

Improving rural health and health care through medical education: The Maine Track

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Rural America is hurting from quietly losing population for decades. When communities suffer, so do their health systems. Over the past century, the departure of traditional industries and declining employment have threatened the existence of rural communities across the country. Home to a majority of Americans a century ago, only 20 percent of Americans live in rural communities today. As J.D. Vance puts it in his memoir of a rural childhood, *Hillbilly Elegy*, “You see, I grew up poor, in the Rust Belt, in an Ohio steel town that has been hemorrhaging jobs

and hope for as long as I can remember.”¹

Rural communities and hospitals struggle with health care provider shortages, financial pressures, and disproportionate rates of chronic illness and addiction. Hospitals are often the dominant employer in small towns. Rural hospitals are closing,² reducing access to care, and threatening the communities they serve.

According to the U.S. Census Bureau (2017), Maine is America’s most rural state with more than 60 percent of its 1.3 million residents living in locales of less than 2,500. Maine also has the oldest population, with a median age of 44.6 years, followed by New Hampshire (43.0 years), and Vermont (42.7 years).³

Small Maine communities face challenges different from, and in some instances greater than, urban communities. Chronic illness, social determinants adversely affecting health, addiction, geographic access to health care, lower life expectancy, and physician shortages are more common in rural settings.⁴ Delivering primary and

subspecialty care, while often rewarding, is challenging; health care resources are often limited and professional isolation is common. Continuing professional development and lifelong learning in the midst of a busy rural practice, while necessary, is difficult. Rural communities, like all communities, have their own proud culture—an understanding of local culture and rural demographics is fundamental to succeeding in rural practice.

Medical education in the United States has, for decades, acknowledged the rural physician shortage and responded with innovative programs like those in the state of Washington. The University of Washington School of Medicine's Regional Medical Education Program (WWAMI) encompasses Washington, Wyoming, Alaska, Montana, and Idaho.⁵ North Dakota and Minnesota, among others, also have successful rural medical education programs designed to encourage and support rural practice. While these initiatives have been individually successful, the rural provider shortage appears

to be worsening, according to the Center for Work force Studies of the Association of American Medical Colleges (AAMC).⁶ This shortage is contributed to by a decline in medical school applicants seeking a rural practice career, rural physician retirement, and recruitment competition from urban areas (also experiencing provider shortages).

One northern New England regional initiative specifically designed to improve rural physician recruitment and retention is the Maine Track—a partnership between Tufts University School of Medicine (TUSM), Maine Medical Center (MMC) and rural Maine communities and their hospitals.

Maine Track origins

In 2005, the Council on Graduate Medical Education (COGME), in a departure from prior reports, released its 16th report recommending a 15 percent increase in U.S. medical school enrollment (about 3,000 graduates per year) by 2015 to meet rising demand.⁷ The AAMC quickly followed that recommendation with a call for Liaison Committee on Medical Education (LCME) accredited medical schools to increase enrollment by 30 percent through increases in existing class size, and by establishing new schools.⁸

In Maine the collective realization dawned on health systems leaders that the impending national work force

shortage would only worsen physician recruitment and the high recruitment costs that hospitals and independent practices were already experiencing. Maine was not positioned well to produce its own physicians through existing undergraduate (UME) and graduate medical education (GME). In 2008, Maine was one of six states without an LCME accredited medical school and in 2014 ranked well below the national median in GME positions per capita.⁹ Maine does have the University of New England College of Osteopathic Medicine. There was also a recognition that Maine could no longer look to regional or national GME programs to address its physician work force needs as only a small proportion (<5 percent) of GME graduates nationally were choosing rural practice.¹⁰ Maine did not have the educational infrastructure to grow its own physician work force, and to be successful, needed to invest more in medical education within Maine.

To address the physician work force shortage, MMC leaders—Peter Bates, MD, Chief of Medicine; Robert Bing-You, Vice President of Medical Education; CEO Vincent Conti; and his successor Richard Petersen; and Heidi Hansen, Trustee—began to develop a vision for a Maine medical education model that would create a partnership between a respected medical school, Maine Medical Center, and Maine communities and hospitals. William Medd, MD (AQA, University of Rochester School of Medicine and Dentistry, 1968), a general internist and community leader at Stephens Memorial Hospital in Norway, Maine and other community physicians, hospital CEOs and health care leaders played a key role in planning the needs of Maine communities. Tufts University President Larry Bacow, JD, PhD, and TUSM leaders Dean Michael Rosenblatt, MD, and his successor, Dean Harris Berman, MD (AQA, Tufts University School of Medicine, Faculty, 2018), embraced the vision of a Maine-based TUSM-MMC medical education—The Maine Track (which recently celebrated its 10th anniversary).

Maine Track model

Once the partnership was agreed to, a Maine Track Steering Committee composed of medical education leaders was appointed. Chaired by the TUSM Dean and MMC CEO, the committee included members of the TUSM Dean's leadership team and MMC educational, research,



During a prenatal visit, Marya Spurling, MD, listens to fetal heartbeat, with the help of the patient's five-year-old daughter.

and financial leaders. The steering committee chairs appointed a Maine-based Academic Dean, MMC's then Chief Medical Officer Peter Bates, to provide strategic and operational leadership. Meeting at least twice yearly, the steering committee routinely communicated on the key areas of admissions, student performance, program assessment, and expansion and innovation. The personal and professional relationships developed among steering committee members were fundamental to addressing the inevitable program challenges as they arose.

For this educational experience to meet both the needs of Maine communities and national medical educational standards, the steering committee decided that Maine Track students must meet the same curricular objectives of all TUSM students, while also participating in a customized learning environment designed to encourage a career in rural medicine. Three Maine Track foundational building blocks were established:

1. Recruit qualified applicants from Maine and from other rural states;
2. Provide scholarship support to minimize financial pressures on student career choice; and
3. Foster community careers through a community-based experience.

The steering committee agreed to an initial class size of 36 students, with an admissions subcommittee based in Maine. The subcommittee was charged with ensuring that applicants recommended for admission met TUSM standards and, embraced the rural mission of the program. Those who had lived in rural areas or who demonstrated a commitment to rural life were of special interest to the subcommittee. The admissions process required coordination between the Maine-based subcommittee and the TUSM admissions committee, which retained authority over the selection process.

Assuming responsibility for the Maine Track brought medical student education to the forefront of MMC and its community hospital partners' strategic thinking. For many of the community hospital partners, medical student education was an entirely new experience.

To facilitate this collaboration, an independent consultant conducted interviews of MMC executive and board leaders, community hospital faculty, and the leadership of TUSM. It was clear from the interviews that MMC executive leaders and board members embraced the goal of medical education supporting the recruitment and retention of Maine physicians. Critical to creating program alignment meeting the needs of all stakeholders, the program must improve the lives of patients (access, quality, and cost) and teaching hospital conflict must be avoided.

While community faculty were excited about teaching and the value of medical student education for their communities and hospitals, there was concern about the impact of teaching responsibilities and academic bureaucracy on their clinical work. TUSM leadership was responsive to these concerns, expressing a commitment to creating a tailored program to meet Maine's medical education needs while meeting community concerns. TUSM was also open to expanding the Maine Track class over time.

The intersection of these stakeholder preferences led to a value proposition approach to this multilevel partnership. All parties united around the mission to grow the Maine physician work force by providing access of qualified students to an affordable, state-of-the-art medical education with a focus on rural health care. At the same time, TUSM and MMC, along with each participating community hospital, developed their own value proposition. Implicit in this shared-value model is an accountability structure designed to address local and overall program needs. TUSM would hold primary accreditation responsibility for the medical school program through the LCME and would be the degree granting authority. MMC and each community partner recognized this relationship and their respective accountabilities to TUSM to ensure that LCME standards were met. A faculty development, appointments and promotions, and financial responsibility relationship existed among the partners. MMC assumed primary responsibility for educational leadership and operations of the Maine Track. Each rural community was granted the flexibility to customize the educational program to meet local objectives so long as the standards determined by the steering committee were met. This distributed model required frequent review to ensure the program functioned smoothly and met its objectives.

A financial model meeting overall standards while preserving local authority supported the program. Each participating organization agreed to meet faculty and other resource requirements set by the steering committee, and retained the flexibility to fund their portion of the Maine Track according to their budgeting process. The financial model is inefficient by traditional measures—a distributed educational program carries higher faculty expenses than a centralized one—requiring each organization to fund a portion of their participation costs. However, when savings in physician recruitment and other costs borne by participating communities were considered, the value proposition made financial sense.

The Maine Track is supported by dedicated philanthropy, which has raised more than \$40 million for

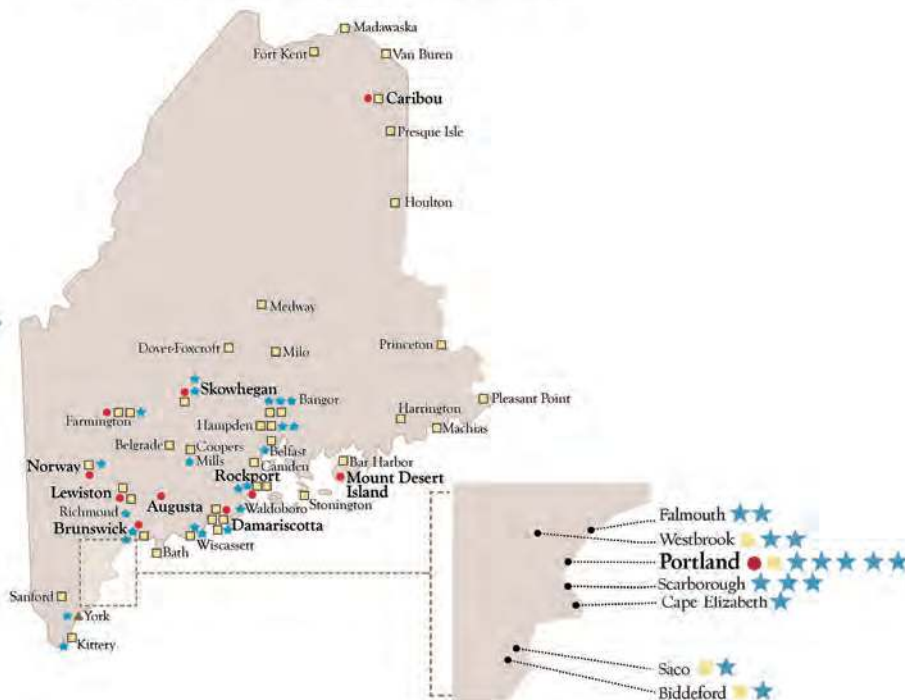
TUSM MMC Program *Maine Track*

Undergraduate Medical Education Teaching Partnership

Teaching Sites

- LIC Site
- Orientation Sites
- ★ CAP Sites

- | | |
|------------------------|-----------------------|
| Augusta ● | Machias ■ |
| Bangor ■ ★ ★ ★ | Madawaska ■ |
| Bar Harbor ■ | Medway ■ |
| Bath ■ | Milo ■ |
| Belfast ★ | Mount Desert Island ● |
| Belgrade ■ | Norway ● ★ |
| Biddeford ■ ★ | Pleasant Point ■ |
| Brunswick ● ★ ★ ★ | Fortland ● ★ ★ ★ ★ ★ |
| Camden ■ | Presque Isle ■ |
| Cape Elizabeth ★ | Princeton ■ |
| Caribou ● | Rockport ★ |
| Coopers Mills ■ ★ | Richmond ■ ★ ★ ★ |
| Damariscotta ● ■ ■ ■ ★ | Saco ★ |
| Dover-Foxcroft ■ | Sanford ■ |
| Falmouth ★ ★ | Scarborough ● ★ ★ ★ |
| Farmington ■ | Skowhegan ● ★ ★ ★ |
| Fort Kent ■ | Stonington ■ |
| Hampden ■ ★ ★ | Van Buren ■ |
| Harrington ■ | Waldoboro ★ |
| Houlton ■ | Westbrook ★ ★ |
| Kennebunk ■ | Wiscasset ★ ★ |
| Kittery ★ | York ★ |
| Lewiston ● ■ ■ | |



half-tuition scholarships, a critical factor in attracting the best students, regardless of their ability to pay, and limiting the impact of educational debt on career choice. Maine Track philanthropy is coordinated through the MMC and TUSM development departments with goals set by the Maine Track Steering Committee and approved by the MMC Board of Trustees. The generosity of Maine individuals and foundations such as the Libra Foundation cannot be overstated. The scholarship program has allowed the Maine Track to attract students who may have chosen other medical schools or been unable to attend the Maine Track due to debt burden.

Financial stability provided by TUSM financial aid, MMC’s medical education funding, community hospital support, and dedicated philanthropy allowed program leadership to explore and implement an educational model tailored to Maine—the Longitudinal Integrated Clerkship (LIC)—a signature feature of the Maine Track. The LIC, originally developed at Cambridge Hospital,¹¹ fosters longitudinal third-year medical student clinical experiences, unlike the traditional specialty block structure. The Maine Track sponsors the LIC at MMC, nine Maine community hospitals, and the Veterans Administration Healthcare System in Togus, Maine. The value of the LIC for each participating community, in spite of its complexity and costs, is key to the success of the Maine Track. A central value question for each of the nine communities was, “are we willing to commit scarce resources over years to an educational program that will hopefully enhance the recruitment of physicians, improve patient care, and the health of our community?” An affirmative answer to this question

required trust, leadership, and the courage to innovate while acknowledging the potential risk for hospital leaders.

At its simplest, the Maine Track curriculum consists of two pre-clinical years at the TUSM Boston campus and two years of clinical experience in Maine. Within this framework, other Maine Track features encouraging rural practice include a three-day rural immersion during orientation; a rural-oriented second-year introduction to clinical medicine; optional Maine summer research internships including community-based research projects; and fourth-year electives in rural medicine.

The LIC has proven to be the most attractive and impactful feature of the Maine Track program. Envisioned to bring educational continuity¹² into the clinical clerkship experience, the rural LIC offers a patient- and learner-centered approach during the third year of medical school. Further, the LIC is readily adaptable to smaller community hospitals where students are fully immersed in patient care with meaningful patient and teaching-physician relationships, medical decision-making and continuity throughout a patient’s illness. These formative experiences promote interdisciplinary and interprofessional practice learning with students often becoming patient advocates throughout a variety of care venues.

Students immersed in a community setting gain an understanding of local culture and demographics, social determinants of health, and the relationship between health and health care. The LIC faculty experience often reinvigorates careers, bringing joy and fulfillment to demanding professional lives. For LIC hospitals, faculty participation supports the clinical staff through recruitment

of future graduates, retention, and improved performance by clinicians. Learning is bidirectional—students acquire knowledge and skills from community preceptors, and in turn, faculty learn as they prepare to teach. Many LIC clinicians have expressed sentiments such as, “I’m a better doctor because of the students.”

Early results

A new medical educational program must be accountable and quickly establish credibility in multiple domains including applicant and student characteristics; academic performance of students in the program; faculty and student satisfaction; and placement of graduates in Maine careers. With the exception of longer-term measures such as career placement, these goal measures are captured in the Maine Track Scorecard, owned and managed by the steering committee.

Initially, 25 percent of the financial support from TUSM to MMC was driven by annual scorecard results, and conceived as a payment for quality. Scorecard measures and student survey results are shared with all faculty, administrative, and governance colleagues. The results also help to make curricular adjustments to improve the program, and recognize outstanding faculty. A subset of the scorecard is shared with each community LIC site during their annual visit, and when appropriate, quality payments are shared proportionately to support local program costs.

MMC sponsors an annual full-day medical education retreat for community hospital faculty and leaders, MMC faculty and leaders, and TUSM leadership. This event ensures that all parties remain focused on the shared educational and health system goals for the program.

The academic year 2014-15 scorecard demonstrates that the mean undergraduate Grade Point Average and Medical College Admission Test scores of Maine Track students are comparable to those of the overall TUSM class. This is also true over time for the Observed Structured Clinical Examination, United States Medical Licensing Examination steps 1 and 2, and student and faculty satisfaction scores.

A key test of the Maine Track is career choice, particularly student interest in primary care, and placement of its graduates in Maine residencies. Data from the 2018 AAMC Graduation Questionnaire¹³ support

the intention of many graduating Maine Track students to practice in smaller communities and care for underserved populations. Compared with a national average of 3.4 percent, 33.3 percent of graduating Maine Track students plan to practice in communities with a population of less than 10,000. Regardless of location, 45.5 percent said they intend to care primarily for an underserved population compared with 34.7 percent of students nationally.

The 2017 match results were typical of the first six graduating classes: 51 percent chose a primary care residency (internal medicine, family medicine, pediatrics, and medicine-pediatrics). Students who participated in the LIC had a higher primary care match rate (68 percent) as did those receiving Maine Track tuition scholarships (58 percent); 39 percent chose a MMC residency, significantly more than MMC’s residency recruitment from non-TUSM medical schools prior to the Maine Track relationship with TUSM.

As Maine Track graduates complete their residency programs, the steering committee is beginning to understand

2014-2015 Maine Track Scorecard			
Admissions Data			
M18 Matriculant Mean Total GPA	Goal	Actual	Percentage
	≥TUSM mean GPA (3.67)	3.66	6%
M18 Matriculant Mean MCAT	Goal	Actual	Percentage
	≥TUSM mean score (32.6)	32.6	6%
M19 Maine applicant number	Goal	Actual	Percentage
	75	81	8%
		Total	20/20%
Exam Data			
M17 & M18 COURSES	Goal	Actual	Percentage
	> TUSM % Pass (89%)	92%	5%
M16 EOY OSCE	Goal	Actual	Percentage
	> TUSM % Pass (94.9%)	86.20%	5%
M17 USMLE Step 1	Goal	Actual	Percentage
	> TUSM % Pass (97%)	97%	5%
M17 USMLE Step 1	Goal	Actual	Percentage
	> TUSM Mean Score (227)	227	5%
M15 USMLE Step 2	Goal	Actual	Percentage
	> TUSM % Pass (98.7%)	97%	5%
M15 USMLE Step 2	Goal	Actual	Percentage
	> TUSM Mean Score (243)	243	5%
		Total	30%
Student Satisfaction Data			
M16 LIC Student Satisfaction	Goal	Actual	Percentage
	≥TUSM mean score (4.3)	4.2	10%
M16 Block Student Satisfaction	Goal	Actual	Percentage
	≥TUSM mean score (4.3)	4.3	5%
M15 GQ Overall Satisfaction	Goal	Actual	Percentage
	≥TUSM mean score (4.3)	4.4	15%
TUSM Dean's Assessment			
Discretionary	Goal	Actual	Percentage
	Qualitative assessment	20	20%

GPA = Undergraduate Grade Point Average, MCAT = Medical College Admission Test score, M17 = student class graduating 2017, EOY OSCE = End Of Year Observed Structured Clinical Examination, USMLE = United States Medical Licensing Examination, LIC = Longitudinal Integrated Clerkship, GQ = Graduation Questionnaire, satisfaction scores based on a scale from 1-5, TUSM mean score () = overall class performance, same year.

the early impact of the program on Maine's physician work force. When the analysis focuses on those who have completed all of their GME training, 43 percent of Maine Track graduates have chosen to practice in Maine. Placing graduates in Maine communities and the impact of the program on overall recruitment of clinicians continue to be benchmarks of the program.

Beyond objective outcomes, an intriguing story has emerged from the participating LIC communities. Community hospitals without a prior history of medical student education have begun to take note of how engaged staff are with their students. LIC students are immersed in their communities and local cultures learning the virtues and challenges of life in small Maine communities. Their curiosity leads them to learn about local health patterns, industries, educational systems, history, and to get involved.

Through these experiences and their clinical education, each student acquires a deeper understanding of what it means to be a physician in a rural community. Local health care leaders, fatigued by external authority white papers and consensus recommendations about physician recruitment and retention, have begun to appreciate medical education in a new light.

Maine Track stories

Milo is a town of 2,340 residents in Piscataquis County, Maine. A center of tourism near Baxter State Park and Mount Katahdin, 19th century Milo hosted the timber industry and was an important railroad center. Its population peaked in 1940 at 3,000, and has declined since. Its newest physician is John Daggett, MD, a Maine native who graduated from the Maine Track in 2014, and completed an internal medicine residency at MMC in 2017. He practices in a Federally Qualified Health Center (FQHC) in Milo and lives in nearby Sebec, Maine. Daggett's practice encompasses poverty, chronic illness, and addiction. In confronting these challenges, Daggett notes:

Having been engaged in health care throughout my training in Maine, I feel I am better prepared to tackle the unique challenges presented by the delivery of rural health care.

Skowhegan, Maine is a community of 8,589 residents in Somerset County. Marya Spurling, MD, is a 2013 graduate of the Maine Track, and completed a family medicine residency in Alaska before returning to Maine to enter practice in Skowhegan. Spurling comments:

As a Maine native, I felt privileged to be able to train in

rural Maine through the LIC. My third-year experience in Farmington had a direct impact on my family's decision to return to central Maine after residency, and the foundation built during the LIC has helped shape more than my medical knowledge and experience but also my community ties, which are incredibly important to rural practice. I am also excited to become more involved in the LIC as a Family Medicine Preceptor for the Maine Track's next generation of Maine physicians.

Dick Willett is CEO of Redington-Fairview General Hospital (RFGH) in Skowhegan where Spurling practices. Provider recruitment and retention is a constant challenge to maintain critical services for this community hospital. RFGH had previously hosted medical students and residents for one-month rotations, but the nine-month Maine Track LIC represented a major organizational commitment to medical education. When asked about the Maine Track, Willett didn't hesitate to say:

Our medical staff leadership was enthusiastic from the beginning. Once our first two students arrived, we knew it was a good decision. Their enthusiasm and desire to learn was infectious and the entire organization became involved. The opportunity to teach also became an asset to recruit new physicians and other clinicians. We're proud to have a member of the inaugural Maine Track class now practicing family medicine in our community.

Caribou is a community of 7,736 in Aroostook County, Maine, near the Canadian border. Its hospital, Cary Medical Center, recently welcomed Caleb Swanberg, MD (AOA, Tufts University School of Medicine, 2015), a Maine native, back to the community following his graduation from the Maine Track and a family medicine residency in Utah. Swanberg states:

The importance of community was one of the most significant values I learned growing up in rural Maine. As I entered medicine, I knew that I wanted to become a rural family practice doctor. The Maine Track reinforced the importance of community. In the first week of medical school, we were sent to small towns, learning how important and rewarding primary care medicine can be in a rural area. We discovered that by living in, and giving back to, our community, we can better care for those within it. I have been able to return to my hometown. The Maine Track fostered a love of community medicine that has made me the doctor I am today.

For TUSM and Dean Harris Berman, the Maine Track offered an opportunity to expand TUSM's class size, and access to clinical sites at Maine Medical Center and in Maine rural communities. The chance to create an innovative educational program focused on rural practice was an added incentive. Berman stated:

The Maine Track, now in its 10th year, has solidified the relationship between TUSM and Maine. The focus on preparing physicians for careers in rural practice has attracted high quality medical school applicants and added new depth to our educational offerings.

Maine Medical Center's CEO Rich Petersen shares a similar view on the benefit of the program for MMC and Maine:

The Maine Track has helped fuel a transformative change in Maine Medical Center. Teaching excites our faculty, and the presence of smart, curious medical students has created new energy in our organization. Our recruitment of physicians and other leaders has also benefited, bringing new talent to our growing clinical enterprise.

Patients in LIC hospitals enjoy assisting student learning. A patient recounting her experience with an LIC student said:

I felt touched and honored...surprised that my story could have any sort of impact on anyone. It will be something that I will always remember.

And, when asked about their medical student, a family member of a hospitalized patient stated:

I think she learned that the patient is a fellow human being with emotions.

Why does the Maine Track work?

The identity of the Maine Track begins with its structure and culture of broad ownership and shared values designed to benefit all partners. Rural physician work force development is a strategic priority for TUSM, MMC, and the Maine Track community hospitals.

The Maine Track Steering Committee continues to be the primary vehicle guiding the partnership at multiple organizational levels, from high-level leadership and governance to individual faculty members.

For TUSM, this relationship strengthens its network of teaching hospital partners, increases its visibility in rural and primary care education and brings a new cadre of teaching faculty to the school.

MMC recognizes that this program brings distinction to the organization, helps recruit highly-skilled clinicians and leaders, and supports its pipeline of future physicians. Bond rating agencies have identified the strength of the TUSM-MMC relationship in their assessment of MMC.

The Maine Track hospitals have embraced medical education as a strategic asset supporting their respective health care vision, and is complementary to clinical work. The LIC faculty and staff, hospital leadership, and boards of trustees are making the necessary financial and programmatic investments to make the LIC model work. Medical students quickly assess how interested faculty and staff of teaching hospitals are in their education and professional development. The Maine Track LIC student satisfaction scores affirm the strength of this support.

Faculty development provided by TUSM and MMC, coupled with the dedication of local clinicians to teaching excellence, has ensured a solid Maine Track educational experience. The evolution of experienced clinician to clinician-educator, observed by nearly every participating hospital CEO, has had a favorable impact on local medical staff retention. The Maine Track and TUSM student body have recognized the teaching excellence of community faculty, ensuring an authentic and rewarding rural health care experience, and influence on residency training and career selection.

Contemporary medical education themes, such as interprofessional and team care, population health, critical clinical reasoning, social determinants of health, quality, safety, and improvement science bring a new learning dimension to Maine Track hospitals. Community faculty development translates into early adoption of contemporary concepts into local health care culture and practice. Students are favorably impacted by the collegial environment in a community setting, and incorporate those acquired skills into their developing professional practice. Students have been known to ask awkward questions provoking a re-examination of long standing practice, often resulting in improvement by clinicians and organizations. The impact of this imprinting process is difficult to measure but readily acknowledged by local faculty and hospital leaders as a benefit of the Maine Track program.

The scholarship program has proven to be very important to the Maine Track's success. Financial support helps deserving students obtain a medical education with lower debt, making residency and career choices less complex. Maine state government has converted a student loan program into scholarships for Maine Track and other medical students, renaming the program "Doctors for Maine's Future." Endowed legacy scholarships from individuals, foundations, physician

groups and health care organizations are increasing. For physicians, the opportunity to teach and contribute to the scholarship program allows them to give back to their profession and increase fulfillment in their careers.

This collective generosity and the sense of responsibility engendered among student recipients are fundamental to realizing the vision and long-term future of the Maine Track.

Future opportunities

As the Maine Track enters its 11th year, planning is under way to further strengthen the pipeline of future physicians and other clinicians, while supporting local communities and their hospitals in new ways. In collaboration with Stephens Memorial Hospital in Norway, Maine, MMC's internal medicine residency has launched a shared rural track, believed to be the first in the nation. Known as the Rural Internal Medicine in Maine (RIMM) Track, it is designed to prepare graduating internists for careers in underserved communities. This offering has attracted significant attention among internal medicine residency applicants, and has placed its first graduate in a rural practice.

The Maine Track has also developed a Certificate in Health Care Improvement in collaboration with TUSM and the Dartmouth Institute for Health Policy and Clinical Practice. This program is designed for medical students in the Maine Track and LIC community hospital and clinic leaders—executives and clinician leaders, including nurses and physicians. The program consists of five modules presented in a distance-learning format covering principles of population health, quality and safety, improvement science, practice variation and leadership. For community hospitals adapting to greater and greater performance requirements, this certificate experience has proven to be a cost effective and impactful opportunity. Upon completion of the program, participants receive a certificate in health care improvement.

The Maine Track collaboration has recently extended its focus to include clinical research. In 2017, MMC and University of Vermont researchers were awarded a \$20 million Clinical and Translational Research (CTR) award by the National Institutes of Health. The CTR funds the Northern New England Clinical and Translational Research Network, providing rural patients access to cutting edge clinical trials and therapies.

Medical education can do more to improve the health of rural America. The Maine Track, as an academic partnership between a medical school, an academic medical center, and rural community hospitals, is an educational model with verifiable outcomes and impact that is likely transferrable and scalable to other rural settings.

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