospital facilities:** The largest ongoing challenge in the clinical practices is the day-to-day frustration with the inefficient decision-making and operations structure of the hospital, making it difficult to translate decisions into actions, and difficult to engage faculty in the ownership of change. We have developed a good working relationship with our hospital partners, but the challenge is ongoing. It is a challenge common to teaching hospitals, but nonetheless frustrating.

**Developing new funding opportunities:** Despite the challenges, the opportunities are exciting. As noted above, our participation in the MassHealth Primary Care Payment Reform initiative has provided additional resources for behavioral health and social work services in several of our practices. The system recently established a Medicare ACO, and a Medicaid ACO is on the horizon, most likely in 2017. This progression we expect will result in greater support for primary care and greater opportunity to broaden the work of our practices on behalf of our patients.

Over the past few years, we have seen a number of opportunities to support pilot programs and clinical innovations which might support both practice innovation and our focus on population health. Some are practice-specific, and can be managed within our department. A recent example is a \$100,000 award from the Massachusetts Department of Public Health to enhance office-based opioid treatment in the Barre Family Health Center, authored by Daniel Mullin, PsyD. Others, such as the current proposal from the Center for Medicare and Medicaid Innovation to develop Accountable Health Communities Models, are potential projects where the department can play a significant leadership role working with the UMass Memorial Health Care system and/or with Commonwealth Medicine.



## **G. Community Health**

**Summary:** The department's focus on the health of populations, particularly those most vulnerable, is woven across our clinical, educational and scholarly missions. We are established as a local clinical leader devoted to improvement of the health equity of populations experiencing health disparities. In addition, we lead many educational initiatives in community and public health as well as service learning across the four years of medical school and across disciplines. The relationship with Commonwealth Medicine is fully developed and poised to benefit from multiple collaborative projects bridging health policy and clinical medicine, particularly involving the state's Medicaid program.

Looking ahead, our concerns focus on sustainability and succession planning. The medical school, Commonwealth Medicine, and HRSA's Title VII supported much of our past success. Reductions in school support and Title VII funding threaten our capacity to continue to provide leadership in Community Health. Addressing these issues will require the recruitment of new faculty with ongoing support derived from department investment/trust funds, combined with partnership with another entity such as Commonwealth Medicine.

### **Strategic Plan for Community Health**

**Our 2015 strategic goal for Community Health:** *We will integrate Community Health into our Family Medicine practices, training programs and scholarship while engaging communities and community-based coalitions to improve the health of communities and populations.*

**We will strive to accomplish this goal by focusing on three strategies:**

- *We will partner with community health centers, community agencies, and public health entities to develop community responsive services to improve health equity and reduce health disparities*
- *We will integrate training in population health concepts and the application of community health strategies within our education and clinical training programs*
- *We will implement and evaluate innovative and sustainable models of health care for diverse and vulnerable populations, serving as an academic partner for Commonwealth Medicine and other departments*

### **Background**

Shortly after his appointment as Chair, Dr. Lasser led a robust listserv discussion of the meaning of the name of the department. The faculty endorsed the concept that the department should be devoted to two separate but very complimentary disciplines – Family Medicine and Community Health – with the a focus on improving the health of populations. In 2004, an organizational framework for Community Health was formalized with the appointments of Warren Ferguson, MD as Vice Chair for Community Health and Suzanne Cashman, ScD as Director of Community Health. A strategic plan provided a blueprint for community health work across the department. With education and practice increasingly including a focus on populations' health and social determinants of health, developing a strong department Community Health focus ensures that we continue to lead in these areas.

### **Infrastructure to support Community Health**

**Core faculty:** In his capacity as Vice Chair for Community Health, Warren Ferguson, MD provides leadership to the core faculty and to faculty engaged in community initiatives focused on vulnerable populations. He oversees the department's innovative collaboration with Commonwealth Medicine (CWM), serving as a member of its Executive Leadership Team. Within CWM, he serves as Medical Director for the statewide AHEC network, leads its activities devoted to academic Correctional Health Care, and co-leads CWM's relationship with the state's primary care association, the Massachusetts League of Community Health Centers. He has also served in several leadership positions related to diversity and health equity in both UMass Memorial Healthcare and UMass Medical School. Within the UMass Memorial clinical system, examples include development of quality committees to improve care of Limited-English-Proficiency patients and the Lesbian, Gay, Bisexual and Transgender community. For the medical school, he has led efforts to recruit and retain underrepresented faculty.

Suzanne Cashman, ScD, a national leader in community- engaged education and research, serves as Director of Community Health. She co-leads the medical school's *Determinants of Health* course, and has developed several curriculum enhancements focused on service-learning pedagogy, rural health and health policy. In addition, she has functioned as the medical school's liaison to the Boston-based Albert Schweitzer Fellowship, facilitating student application and participation. Following the award of a community health curriculum grant from AAMC-CDC, she led efforts to integrate structured community health curricular elements into the Worcester Family Medicine residency. She also represents the department in major grant initiatives, including the Clinical Translation Science Award, CDC Prevention Research Center and the Center for Health Equity Intervention Research.

Project manager Heather-Lyn Haley, PhD oversees much of our work linking the campus with the community. As Director of the Population Health Clerkship and Summer Community Assistantship, she maintains relationships with a wide range of community partners. She supports the work of the Community Health Steering Committee and represents the medical school at meetings of partner agencies including the Massachusetts Campus Compact and the Worcester Partnership for Racial and Ethnic Health Equity. Dr. Haley's community-partnered research includes work around refugee health and wellness, medical-legal partnership, and innovations in medical education to improve health equity.

**Community Health Steering Committee:** The Committee guides strategic decisions on community health priorities. It includes representation from across the department, as well as from Commonwealth Medicine, UMass Memorial Healthcare's community benefits division, the medical school's Office of Government and Community Relations, the Graduate School of Nursing and the Worcester Department of Public Health. It meets quarterly.

**Community Health Toolkit:** A rich resource for Community Health, the web-based Community Health Toolkit provides faculty, residents and students with a clearinghouse for important community-based services, statewide and local epidemiologic outcomes and concepts for measuring the health of populations. It can be found at [www.umassmed.edu/fmch/communityhealth/toolkit/](http://www.umassmed.edu/fmch/communityhealth/toolkit/)

**Newsletters:** Three Community Health newsletters are published annually and disseminated broadly, with foci cycling between clinical/service, educational and research domains. (See example in Appendix A 8-3 ).

**Funding:** Many of the department's early activities in Community Health were funded through HRSA Title VII grants. As the department institutionalized these activities and formalized a broader strategic plan for Community Health, we devoted a portion of the department's annual funding from the medical school to support infrastructure for its activities. In addition, Commonwealth Medicine has provided support for activities that are based within its partnership with the department. In 2013, the medical school changed its allocation methodology for departmental annual support, utilizing a formula-based approach that does not provide support for work in Community Health. At the present time, infrastructure for this work is cross-



funded from resources generated through clinical income and from department trust fund accounts, as well as from Commonwealth Medicine for intersecting activities.

### **Clinical, educational and research projects focused on vulnerable populations**

**Care for patients with developmental and intellectual disabilities:** Bob Baldor, MD serves as the Medical Director for the Center for Developmental Disabilities Evaluation and Research (CCDER), based at the Eunice Kennedy Shriver Center. With its focus on health care for individuals with intellectual disabilities, CDDER provides expert consultation and assistance to the Massachusetts Department of Developmental Services. Consultations include assisting with a variety of projects, from preparation of annual mortality reports to developing analyses of health care capacity across states to care for this underserved population.

Dr. Baldor has served as a member of the Governor's Council for Developmental Disabilities, providing a consultative role in assisting the Commonwealth to close several of its 'State Schools' which have historically served as institutions for these individuals. To assist with providing comprehensive care to previously institutionalized individuals, he has worked closely with the UMass Department of Psychiatry to develop a specialized 'Medical Home' that links community-based care management with integrated behavioral and mental health primary care.

**Addiction medicine:** Jeff Baxter, MD serves as Chief Medical Officer of Spectrum Health Services, providing oversight of inpatient and outpatient substance use disorder treatment across Massachusetts. Under his leadership, most faculty and resident physicians provide medication-assisted treatment for opioid addiction at the Family Health Center of Worcester, Hahnemann Family Health Center, Barre Family Health Center, Community Health Connections of Fitchburg and Plumley Village Health Center. Dr. Baxter continues as a regional leader and resource in the treatment of opioid dependence and in managing opioid pain medications as a longstanding member of the SAMHSA-funded Physician Clinical Support System. He serves as a faculty member for the ongoing series of Safe Opioid Prescribing courses sponsored by the Massachusetts Board of Registration in Medicine, and he is actively involved in curriculum development nationally on minimizing opioid misuse through the NIDA Centers of Excellence in Physician Information program (<http://drugabuse.gov/coe/>).

**Health care for the Homeless:** For almost three decades, under the leadership of Linda Weinreb, MD, the Family Health Center of Worcester has provided a set of comprehensive services for many of Worcester's homeless families. The innovative **Homeless Families Program** works closely with community partners and integrates behavioral health and family advocacy services with primary care for an average of 150 new families each year. The program has received extensive national recognition for its innovations in care.

Since 1994, Erik Garcia, MD has served as Medical Director of the **Homeless Outreach and Advocacy Project (HOAP)**, sponsored by Community HealthLink (CHL), a Community Mental Health Center based within UMass Memorial Health Care. At HOAP, the goal is to address the complex issues which surround homelessness with a team approach - where case management, mental health and medical divisions work together to coordinate care. With recent changes in homeless services, HOAP has been able to house many chronically homeless adults in Worcester, greatly reducing the chaos inherent in street and shelter homelessness. While at HOAP Dr. Garcia has also focused on the treatment of opiate dependence with the addition of a full time substance abuse counselor and a case manager to help patients receiving Suboxone.

**Primary Care within CHL:** Dr. Garcia's clinical activities have also included providing primary care within the Community Mental Health Center setting at CHL. Within the past year, these services were expanded with the addition of two additional Family Physicians at CHL sites in Worcester and Fitchburg.

**Oral health:** Worcester is one of the largest municipalities in the United States that does not fluoridate its water supply. Hugh Silk, MD, MPH has dedicated much of his career to improving oral health care and oral health curricula at the local, regional and national level. He was a founding member of the Steering

Committee for Smiles for Life, a national oral health curriculum. He serves as a consultant in Canada on the Niagara Region (Canada) Fluoride Varnish in Primary Care Project and working on a project to bring Smiles for Life to Canada. He has presented and published widely to promote fluoride varnish treatment in primary care and interprofessional education on oral health.

### **Leadership in Community Health in the Medical School and residencies**

Faculty from the department have made an impact on a variety of courses and initiatives across the medical school and residencies.

**Predoctoral Education:** While the department's course offerings are described in detail in the section devoted to Education, the following highlight our faculty's influence on curriculum related to Community Health:

- Suzanne Cashman ScD, serves as co-director of the ***Determinants of Health*** course for first and second-year medical students. A key component of the course, the interprofessional ***Population Health Clerkship***, is directed by Heather-Lyn Haley PhD.
- Department faculty taught and provided leadership to one-day third year "Interstitial Curriculum," programs focusing on ***Disabilities*** (Linda Long-Bellil, PhD, JD, Project Director), ***Health Policy*** (Bob Baldor, MD, Director), ***Pain Management*** (Jeff Baxter, MD, Director), and ***Multiculturalism*** (Warren Ferguson, MD, Director).
- While the medical school has just phased in its required ***Capstone Scholarship & Discovery*** Course, which pairs faculty members with students who are working on a required project to be completed in the fourth year, we are beginning to see a trend wherein students who do summer assistantships with us choose a similar project for their Population Health Clerkship, and are continuing it as their final Capstone project.
- Beginning in 1999, the department developed an optional enrichment pathway, the Multicultural and Underserved Pathway, with support from the state's Medicaid program and HRSA training grants. This four-year curriculum integrated global health experiences, community-based service learning and clinical rotations in federally qualified community health centers. This pathway has evolved and been transformed to a Global Health Pathway, now a formal credit bearing course in the medical school. Michael Chin, MD, a graduate and alumnus of the Pathway, now receives hard funding to orchestrate a rigorous curriculum on global health.

The department sponsors key required and elective courses with a Community Health focus:

- 4th year electives include ***Healthcare for the Homeless*** and ***Correctional Health Care***.
- The department offered over half a dozen student experiences as part of the medical school's new "Flexible Clinical Experiences," including topics devoted to ***Adventures in Prison Medicine***, ***Country Doctoring-Rural Medicine***, ***Health Behavior Change***, and ***Policy and the US Health Care System***.
- **Medical Student Pathway: *Rural Health Scholars***, directed by Suzanne Cashman, ScD, Steve Martin, MD and Marcy Boucher, MD recently completed its fourteenth year with support from the Mass AHEC Network. An Optional Enrichment Elective, the Pathway identifies medical and nursing students early in the course of their education who have an interest in practicing in rural areas or small towns. Participating students' longitudinal preceptorships, Population Health clerkships, summer jobs, and selected electives occur in rural or small town communities.

**Resident and Fellow Education:** Community Health faculty augment the community health aspects of the Family Medicine residencies, providing guidance to residents whose scholarly projects incorporate aspects of Community Health. In the Worcester program, they participate in the interns' orientation month and their Family Medicine/Community Health block.

**Carnegie Foundation's Community Engagement Classification:** The Carnegie Foundation for Teaching and Learning recognizes community-engaged campuses across the country. In 2008, Dr. Cashman and Mick Huppert, MPH provided leadership to the medical school, organizing the submission of an application to the

program; UMass Medical School was the first medical school to receive the classification, and the University of Massachusetts was the first state University to achieve the classification at each of its five campuses.

In 2014, Drs. Cashman and Haley led a multidisciplinary group from across the medical school to submit a renewal application that captured the full extent and impact of the medical school's community-based engagement activities. In early 2015, The Carnegie Foundation announced that we been recognized again as a community engaged institution. Only three other medical schools now share this distinction.

**Center for Clinical and Translational Science Community Engagement:** Dr. Cashman co-directs the community engagement section of the medical school's CCTS, described in detail in the section devoted to Research.

**Prevention Research Center (PRC):** Dr. Cashman serves as an investigator in the PRC, which is based in the Department of Medicine's Division of Behavioral Medicine. She has successfully linked others in the medical school and the department – particularly in our Preventive Medicine Residency – to the community- based prevention initiatives and community partnerships of the PRC.

**Center for Health Equity Intervention Research (CHEIR):** Over the review period, Drs. Cashman and Upshur have provided leadership and project management to community engagement activities conducted under the auspices of the Center for Health Equity Intervention Research, based in the Department of Quantitative Health Sciences and funded through a Center grant from the National Institute of Minority and Health Disparities. The primary focus of the community engaged work has been the development of a series of research literacy videos explaining through research participants' words how and why they became involved in research as well as the benefits they see to being part of a research study.

A major focus of the educational development work has been advancing and expanding a community engagement track as part of the research scholars' pipeline. Addressing this area, Dr. Carole Upshur developed an educational track that provides opportunities for UMass Boston students to develop into health equity intervention researchers.

Drs. Warren Ferguson and Lee Hargraves developed and collaborated on a CHEIR study to improve hypertension outcomes at two Community Health Centers, utilizing storytelling and motivational interviewing delivered by Community Health Workers. The project has been featured on the AAMC Virtual Site Visit series.

**Medical School Community Engagement Committee:** Drs. Cashman and Haley have taken the lead in developing and bringing to full school committee status the Community Engagement Committee. This committee was originally structured to strengthen service-learning pedagogy and to spearhead the initial Carnegie Foundation application for community engaged status. Over time, it has become a committee with broader reach and objectives, particularly to serve as a bridge for bi-directional communication and conducting and updating an environmental scan of the school's community engagement activities.

**Influence on newly developing Academic Personnel Policies:** With the Office of Faculty Affairs conducting a complete review of the medical school's promotion policies, Dr. Cashman was invited to join the Academic Advancement Work Group. She serves as resource and guide, ensuring that a new area of distinction, termed Population and Community Health and Health Policy, adequately captures faculty members' community engaged and policy focused work.

### **Leadership in Community Health in UMass Memorial Health Care**

Department faculty have made an impact on a variety of initiatives across UMass Memorial Health Care, the medical school and residencies.

**Work to improve language services:** For over a decade, Dr. Ferguson has collaborated with UMass Memorial Medical Center's Department of Interpreter Services to ensure that individuals preferring care in a language other than English have access to qualified interpreters. Securing funding from the Robert Wood Johnson Foundation, he worked with faculty member Mary Lindholm, MD to develop and evaluate a series of

innovations, including promoting the use of bedside speaker phones with one touch dialing capacity, and placing the decision for an interpreter with the patient rather than the provider. Video interpreting in outpatient and inpatient settings has also been piloted with positive outcomes. These efforts resulted in outcomes that have been selected as an exemplary language services program in the 2010 National Healthcare Quality Report and the National Healthcare Disparities Report.

**Partnership with Community Benefits and the City of Worcester to improve population health:** Over the past decade, Community Health faculty have worked closely with leadership from UMass Memorial's Community Benefits program and the Worcester Division of Public Health (WDPH) to conduct two community health assessments, the most recent completed in 2015. Each assessment has formed the basis for a Community Health Improvement Plan (CHIP). Faculty have made significant contributions to ensuring that the city's health statistics reflect disparities and that work is implemented and guided through using a health equity lens. As active participants in the CHIP, we continually connect our faculty and learners with initiatives the Plan has generated. While the topical menu is long and diverse, several examples follow:

- In the area of **Healthy eating and active living**, our faculty worked with the YWCA to provide prescriptions for exercise, and with Regional Environmental Council to bring the farmers' market to health center property.
- In the area of **Mental health and substance abuse**, we have developed training materials aimed at improving opioid prescribing practices; we are at the forefront of the behavioral health integration movement work; and to advance decades of work with homeless women, our faculty now are exploring ways to improve the delivery of trauma-informed care for women entering pregnancy with a diagnosis or symptoms of PTSD.
- In the area of **Primary care and oral health**, our department faculty continue to provide leadership for the Worcester Infant Mortality Task Force-related action steps; for integrating oral health promotion into primary care practice, including developing the Smiles For Life curriculum; and for bringing primary care to the city's lower-resourced areas through the Caremobile.
- In the area of **Health equity**, our department faculty have taken leadership roles in the Worcester Partnership for Racial and Ethnic Health Equity. Examples of activities include implementing Undoing Racism trainings and working with Community Legal Aid to develop and strengthen our medical-legal partnerships. Additionally, through Dr. Cashman's work with the PRC, we are contributing to and tracking the development of the WDPH to become an Academic Health Department, one that connects to multiple academic institutions in the city of Worcester.

The department also supports local health initiatives through the extra-curricular Summer Service-Learning Assistantship and the Martin Luther King Semester of Service Student Awards program. Each of these programs seeks to advance work of local community based organizations and improve the health of a range of population groups.

#### **Partnership with Commonwealth Medicine (CWM)**

The department enjoys a strong working relationship with Commonwealth Medicine, the health care consulting division of the medical school. Established in 1999, Commonwealth Medicine employs a public university-state agency model of collaboration to improve outcomes while controlling costs, especially for publicly funded populations. CWM employs more than 2,500 individuals and uses innovative strategies focused on health care reform, financing, care management and service delivery. 34 faculty based in CWM have faculty appointments in the department, with several department-employed faculty embedded in CWM programs. Dr. Ferguson serves as the liaison to CWM and on the CWM Executive Leadership team. CWM Assistant Dean and Chief Medical Officer David Polakoff, MD serves on the department's leadership team and Associate CMO Judy Steinberg, MD serves on the Academic Development Committee. Collaborative work crosses several CWM Centers and Programs:

**Center for Health Policy and Research (CHPR):** The Center for Health Policy and Research is directed by David Polakoff, MD. CHPR promotes and conducts applied research, evaluation, and education aimed

at informing policy decisions that improve the health and well-being of people served by public agencies. Research activities focus on Medicaid policy, healthcare quality, behavioral health, end of life care, TB screening and diagnosis, and health services research. Twenty-one department faculty members are employed full- time or contracted from the department to work at the Center.

Over the course of the year, department faculty members at CHPR have collaborated with faculty across the medical school on projects related to the organization and delivery of health care services and have developed a number of joint research grant proposals. CHPR faculty have been awarded more than \$70 million in grants over the last 5 years.

In addition, faculty based within the department have made significant contributions to the launch and ongoing development of an Office of Survey Research housed within CHPR as well as on medical home initiatives for the Commonwealth's Executive Office for Health and Human Services.

**Health and Criminal Justice Program:** On any given day, one in one hundred adults are incarcerated in the United States. Our country also has the distinction of having the highest prevalence of incarceration in the world, with a substantial overrepresentation of underrepresented minority persons. Warren Ferguson serves as Director of Academic Programs within UMass Health and Criminal Justice Programs, the entity that provided all medical care in the state's prisons for a decade and now coordinates secondary and tertiary care for four Federal Bureau of Prisons facilities. Dr. Ferguson has led a national movement to develop academic programs within criminal justice programs. Accomplishments include:

- Conceptualization and launching the **Academic Consortium of Criminal Justice Health**, a member organization providing a home for academic health science centers in the field and to support faculty and student initiatives including clinical care, training and investigator-initiated research.
- Conceptualization and sponsorship of the **Academic and Health Policy Conference on Correctional Health**. Now in its ninth year, the conference is supported by a 4 year NIH-R13 Scientific Meeting Grant from the National Institute of Drug Abuse and a 3-year R13 Scientific Meeting Grant from AHRQ. Warren Ferguson is Principal Investigator and serves as Director of the conference. Over 250 attendees representing 5 countries, 33 states and 100 academic institutions participated in the conference in 2015.
- **Curricular offerings across the four years at the medical school**, including a student-initiated optional enrichment elective, a population health clerkship in correctional health, longitudinal preceptorship offerings for first and second year students and electives for fourth year medical students. Additionally, several students completing their ambulatory medicine block during the Medicine Clerkship have chosen the prison health care system for this experience.

**Office of Clinical Affairs:** At MassHealth, the Massachusetts Medicaid program, CWM staffs the Office of Clinical Affairs (OCA), providing clinical direction to the program. Carolyn Langer, MD serves as Medical Director for MassHealth; she and several other faculty members based at OCA participate in teaching activities such as the third year Interstitial on health policy. They offer several electives in Health Policy, serve as advisors for students and residents, and host a Preventive Medicine residency elective on policy.

**Center for Health Law and Economics (CHLE):** CHLE is directed by faculty member Jean Sullivan, JD. CHLE's areas of expertise focus on the public sector, and include Medicaid and CHIP policy and practice, health reform at the state and federal levels, coverage and access issues, right-to-benefits advocacy for vulnerable populations, medical debt, payment reform efforts, economic impact of reform initiatives. We advance knowledge dissemination through policy briefs, conference presentations, lectures, and articles.

**MassAHEC Network:** The statewide AHEC program is led by faculty member Linda Cragin; Warren Ferguson serves as Medical Director. AHEC inspires, trains, recruits and retains a diverse and broad range of health professionals to practice in communities where the need is greatest. The MassAHEC Network implements the UMMS mission to serve the state's vulnerable populations at the community level through six regional centers. MassAHEC is the state's leading trainer of medical interpreters and community health workers; in

addition, it provides consultation and editing in health literacy and translates health related documents. It provides continuing education programs to 5000 health professionals annually.

MassAHEC staff support Rural Health Scholars and the summer assistantship program, and serve on the Preventive Medicine Residency Advisory Board and Community Health Steering Committee. MassAHEC also partners with the Massachusetts League of Community Health Centers on several initiatives including Students/Residents Experiences and Rotations in Community Health, a program that provides clinical training rotations for 32 health professions students in community health centers including UMass medical and graduate nursing students. Each year, the AHEC Centers co-lead several population health clerkships for medical students and graduate nursing students with new ones under development.

Health Occupations Students of America (HOSA) is MassAHEC's latest program to reach high school and community college students. Modeled after programs such as Future Farmers of America, it encourages students to consider health care careers. Sixty percent of participating students represent minority or educationally disadvantaged groups. The Barre Health Center is partnering with Quabbin Regional High School's new HOSA chapter and offering tours and other learning opportunities.

### **Other Key Partnerships**

**Community Health Centers:** The department has strong affiliations with three federally qualified Community Health Centers, with faculty providing patient care, teaching and conducting research. One-third of the residents in the Worcester Family Medicine residency train at the Family Health Center of Worcester, and the department's relationship with the Greater Lawrence Family Health Center includes an academic affiliation with its Family Medicine residency and faculty. A 2004 study of alumni from the Worcester program revealed that graduates who trained at a Community Health Center were nearly six times more likely to enter practice with an underserved population and four times more likely to still be serving an underserved population.

In addition to relationships with individual Community Health Centers, the department, in collaboration with Commonwealth Medicine, enjoys a close working relationship with the Massachusetts League of Community Health Centers, the primary care association for member CHCs in Massachusetts. Projects over the last five years include:

- Two studies, one in 2008 and another in 2013 surveyed Massachusetts community health center physicians. Results demonstrate a worrisome five-year outlook for physician retention but strong passion for the CHC mission and a strong desire of participants to be engaged in teaching medical students and residents.
- A contract to develop a curriculum and provide advanced communication skills training to CHC clinicians as adjunct training to the Massachusetts Patient Centered Medical Home Initiative. Evaluation of the curriculum has been published.
- A breakthrough collaborative to improve language services in community health centers by consistent utilization of qualified medical interpreters. This work has also led to research in community health centers on provider false fluency in languages other than English.

**Worcester Division of Public Health (WDPH):** The newly designated Worcester Commissioner for Health and Human Services is department faculty member Mattie Castile, MD; the Commissioner, Michael Hirsch, MD, is based in the UMMS Department of Pediatrics. Both serve on the department's Community Health Steering Committee. In addition to the community needs assessment and health improvement plan mentioned earlier, our faculty collaborate with the WDPH through the state Department of Public Health's Prevention and Wellness Trust Fund award. Specifically, we have been helping to shape and implement this project, with particular focus on childhood asthma and elder falls prevention. A significant thread throughout the work is development of strong community/clinic connections.

**Massachusetts Department of Public Health:** Preventive medicine Fellows complete required 2-month rotations in public health within the state's Department of Public Health. Key MA DPH leaders also serve as lecturers in the Preventive Medicine fellowship as well as on the Residency Advisory Committee.

### Metrics

The metrics we use to monitor our Community Health activities (Appendix C) indicate that:

- Based on the AAMC Graduation Questionnaire, our students rate their training in Community Health favorably as compared with other schools.
- A high proportion of our residency graduates report feeling prepared to carry out a range of community health activities and to address social determinants of health affecting their patient populations.
- We have received or participated in a considerable number of grants germane to Community Health.

### Challenges/Opportunities

#### **Challenges**

**Funding:** Reductions in school support for discretionary funding and HRSA training dollars to support educational innovations threaten to reduce our capacity to be a leader in Community Health. Coupled with continued low funding levels for health services research, it is difficult to envision how we can continue to sustain efforts developed over the last five years without continuing cross funding from practice revenues.

**Succession Planning:** With the Vice Chair and Director near or at retirement age, succession planning needs to be a priority. While it might be tempting to reduce or eliminate current modest cross-funding, rather than investing in new leadership, the importance of these activities is a foundation of the department's vision and mission. Ironically, this comes at a time when a developed infrastructure exists to conduct innovative programs.

To address these two challenges, we will need to recruit a new mid-level faculty member with expertise in Community Health, preferably with an interest in systems of care for vulnerable populations. Absent a solid funding stream for such an individual, we will need to look for opportunities for partnership with an entity such as Commonwealth Medicine, a Community Health Center, or a Department of Health.

#### **Opportunities**

**Commonwealth Medicine:** The greatest potential for collaboration is with Commonwealth Medicine, focused on projects related to health care transformation (particularly focused in systems of care for vulnerable populations), Academic Criminal Justice Health, workforce training and support (particularly focused on the training of interprofessional teams, including allied health workers such as medical assistants, medical interpreters and community health workers), and the development of Long Term Service and Support Innovations (LTSS).

**Healthy Communities:** A fully formed infrastructure for collaboration to improve the health of Worcester and surrounding communities exists, raising the potential to seek extramural support for partnerships between the public health and medical communities. As the Prevention Wellness Trust Fund supports projects to improve health outcomes of children with asthma, adults with hypertension and elders at risk for falls, it serves as a blueprint for future extramurally supported projects.





## H. Awards and Recognition (2010-2015)

Appendix E includes many pages listing awards given regionally or locally in recognition of outstanding accomplishments by the faculty. Below we present the list of faculty who have received **significant national or international recognition during the last five years**:

**Nicholas Apostoleris, PhD** was named in 2014 as President of the Board of the National Health Care for the Homeless Council, a network of more than 10,000 doctors, nurses, social workers, patients and advocates who share the mission to eliminate homelessness. The Council provides training and technical assistance to the 254 Health Care for the Homeless programs nationwide.

**Sandy Blount, EdD** was awarded the Collaborative Family Health Care Association's Don Bloch Award at their 2011 Conference in Philadelphia. The award noted that "The modern era of integrated, collaborative primary care would look very different but for the influence of Sandy Blount. In fact, one could say that we call it Integrated Primary Care largely because of Sandy. He began using this phrase years ago, decades ago—wrote about it, spoke about it, reviewed the literature in support of it, described the essential principles of it, gave an elegant conceptual rationale for it, researched it, trained people to it, encouraged us to do it . . . His legacy is even more permanently assured by the work of his students and trainees. One can't go anywhere in the US and talk about collaborative care or integrated care or team-based care without hearing someone tell . . . that they were trained by Dr. Blount, that they are at least doing that right. So he is also responsible for literally creating a significant part of the active workforce engaged in integrated practice."

### **Lucy Candib, MD:**

- received the 2010 F. Marian Bishop Leadership Award from the Society of Teachers of Family Medicine Foundation at the annual STFM meeting in Vancouver in April, 2010. The award honors individuals who have significantly enhanced the academic credibility of Family Medicine.
- was awarded the 2010 University of Massachusetts President's Public Service Award at a November ceremony at the President's Office in Boston. Given annually to one individual from each of the five UMass campuses, the award recognizes exemplary public service to the Commonwealth. Her award stated: "Dr. Candib's devotion to Family Medicine and long-term commitment to her community can be felt every day by learners, patients, and clinicians in Worcester. For almost four decades, Dr. Candib has served generations of families from many cultures at the Family Health Center of Worcester. She developed unique community collaborations for open access to exercise for low-income youth and adults. Widely published on family medicine, health and safety of women and children, and patient empowerment, Dr. Candib advocates for patients to take charge in both health and sickness."
- was awarded the 5 Star Family Doctor Award of the World Organization of Family Doctors (WONCA) in June, 2012 at their conference in Prague. McMaster University's Cheryl Levitt, MD recognized Dr. Candib in her nominating letter as "a serving physician who . . . in addition to providing regular family physician comprehensive service . . . also provides innovative services to her community, to her colleagues in other countries such as Ecuador and through WONCA, and performs academic work . . . of exceptional quality and relevance. Lucy serves as a role model to family physicians throughout the world and her work extends well beyond Worcester, Massachusetts." The full text of the nomination can be found at <http://www.globalfamilydoctor.com/News/LucyCandibWONCANorthAmericaFiveStarDoctor.aspx>

### **Suzanne Cashman, ScD:**

- received the 2010 F. Marian Bishop Outstanding Educator of the Year Award from the Association for Prevention Teaching and Research at their Prevention 2010 conference in Washington, DC. The Award is

presented to "teachers who have displayed excellence in the instruction of students or residents in the field of public health and prevention."

- received the 2010 Tom Bruce Award from the Community-Based Public Health (CBPH) caucus of the American Public Health Association at their annual fall conference. The award recognizes an individual who has made a significant contribution to the CBPH Caucus and the CBPH movement. She was recognized for her "genuine, significant and lasting contributions to the fields of service-learning, community-academic partnerships and CBPH."

**Linda Cragin, MS** received the 2014 National AHEC Organization's President's Award for her leadership, support and commitment to the NAO Board of Directors in her role as Treasurer.

**Dennis Dimitri, MD:**

- received the 2015 Society of Teachers of Family Medicine Advocate Award at their annual meeting in Orlando. The award recognized his "track record as a key representative of our discipline, instrumental in leading important legislative advocacy efforts in Massachusetts, representing Family Medicine to state legislators during historic landmark healthcare reform, and a very strong advocate for students, residents, and faculty to become involved in government affairs."
- was elected Vice President, and then President (currently serving), of the Massachusetts Medical Society

**Chyke Doubeni, MD** was selected by President Obama as one of 94 researchers to receive the 2011 Presidential Early Career Award for Scientists and Engineers. The White House press described the award as "the highest honor bestowed by the United States government on science and engineering professionals in the early stages of their independent research careers."

**Warren Ferguson, MD** received the National AHEC Organization's 2014 Andy Nichols Award for Social Justice in Charlotte, VA, recognizing his vision and persistent service in pursuit of social justice.

**Lisa Gussak, MD** was awarded a Fulbright Scholar Grant from the US Department of State and the J. William Fulbright Foreign Scholarship Board. During 5 months in 2015, she worked with community medicine faculty at the Autonomous University of Nicaragua, Leon to begin development of a Family Medicine residency.

**Stacy Potts, MD:**

- was named President of the Board of the Family Medicine Education Consortium in October, 2014.
- was appointed Chair-Elect of the ACGME Family Medicine Review Committee, effective 2016-2019

**Steve Martin, MD** was recognized as a co-author of the Best Research Paper, Re-Engineered Hospital Discharge Program to Decrease Rehospitalization, at the 2010 STFM Annual Spring Conference in Vancouver.

**Hugh Silk, MD, MPH:**

- was named Co-Chair of the STFM Group on Ethics and Humanities.
- received the Smiles for Life 10th Anniversary Award "in recognition of his dedication and outstanding contributions to the project". Hugh serves as a founding member of the national Steering Committee of Smiles for Life: A National Oral Health Curriculum. Smiles for Life is the nation's most comprehensive and widely used oral health curriculum specifically designed for use by primary care clinicians.

Though not a "national" award, we must highlight here the honors bestowed on **Frank Domino, MD**, who was chosen by the graduating class in 2010, 2011, and 2015 to serve as Faculty Marshal ("Hooder") at Commencement. He has also been recognized by the graduating class as an Outstanding Medical Educator at the Alumni Breakfast preceding Commencement in 11 years, including five in a row. The Award is given to faculty in recognition of their "dedication to the field of medicine, outstanding qualities as a teacher and human being as well as being a role model that students would like to emulate in their professional career."

## I. Department Finances and Administration

**Summary:** The department's combined medical school and clinical budget totaled \$22.7 million in FY15.

We went through a major financial crisis during the review period due to the collapse of financial management systems at the residency training site operated by our Community Health Center partner in Fitchburg. The CHC relationship in Fitchburg was terminated, and a new practice was established in collaboration with UMass Memorial HealthAlliance Hospital. In addition, support for teaching, research and activities in Community Health were impacted by a combined decrease in revenue of over \$1.29 million from the medical school and in training grants. Realizing that these cuts are permanent, a series of interventions were undertaken to reset the structural elements of the operating budget.

We hit our budget target in FY14, and ended FY15 with a positive margin of \$199,755 (0.8%).

Looking to the future, we see three areas of concern. We need to find ways to keep up with the market for compensation. We are hopeful that a pending revision of the medical school's academic personnel policies will lead to a way to designate support for investigators in non-tenure track positions, so that support for research in the department is not a subject for annual negotiation. Finally, within our practices, there is a continued need for investment in practice improvement and transformation.

We do see opportunities to support for practice transformation and the work life of the faculty. We are beginning to work within new payment models which support primary care transformation and integrated care. In addition, we hope to be responsive to new grant and contract opportunities to support pilots programs and clinical innovations.

### **Background**

**Administrative Organization:** The department Administrator, Alan Chuman, has overall responsibility and accountability for all department finances and human resources (including all clinical and school) and is a member of the department's Senior Leadership Team. He reports to the Chair, but is also accountable to the Medical Group CFO and Chief Operating Officer, and their counterparts in the medical school. The department's Academic Business Manager, Bernadette Cookson-Stone, is responsible for the fiscal accounting of all department accounts and manages all fiscal transactions, supervising a team of three staff who provide grant accounting, account management, and processing of payroll.

The department's Administrative Manager, Melissa McLaughlin, serves as a member of the Senior Leadership Team, and works closely with the Chair and Senior Leadership Team on follow through of decisions made by the SLT, and supervises all administrative staff in the Benedict Building to optimize team function. A monthly meeting is held with all department managers, including central administration, managers at each of the practice sites, and within the residency and predoctoral programs, to share department and system information, and to enhance knowledge and collaboration across sites and missions. A monthly meeting is also held of all administrative staff. Videoconference is used for both meetings to enhance participation across department sites.

The department does not have Divisions. This was purposeful decision made by the Chair upon assuming his Chairmanship in 1998. It emphasizes a "one department" mindset, and minimizes the likelihood of one

component benefiting or being negatively affected by payor mix or the nature of specific work. While the department manages its clinical funds within nine cost centers for accounting purposes, with revenue and expenses allocated to each, no attempt is made to allocate administrative costs across cost centers. The Medical Group holds the department accountable for its total departmental bottom line, not to the bottom line in individual cost centers. We make decisions, which often involve cross-subsidization, from this ‘one department’ mindset.

## **The Budget**

**Sources of revenues** for our FY15 \$22.7 million budget are outlined on the table below.

- **Clinical sources** accounted for 77% of total revenues, including:
  - Patient care revenues;
  - Contracts with outside entities; and
  - Hospital support, including GME funding; support for primary care (\$75,000 per clinical FTE); support for administrative services provided by individuals including the Chair, Vice Chair for Clinical Services, and Medical Directors; and coverage of the bottom line loss for our hospitalist service and for our Plumley and Fitchburg practices (the latter by HealthAlliance Hospital).
- **Medical school** sources accounted for 23% of total revenues, including:
  - Base support for teaching;
  - Designated allocations for the MPH program, faculty service to the medical school, and support for research (see below);
  - Designated allocations for leaders in the Learning Communities (House Mentors, etc);
  - Research grants;
  - Training grants; and
  - Commonwealth Medicine.

<b>Sources of Revenues (FY15)</b>		
<b>Source</b>	<b>(\$M)</b>	<b>% of Total</b>
<b>Clinical Sources</b>		
Patient care revenues	10.70	47.1%
Contracts	1.70	7.5%
Hospital support	5.11	22.5%
<b>Total Clinical Sources</b>	<b>17.51</b>	<b>77.1%</b>
<b>Medical School Sources</b>		
Medical School base	1.25	5.6%
Designated allocations: MPH, etc	0.41	1.8%
Designated allocation: Learning Community	0.33	1.5%
Research Grants	1.90	8.4%
Training Grants	0.62	2.7%
Commonwealth Medicine	0.65	2.9%
<b>Total Medical School Budget</b>	<b>5.17</b>	<b>22.9%</b>
<b>Total Department Budget</b>	<b>22.67</b>	<b>100%</b>

Trends in medical school support during the review period indicate:

- While we are fortunate to receive base funding to support our medical student teaching contributions and administrative costs for education and departmental leadership, the medical school moved to a formula-driven process in FY13 based on predoctoral teaching time and administrative roles for school functions. The formula does not include other functions in the department, including support for research or for our work in Community Health. As a result of this process, our base support has been reduced annually, starting in FY13.
- Starting in FY13, we have received an increase in designated allocations, reflecting annually negotiated support from the Dean to support research.
- New funding has been provided to be directed toward faculty activities in the medical school's Learning Communities; and
- Unfortunately with changes in the availability of HRSA training grants, FY15 marked the end of a five year ARRA cycle of several training grants, and in FY16, for the first time in 30 years, we do not have a HRSA grant. In addition, with a drop in our core research faculty members over the past three years, research funding will continue to decline unless we successfully recruit new core faculty. This is a priority strategic concern for the future.

<b>Trends in medical school support and grants</b>	<b>FY09</b>	<b>FY10</b>	<b>FY11</b>	<b>FY12</b>	<b>FY13</b>	<b>FY14</b>	<b>FY15</b>
School Base	1,683,330	1,714,319	1,714,320	1,714,320	1,542,888	1,388,599	1,249,739
Designated: MPH, faculty, research	173,048	163,235	159,520	153,528	241,307	231,721	414,093
Designated: Learning Communities			125,480	230,457	309,026	300,036	333,472
Research Grants	1,241,427	2,093,000	1,503,492	3,107,107	2,501,092	3,205,170	1,903,323
Training Grants	414,512	548,443	1,278,860	1,216,560	918,677	862,462	623,129
Commonwealth Medicine	399,425	442,799	495,100	473,974	462,786	658,008	654,333
<b>Total medical school support</b>	<b>3,911,742</b>	<b>4,961,796</b>	<b>5,276,772</b>	<b>6,895,946</b>	<b>5,975,776</b>	<b>6,645,996</b>	<b>5,178,089</b>

#### **Revenues are utilized to support each of the missions:**

- All funds provided by the Medical School are utilized for medical school teaching and research. Funds provided by Commonwealth Medicine support specific functions and faculty devoted to work carried out through the collaboration.
- Clinical functions, including residency training, are funded from the clinical budget. Resources generated through clinical activities are used to cross subsidize functions where base funding is inadequate, including support for research infrastructure, Community Health activities, and residency training.
- Administrative functions are funded by both sources, school and clinical, depending on the focus.

#### **Financial trends during the review period**

**Bottom line performance:** The primary measure of the department's financial performance is measured by its annual clinical bottom line, which sits within the UMass Memorial Medical Group. The Medical Group expects the department to break even on an annual basis, and we manage the department to meet this expectation.

The annual clinical bottom line for the department during Dr. Lasser's chairmanship from FY98-15 is included in Appendix H, demonstrating a positive bottom line for more than a decade. However, performance during the FY09-15 review period is as follows:

FY09	\$ 71,225
FY10	(61,210)
FY11	(213,659)
FY12	(1,462,133)
FY13	(380,428)
FY14	45,223
FY15	199,755

The bottom line was impacted by two significant financial events during the review period:

**Financial stress in the Fitchburg residency practice:** We experienced difficult years from FY11-13 due to the collapse of our partnership with the Community Health Connections Community Health Center in Fitchburg (described in (F) Clinical Services). The collapse of financial management systems at the health center affected both productivity and cash flow, and led to a write-off of over \$1 million in debt owed to us by the health center.

In July, 2014 a new residency practice was established, and our clinical financial bottom line was re-established on a breakeven or better basis.

**Decrease in base medical school support, Title VII and other frozen or decreasing revenues:** As noted above, over several recent years we have experienced decreases in base support from the medical school (a decrease of \$464,000 between FY 12 and FY15), and a decrease in Title VII funding (a drop of \$665,000 between FY 11 and FY15). In addition, the hospital has frozen its level of support for GME and primary care. Recognizing these trends, we initiated a multiyear set of interventions to stabilize our financial position and grow resources for investment. The stated goal was to improve the run rate by \$1 million. These initiatives included:

- **Creating awareness:** Through meetings with the Leadership Team and with the entire department, we pushed for enhanced transparency across the department regarding the make-up of the budget, the need to meet our targets, and the critical importance of clinical work to generating revenue to support the department's multiple missions.
- **Aligning initiatives with the strategic plan:** We applied detailed cost accounting to a series of actual and proposed activities that require investment, and utilized a Leadership Team retreat to set priorities for continued investment. The Team discussed each activity within the context of the department's strategic plan, and members assigned scores to each one, establishing a priority list for the Senior Leadership Team to use as a guide for decision-making. Examples of items discussed included faculty raises, support for the citywide obstetrical coverage system and for practice enhancements, creation of a wellness program, cuts in support for the Family Medicine residencies, research, Community Health, Behavioral Health, or faculty development, and across-the-board cuts in administrative support. The exercise was powerful. The Leadership Team placed considerable emphasis on programs that are critical to the department's vision and mission over the long term. In addition, the discussion of each program led to ideas about ways to cut costs or implement new programs that had not been previously considered.
- **Cost Cutting:** We underwent a gradual reduction in academic staff, an increase in the teaming of staff functions, and a reduction in residency recruitment expenses. We decided not to replace two retiring faculty. A number of initiatives were undertaken, including streamlining teaching to allow for the conversion of 1.0 FTE of teaching time to clinical time,
- **Shift from non-clinical to clinical time:** We reviewed the assignment of faculty time to non-clinical work, and set a goal of converting non-clinical work into clinical work. We also stopped accepting offers of support for clinical faculty to do non-clinical work, unless it was central to the faculty member's career development.
- **Standardization of clinical time:** We standardized the definition of a full-time clinician as nine sessions per week across the department, and set an expectation of a minimum of ten visits per session.

- **Compensation:** For FY15, we froze faculty salaries above the Assistant Professor level, and phased in a small increase in targets for RVU incentives.

### **Fund Balances and Research Trust Funds**

The department manages multiple accounts in the medical school which allow for carryover from year to year, providing a degree of fiscal security in adjusting to ups and downs from year to year, as well as dollars for potential investment. These trust funds currently total \$2.2 million, some of which are held for specific purposes. They are presented in the table below. The lines include:

**Overhead:** The medical school shares overhead from grants, with 50% passed down to departments, of which half is allocated in individual PI accounts to be used at the discretion of PIs in support of their work. These accounts have grown over the review period, given several years of awards from the NIH and PCORI.

**Academic Investment:** Clinical Revenue is taxed at a rate of approximately 3% of patient care revenue, and transferred to this account to be used for academic purposes. This particular mechanism was newly created in FY12. We have grown this account over the several years since its creation.

**Research Investment/Commonwealth Medicine:** This fund holds dollars that were provided to the department, predominantly by Commonwealth Medicine, to support research development and infrastructure. Unlike the other trust funds, it was created with the purpose of spending it down over time; hence it has declined over time.

**Student Health Trust:** The department is responsible for the Student Health Service, serving students in the three schools on the university campus. The service is funded from student fees which are directed annually to this account. Funds are used to support the medical and administrative costs of providing this service. Over many years, a small trust has accumulated. These funds are utilized only for support of the service.

**Revenue Account, Clinical Faculty Development Center:** The department is the administrative home for the CFDC, a center developed and operated in collaboration with the departments of Pediatrics and Medicine. It supports itself mostly through revenues generated from program fees and consultation.

**Revenue Account, Center for Integrated Primary Care:** The CIPC is based in the department and supports itself predominantly from revenue from its programs. The account also holds smaller amounts from other training programs where fees are generated, such as Board review courses. The school instituted a new tax on revenue entering these accounts in FY13 (26% for external sources, 13% from internal sources) which has made these type of efforts much more difficult from a financial perspective. This can be seen in the trend in account balances after FY12.

<b>Carryover Trust Funds</b>	<b>FY09</b>	<b>FY10</b>	<b>FY11</b>	<b>FY12</b>	<b>FY13</b>	<b>FY14</b>	<b>FY15</b>
Research Overhead	257,988	219,128	265,114	309,079	339,320	414,873	481,864
Research Overhead/ PI	197,049	267,015	385,695	350,572	346,059	353,836	383,106
Academic Investment Fund				80,158	74,195	173,076	339,935
Research Investment/CWM	1,041,902	931,286	977,310	725,252	495,920	457,611	421,220
Student Health Trust	226,190	225,326	222,946	218,824	206,039	166,418	181,761
Clinical Faculty Dev Center	64,689	53,467	61,177	151,325	249,381	308,148	314,554
Revenue/Training Trust Fund/CIPC, etc	273,000	536,051	437,693	456,634	223,035	49,769	134,717
<b>Total Carryover Trust Funds</b>	<b>2,060,819</b>	<b>2,232,272</b>	<b>2,349,935</b>	<b>2,291,844</b>	<b>1,933,947</b>	<b>1,923,732</b>	<b>2,257,157</b>

While it appears that the total fund balance has just remained relatively stable, this happened as we were deliberately spending down the Commonwealth Medicine research investment, balanced by growth in our research overhead and academic investment accounts. We are now positioned to utilize modest funding

from these accounts to initiate recruitment of new core research faculty (see discussion in (D) Research and Scholarship).

### **Compensation Plan**

Appendix H-2 includes a copy of the current Compensation Plan, as well as a brief set of PowerPoint slides summarizing the plan, which we have used for presentations to the faculty. Formally established in 2001, the plan established base salaries according to academic rank and incentives based on clinical productivity (based on RVU targets per clinical FTE). RVU targets at residency sites are established on a group basis rather than an individual basis to protect teaching time, and they include resident targets at 10% above the RRC minimum. Over time, elements were added to incentive compensation to incorporate revenues earned through quality scores, meaningful use, deliveries and circumcisions, research productivity, and annual awards for excellence in education and for outstanding service (Chair's Awards). Base salaries are set by the Senior Leadership Team, which serves as the department's Compensation Committee. Incentives are awarded annually and do not roll to base.

In FY15, \$891,693 was paid out in incentive compensation, which was approximately 10% of total compensation. Of this amount 71% was for productivity, 17% for quality, 3% for Meaningful Use, 4% for Educational Excellence and Chair awards, and the remainder for deliveries or for service circumcisions. In FY15 a small Leadership incentive (up to \$6000) was also established for our Medical Directors related to hitting RVU budget, new patient targets, and increases in quality scores at their sites.

The plan also provides research faculty with an option to take one-half of the annually earned awarded PI share of overhead (one-eighth of the total overhead) as an incentive rather than keeping it in their account for future use. Utilization has varied by investigator and year.

As noted, the department recently initiated Education Excellence Awards of \$5000, up to five annually, to acknowledge outstanding contributions during the year towards the education mission. This was initiated after a department task force recommended adding this opportunity to what is a predominantly productivity based incentive plan. Nominations are made by the Leadership team and Chief Residents, discussed and voted on by the Leadership Team, and finalized by the Senior Leadership Team. The Chair also provides up to two "Chair Awards" each year, recognizing outstanding achievement during the past year in any department mission.

In FY16, using estimated incentive earnings based on FY15 incentives, we expect our mean total compensation to be \$228K for full Professors, \$209K for Associate professors, and \$181K for Assistant Professors. Using 2014 AAMC data and adding 4%, our mean total compensation is slightly higher than the AAMC northeast mean for full Professors (\$228K/\$222K) and for Associate professors (\$209K/\$207K), but under the mean for Assistant Professors (\$181K/\$195K). To address this differential, faculty raises for the past two years have targeted only faculty at the Assistant Professor level.

### **Space and Infrastructure**

The Chair, the department's university-based faculty, and central administration staff have offices on the third floor of the Benedict Building at the University campus. The space is sufficient for faculty and staff needs. Within our major clinical sites, space for expansion is limited in Benedict Family Medicine, Hahnemann Family Medicine, and Plumley Village Health Services. Patient demand for primary care continues to grow and we continue to see interest in joining us among outstanding young potential faculty. We are not able to expand the size of our practices with additional faculty to fully address this need.

### **Challenges/Opportunities**

- In the face of static clinical revenues, we will need to find ways to keep up with the market for compensation.



- The medical school is in the midst of revision of its academic personnel policies, including a discussion of tenure. We are hopeful that the discussion will include consideration of support for investigators in non-tenure track positions, so that support for research in the department is not a subject for annual negotiation.
- Within our practices, there is a continued need for practice improvement and enhancement

### **Opportunities**

With regard to support for practice transformation:

- We are beginning to work within new payment models which support primary care transformation and integrated care
- New grant and contract opportunities to support pilots programs and clinical innovations are presenting themselves on a more frequent basis, often with short time frames for responses. We need to develop a nimble way to respond to these opportunities



## **K. Assessment of Strengths and Weaknesses**

Our strengths and weaknesses are discussed throughout the document. In summary, they include:

### **Strengths**

- We have evolved as a “high performance” organization which is mission-driven, aligning planning and implementation, clarifying expectations, and supporting a culture of innovation and professional growth
- We have longstanding engaged partnerships with Community Health Centers, Commonwealth Medicine, and a variety of community-based agencies, built on bidirectional trust and respect
- We periodically test the climate and have found that the faculty enjoy being in the department
  - We have responded to areas identified as needing improvement
  - The mentorship program has been a major success
- We have a talented faculty, with depth in leadership
- We strive to support faculty creativity and programming that responds to patient and community needs
- Initiatives to support academic development (our Academic Development Committee, the structure of the comp plan, mentorship, training regarding the medical school’s academic policies, etc.) are effective, resulting in faculty promotions
- Our predoctoral and graduate programs demonstrate breadth, depth and high quality
- We have sustained a respectable level of research, innovation, and scholarship commensurate with the size of the department
- Our clinical programs combine a strong array of clinical services, integrated behavioral health, and community awareness
- We have achieved PCMH status at our clinical sites, where participation in innovative programs is helping us to invest in resources to support population health
- The faculty have achieved external recognition for their leadership and programs
  - We are in large part responsible for the medical school’s USNWR top ten ranking in primary care
  - Many of our programs have attained national recognition and are highly competitive
- Despite changes in funding sources, we are financially stable and growing resources for investment
- We have enough depth of leadership and enough support from outside to respond to significant problems when they arise
  - Turnover of the Fitchburg residency practice
  - Loss of approximately \$1 million in support from Title VII and the medical school

### **Challenges**

As noted in the sections devoted to each of our strategic goals, our challenges include:

**Organization and Culture:**

- We need to work with hospital leadership to improve the work environment in our practice settings
- We need to pay continued attention to succession planning

**Research and Scholarship:**

- We need to rebuild our core research faculty
- We need to find ways to maintain an environment supportive of scholarship across the department, especially its busy clinical settings

**Education**

- We need to find ways to stimulate student interest in Family Medicine
- We need to develop sufficient numbers of highly motivated preceptors for an expanding class size
- We need to find new ways to support educational innovation
- We will need to work with the new Baystate Health medical school campus in Springfield to assure that it is supportive of Family Medicine

**Clinical Services**

- We need to expand clinical services to bring in new revenues
- We need to find ways to demonstrate the quality of our practices
- We need to find ways to accomplish meaningful change within hospital facilities
- We need to develop new funding sources that support practice transformation

**Community Health**

- We need to develop sustainable funding streams to support our work in Community Health
- Succession planning is particularly important for our Community Health activities

**Administration and Finance**

- We need to find ways to assure that our compensation is market-competitive
- We are hopeful that the medical school's current review of tenure will result in an approach to support clinical investigators in non-tenure track positions
- We need to support the need for ongoing practice improvement and enhancement