AMERICAN COLLEGE OF PREVENTIVE MEDICINE | *PHYSICIANS DEDICATED TO PREVENTION*

Strategic Roadmap for Integrating Lifestyle and Preventive Medicine into Undergraduate Medical Education

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I. Executive Summary

Situation Overview

The United States spends more on health care than any other nation in the world, yet the U.S. has lower returns on its investment in terms of positive health outcomes.[1] The CDC reports that 90% of the $3.5 trillion in annual U.S. health care expenditures can be attributed to chronic health conditions experienced by approximately 60% of the U.S. adult population.[2] Lifestyle-related determinants of health such as physical activity, nutrition, stress, sleep and the abuse of tobacco, electronic nicotine delivery systems and other addictive substances contribute to many of these preventable non-communicable chronic diseases (NCDs). The prevalence of obesity, diabetes and other NCDs has increased over the last several decades and is projected to continue to increase in the years to come, along with the cost burden to our healthcare systems.

Decades of research indicates that lifestyle interventions and preventive health measures can positively impact health. Despite this evidence, the attention and training given to lifestyle and preventive medicine in medical education continue to be inadequate, inconsistent and disproportionate to the influence lifestyle determinants have on health. As a result, the physician workforce lacks the skills and knowledge to effectively counsel patients on lifestyle and preventive health measures that could dramatically improve individual and overall population health.

Summary of Response and Key Insights

On August 17, 2020, the American College of Preventive Medicine (ACPM) convened a group of 24 stakeholders representing leading national health care organizations to collectively articulate recommendations for integrating lifestyle and preventive medicine contents into undergraduate medical education (UME). The recommendations outlined in this white paper focus on scaling and accelerating current initiatives underway to affect an increase in national, systemwide uptake of lifestyle and preventive medicine contents in UME. The assumption underlying these recommendations is that integrating the contents of lifestyle and preventive medicine into UME will result in content and curriculum that is better aligned with population health needs and will contribute more meaningfully to the training of a generation of physicians equipped to meet the future demands of health care.

Current trends toward society and data-driven medical education that is more competency-based, informed by community partnerships, inclusive of interprofessional collaboration and acknowledging of students as catalysts for change make this an opportune time to advance initiatives to include lifestyle and preventive medicine in UME. Additionally, the COVID-19 pandemic and heightened awareness of systemic racism in the healthcare system contribute to a sense of urgency in affecting system-wide change that increases health equity and reduces the prevalence of preventable NCDs, particularly among higher-risk populations.

Integrating lifestyle and preventive medicine contents into UME is only the first step in the process. For the current and future physician workforce to develop the skills and knowledge necessary to meet the health needs of the population, the inclusion of lifestyle and preventive medicine must occur across the continuum of medical education and professional practice. This will require partnership and engagement at every level — from national organizations that set the standards for medical education and professional licensure, to policymakers, to individual medical schools, faculty and deans, to employers and professionals in the workforce.

The following summary of recommendations reflect desired outcomes in five domains, identified by convening participants, as areas in which they could have the highest return on investment to drive change. Additional milestone objectives for each domain are included in Section IV.

Summary of Recommendations for Integrating Lifestyle and Preventive Medicine into UME

Overarching Vision

The next generation of physicians is trained in the biomedical, clinical, social and behavioral skills needed to dramatically assist patients to reduce preventable chronic disease and improve the health of the population.

Goal

The contents and competencies of lifestyle and preventive medicine are incorporated into undergraduate medical education across **all medical schools** to ensure medical students receive necessary training in behavior change, nutrition, physical activity, sleep, stress management, social connectedness and the abuse of addictive substances to effectively support patients to address behavioral, environmental and social determinants of health and wellbeing.

DOMAIN 1:	MEDICAL SCHOOL LEADERSHIP AND ADMINISTRATION
DESIRED OUTCOME:	100% of undergraduate medical schools in the U.S. are engaged in the process of integrating the foundational components of lifestyle and preventive medicine into their curriculum, as well as into their institutional cultures.

DOMAIN 1:	MEDICAL SCHOOL LEADERSHIP AND ADMINISTRATION
MILESTONE OBJECTIVES:	❖ Include lifestyle and preventive medicine components on National Board of Medical Examiners (NBME) Subject Exams and U.S. Medical Licensing Examination USMLE Step 1 Exams. ❖ Achieve a “critical mass” of medical schools teaching lifestyle and preventive medicine components across all years, systems and domains. ❖ Leverage and reinforce student demand for training and practice in the components of lifestyle and preventive medicine. ❖ Advance efforts to shift the explicit and implicit cultural norms within medical school environments.

DOMAIN 2:	MEDICAL SCHOOL FACULTY
DESIRED OUTCOME:	Faculty within each medical school are aware of and understand the importance of integrating contents of lifestyle and preventive medicine into curriculum and instruction, both in the classroom and clinical settings, and are actively engaged in this process.
MILESTONE OBJECTIVES:	❖ Grow the network of faculty champions and advocates for lifestyle and preventive medicine within medical schools. ❖ Establish and/or leverage faculty, physician and student special interest groups within medical schools and medical school communities. ❖ Collect and share evidence-based best practices related to the integration of lifestyle and preventive medicine contents into UME. ❖ Increase faculty access to peer support, curriculum resources and evidence-based best practices for integrating lifestyle and preventive medicine contents into UME. ❖ Develop and disseminate curriculum assessment and mapping tool(s) to support faculty to map current content to lifestyle and preventive medicine contents. ❖ Increase faculty development opportunities for educators to become proficient in teaching lifestyle and preventive medicine across the biomedical and clinical sciences and across disciplines, systems and domains.

DOMAIN 3:	CURRICULUM
DESIRED OUTCOME:	Achieve stakeholder alignment around a national, evidence-based core curriculum for UME that provides a framework for individual medical schools to adapt traditional courses to include contents of lifestyle and preventive medicine. Increase the number of medical schools that overtly include lifestyle and preventive medicine core curriculum that includes an equity lens to address the social, behavioral and environmental influences of health, as standard and expected in basic biomedical and clinical science modules for all four years of undergraduate medical education.
MILESTONE OBJECTIVES:	❖ Consolidate and leverage student interest and demand for content and training related to maintaining their personal wellness and resilience as well as to better support patient health. ❖ Support schools to forge community partnerships to inform the development of lifestyle and preventive medicine-related curriculum that is responsive to the needs and challenges of the communities, individual medical schools and the connected health systems served. ❖ Continue to identify, aggregate and promote successful models for integrating lifestyle and preventive medicine contents into undergraduate medical curriculum. ❖ Support faculty and medical schools to conduct content mapping by module to identify existing or potential alignment with lifestyle and preventive medicine content-related learning objectives and competencies that also satisfy LCME accreditation standards.

DOMAIN 4:	WORKFORCE
DESIRED OUTCOME:	A sustainable physician workforce of the future that understands and acknowledges the importance of lifestyle and preventive interventions and is educated and equipped to: ❖ model the foundational principles of wellbeing and resilience; ❖ collaborate with other providers/partners across the health care continuum in an interprofessional team-based approach; and, ❖ provide counseling, support and community connections to respond to the current and emerging health care needs of the population with respect to lifestyle and preventive medicine, social influences on health, and health inequity.
MILESTONE OBJECTIVES:	❖ Elevate awareness and acceptance of lifestyle and preventive medicine as legitimate and critical areas of medicine, among the medical community and the public. ❖ Develop and disseminate continuing medical education specific to content of lifestyle medicine to provide active physicians the skills and knowledge they need to confidently provide lifestyle and preventive services. ❖ Promote the usage of shared medical appointments (i.e., group visits) within clinical settings. ❖ Maintain and grow residency programs that provide physicians with the opportunity to practice lifestyle and preventive medicine in a variety of clinical settings. ❖ Foster a robust integration of relevant lifestyle and preventive medicine contents into graduate medical education across all residencies and specialty training programs. ❖ Partner with leading employers of the physician workforce to create the shifts in incentives, motivation and enhanced workplace culture required to generate demand for and receptivity of physicians competent in addressing foundational behavioral and environmental causes of disease and cost.

DOMAIN 5:	POLICY
DESIRED OUTCOME:	National, state and local policies — both in the public and private sectors — impacting education and training in lifestyle and preventive medicine reflect and advance evidence-based best practices, rather than industry influence.
MILESTONE OBJECTIVES:	❖ Coordinate advocacy initiatives and committees across stakeholder groups to create a bipartisan, unified voice representing medical societies, medical schools and students, governmental agencies, public health organizations and other private sector stakeholders. ❖ Identify opportunities to leverage synergies between advocacy initiatives supporting lifestyle and preventive medicine and other aligned health-related issues. ❖ Develop a coordinated advocacy agenda to advance the healthcare payment system toward value-based payment models to drive Triple/Quadruple Aim health care outcomes and population health improvement. ❖ Coordinate the activities of key stakeholders to revise the tax provisions of not-for-profit health systems and institution requirements (i.e., Community Benefit) to include accountability for improving the health of the community using standardized measures. To achieve this outcome, physicians with competency in lifestyle and preventive medicine will be needed.

II. Introduction

Situation and Background

The Case for Lifestyle and Preventive Medicine in Undergraduate Medical Education

According to the Organization for Economic Co-operation and Development (OECD), the United States spends more on health care than any other nation in the world ($9,451 per capita), yet the U.S. has lower returns on its investment in terms of value and positive health outcomes.[1] The CDC reports that 90% of the $3.5 trillion in annual U.S. health care expenditures can be attributed to chronic health conditions experienced by approximately 60% of the U.S. adult population.[2] Substantive evidence supports the influence of lifestyle, environmental and social determinants on overall health; the significant cost of preventable non-communicable diseases (NCDs); and the benefits of giving greater attention to teaching and practicing lifestyle and preventive medicine.[3] Recent research demonstrates that adopting a healthy lifestyle may prevent 90% of all heart disease (including 81% of heart attacks), 50% of strokes, 93% of diabetes and 36% of cancers.[4] Training in lifestyle and preventive medicine contents, particularly nutrition, physical activity, smoking cessation, sleep and stress management, can provide current and future physicians with the knowledge and skills to better meet social needs. Despite this data, there is insufficient medical education, structure, incentive and support to enable physicians to effectively address lifestyle-related determinants of health in the clinical setting.[4]

History of Initiatives to Include Lifestyle Medicine Contents in UME

In June 1975, an article published in the *Journal of Medical Education* recognized for the first time a lack of training for physicians on the importance of physical exercise, citing a survey that revealed only 16% of medical schools offered curriculum related to exercise.[5] A decade later, the National Academy of Sciences (NAS) released its National Research Council report on Nutrition Education in U.S. Medical Schools recommending at least 25 hours of nutrition education in undergraduate medical education (UME), in response to the lack of training in medical school on the relationship between diet and disease.[6] By 2010, a survey of U.S. medical schools found nutrition education was still inadequately or unevenly covered throughout all levels of medical training, including undergraduate, postgraduate, fellowship, licensing, board certification and continuing education. Furthermore, that same survey revealed that only 26% of the responding schools met the minimum recommendation of 25 hours of nutrition education set by NAS in 1985.[7]

The prevalence of obesity, diabetes and other NCDs in the U.S. has increased over the last several decades.[8,9] Incidence rates for these conditions — and the related economic burden and strain on the healthcare system — are expected to continue to rise in the coming years. Cardiovascular disease-specific mortality rates had been declining for decades in the U.S., likely due to both increases in tobacco cessation and improvements in cardiac care. Beginning in the mid-2000s CVD-specific mortality rates began to rise again, due in part to the increased prevalence of chronic obesity.[10] This example provides insight into how lifestyle, behavior and

environment are core drivers of disease and death, as opposed to medical technology.

More recently, progress toward a more widespread integration of lifestyle and preventive medicine contents into UME can be seen in ACPM and the American College of Lifestyle Medicine's (ACLM) joint effort to develop a lifestyle medicine core competency course of more than 30 continuing medical education (CME) hours; the efforts of the Lifestyle Medicine Education (LMEd) Collaborative's work to aggregate and share evidence-based lifestyle medicine curriculum and integration strategies modeled by medical schools on the leading edge of integrating lifestyle and preventive medicine contents into UME; the development of board certification for Lifestyle Medicine as a medical specialty; and most recently in the launch of Association of American Medical Colleges' (AAMC) initiatives related to physician wellbeing, resilience and the response to systemic racism.

Although gains have been made, progress has been slow or halting. Individual initiatives have failed to gain the traction necessary for system-wide adoption of lifestyle and preventive medicine contents as core to the undergraduate medical education curriculum.

The Impact of COVID-19 and Systemic Racism on the Need for Lifestyle and Preventive Medicine Education

The ongoing disruptions to nearly every sector in the U.S. economy and the continued mental, emotional, health and financial strain on the population due to the prolonged COVID-19 pandemic has far-reaching implications for medical education and the health care sector overall. Short- and long-term consequences include:

- the need to reimagine medical education in a virtual or social distance-appropriate setting;
- educational pipeline issues resulting from disruptions to medical education;
- regulatory issues resulting from changes to insurance and reimbursement;
- changes in methods of health care delivery including the rapid uptake of telehealth;
- changes in workforce exits related to burnout, COVID-19 deaths, postponed retirement or early retirement;
- shifts in the specialty mix as interest in some specialties (e.g., infectious disease) may increase while interest in other specialties decrease; and,
- fluctuations in demand for physicians related to scope-of-practice changes for other health care professions, and changes in demand for care due to critical care for COVID-19 cases or delayed care for elective services.[11]

The elevated incidence rate of COVID-19 among black and brown populations, in addition to the resurgence of Black Lives Matter protests nationally and internationally following the May 25, 2020, killing of George Floyd, has contributed to a heightened national awareness of the prevalence and consequences of systemic racism. This awareness directs attention to the relationship between systemic racism, health disparities, comorbidities and chronic conditions

influenced by social determinants of health, and the inherent privilege of having opportunities to make healthy lifestyle choices. The core contents of lifestyle medicine — healthy diet and nutrition, physical activity, proper sleep, mature stress management and coping skills, social connectedness/increasing social capital/positive relationships, and avoidance of addictive substances — are all heavily influenced by one's physical environment, geographic location, economic situation, social community and, ultimately, one's experience of racial identity and racism in a society that is designed to reinforce white privilege. To address the social constructs that contribute to health disparities and the increased prevalence of chronic conditions and comorbidities within communities of color, systemic racism must be a part of the ongoing conversation in medical education.[12]

While the current context presents challenges, it also presents opportunities to take advantage of disruptions to the status quo and intentionally re-design undergraduate medical education to be more responsive to the health needs of the population, better prepare future physicians to address health disparity and acknowledge physician humanism and the need to support wellbeing and resilience among practitioners, as well as patients.

Trends in Shaping Medical Education Transformation

During the August 17, 2020, stakeholder convening to address the integration of lifestyle and preventive medicine contents in undergraduate medical education, Malika Fair, MD, MPH, Senior Director for Health Equity Partnerships and Programs, Association of American Medical Colleges shared trends in medical education shaping conversations about education reform.[12]

- **Society and data-driven medical education:** Very little of what is taught in medical schools and tested on National Board of Medical Examiners (NBME) subject exams relates to what is necessary for the health of the public. There is increasing attention on this gap in medical training and the implications on the development of a future physician workforce capable of meeting the population's health needs.
- **Students as a catalyst for change:** Medical student organizations and interest groups have demonstrated their power to raise awareness, create demand for change and inspire action to address social and professional concerns.
- **Community-partnered education to inform evolving medical education content:** Although the medical education curriculum is often perceived as difficult to change, over the last few decades there have been pushes to update curricula to incorporate new community-driven topics. Some of these topics include population health, health systems sciences, professionalism and, more recently, wellness and resiliency, addiction treatment, emergency preparedness, epidemiology and anti-racism content into medical education.
- **Transitions to competency-based education:** Medical education is transitioning to a competency-based curriculum that includes new and emerging topic areas such as quality improvement, patient safety, health care equity, diversity and inclusion and telehealth.[13]

- **Interprofessional education:** Interprofessional education has been a topic of discussion within the medical community for years. However, the importance of team-based and collaborative care across specialties and health providers has been elevated by the current pandemic situation and the related attention on addressing issues of systemic racism in health care.

These five trends in medical education represent opportunities to leverage to advance the integration of lifestyle and preventive medicine contents into undergraduate medical education. The ultimate desired outcome of this effort is the development of a future physician workforce with the skills and knowledge to effectively respond to population health needs.

III. Vision for the Future of Lifestyle and Preventive Medicine in UME

Vision of the Desired Outcomes

ACPM, in partnership with convening participants, created the following vision for the integration of lifestyle and preventive medicine into undergraduate medical education. This describes the desired outcome toward which the strategic roadmap recommendations orient.

Vision

The next generation of physicians are trained in the clinical, social and behavioral skills needed to dramatically reduce preventable chronic disease and improve the health of the population.

Goal

The contents and competencies of lifestyle and preventive medicine are incorporated into undergraduate medical education across **all medical schools** to ensure medical students receive necessary training in behavior change, nutrition, physical activity, sleep, stress management and the abuse of addictive substances to effectively support patients to address behavioral, environmental and social determinants of health and wellbeing.

Consideration for Success

Participants in ACPM's convening on the integration of lifestyle and preventive medicine contents into undergraduate education identified several conditions for success and raised considerations that may require further discussion.

- **Inclusion of all medical specialties:** All medical specialties — not just primary or family care physicians — need to understand how to deliver lifestyle interventions that impact behavior change and thus, the delivery of care and the effectiveness of treatment.
- **Alignment around a common cause:** Convening participants noted the importance of this effort reflecting a common cause and not a competition among specialties, schools and advocates of lifestyle and preventive medicine.
- **Community connection and referrals:** For physicians to be effective in supporting patients to address the lifestyle, behavioral, environmental and social determinants of health they need the skills and knowledge to not only provide clinical services to patients but also to cultivate referral relationships and connections to community resources.
- **National and place-based champions:** In the past, successful introductions of new content into medical school curriculum were spearheaded by champions on multiple levels: nationally, within the active physician community and individual medical schools.

- **Top-down and bottom-up strategies:** There is a need to set agendas that drive change from the top down, engaging national organizations that have influence over medical schools, exams and policy, as well as from the bottom up, leveraging patient demand, student demand and faculty interests at the community and school levels.
- **Unintended connotations of "lifestyle medicine":** The term "lifestyle medicine" may be controversial as it tends to imply individual choice without acknowledging the impact of social, environmental, racial and economic determinants of health that influence a person's ability to pursue healthy lifestyle options. This potentially introduces culpability bias that may inhibit a physician's willingness and perceived ability to provide support. Additionally, Lifestyle Medicine as a specialty has specific meaning and goals that may not be inclusive of the full range of determinants of health this strategic roadmap seeks to integrate into undergraduate medical education.
- **Momentum related to wellness and resilience:** Convening participants suggested exploring the opportunity to gain traction by intentionally linking to the language of wellness and resiliency that currently has momentum among accreditation agencies such as AAMC and the Accreditation Council for Graduate Medical Education (ACGME).
- **Student and workforce health as a benchmark of success:** One of the challenges inherent in the healthcare system is that the culture in medical schools and among the physician workforce consistently contributes to stressful situations, pressure and overwhelming workloads. The consequence has been a "dehumanization" of students and physicians, who lack basic wellness and resiliency skills and do not personally practice the positive lifestyle behaviors they are expected to encourage among patients. Using student and workforce wellbeing and resilience as a benchmark for success may result in improvements in the ability of physicians to personally model what they prescribe to patients.
- **Supportive resources to assess and elicit change:** Each medical school has a unique culture and learning format they use to meet educational requirements. In order to facilitate or scale the change we are seeking, providing self-assessment tools for determining where shifts can be made or where benchmarks are already being addressed might enable initial steps for change.
- **Alignment with environmental sustainability and health-supporting built environments:** There is an opportunity to link lifestyle and preventive medicine to movements that encourage sustainable plant-based nutrition and safe, outdoor environments, such as initiatives at Association of American Medical Colleges (AAMC), the Physicians Committee for Responsible Medicine (PCRM), Health in all Policies and other medical and non-medical organizations.

The strategic roadmap recommendations described in the following section are intended to provide a framework for advancing the integration of lifestyle and preventive medicine contents into undergraduate medical education. Success in this endeavor will require alignment of current initiatives and stakeholders to drive collective action and impact.

IV. Strategic Roadmap Recommendations

Overview

Participants in the ACPM Convening on the Development of a Strategic Roadmap to Advance the Integration of Lifestyle and Preventive Medicine Contents into Undergraduate Medical Education identified five core domains representing inflection points into the medical education system where change could be most impactful and influenced. Figure 1 provides a high-level overview of the five domains, the related drivers of change within each domain and the decision-makers and influencers critical to the successful implementation of strategies for change.

Figure 1: Domains and Drivers for the Integration of Lifestyle and Preventive Medicine into UME

DOMAIN	DRIVERS OF CHANGE	KEY STAKEHOLDERS & PARTNERS (DECISION MAKERS & INFLUENCERS)
MEDICAL SCHOOL LEADERSHIP AND ADMINISTRATION	Inclusion of LM on NBME Subject Exams	❖ National Board of Medical Examiners and American Board of Physician Specialties ❖ National school accreditation organizations ❖ Board and Medical specialty ❖ Residency programs ❖ Dean, faculty, medical students
	Inclusion of LM on USMLE Step 1 Exams	
	Critical mass of medical schools teaching LM	
	Medical student demand	

DOMAIN	DRIVERS OF CHANGE	KEY STAKEHOLDERS & PARTNERS (DECISION MAKERS & INFLUENCERS)
	Medical school culture	
MEDICAL SCHOOL FACULTY	Faculty champions within medical school	❖ Deans, curricula committees, faculty ❖ Advisors, faculty mentors, students ❖ LMEd Collaborative and other sources of lifestyle and preventive medicine curricula
	Faculty and student special interest groups for lifestyle and preventive medicine	
	Faculty access to evidence-based resources and peer support	
	Curriculum assessment and mapping	
CURRICULUM	Medical student demand for lifestyle medicine curriculum	❖ Medical students, American Medical Student Association (AMSA) ❖ Community-based partners

DOMAIN	DRIVERS OF CHANGE	KEY STAKEHOLDERS & PARTNERS (DECISION MAKERS & INFLUENCERS)
	Community-informed lifestyle medicine content and curriculum	❖ Medical school curricula committees ❖ UME faculty ❖ Medical education organizations, accrediting bodies and certification boards
	Access to successful, evidence-based models for core curriculum	
	Understanding of where existing curriculum maps to lifestyle medicine objectives	
WORKFORCE	Continuing medical education to support LM skill development	❖ Medical education organizations, accrediting bodies and certification boards ❖ Medical specialty boards and membership societies ❖ Funding organizations ❖ Healthcare system delivery channels and employers
	Workforce culture shift to value wellbeing and resilience	
	Usage of shared medical appointments	

DOMAIN	DRIVERS OF CHANGE	KEY STAKEHOLDERS & PARTNERS (DECISION MAKERS & INFLUENCERS)
	Access to relevant residency programs emphasizing lifestyle and preventive medicine	
	Integration of lifestyle and preventive medicine across all specialties	
	Employer engagement in shifting workforce culture, incentives and motivation	
POLICY	Coordinated advocacy agendas	❖ National healthcare and medical associations ❖ Federal, state, local and employer policymakers and legislators
	Healthcare payment systems that support lifestyle medicine	
	Availability of funding to support curriculum reform, testing reform and residency programs	

DOMAIN	DRIVERS OF CHANGE	KEY STAKEHOLDERS & PARTNERS (DECISION MAKERS & INFLUENCERS)
	Community benefit reconfiguration to support physician wellness and resilience, and reduce chronic disease in the population	

Recommendations for Influencing Medical School Leadership and Administration

Current State Summary and Rationale

Recommendations for influencing medical school leadership and administration refer to macro-level, system-wide drivers of change that will impact how all medical schools adjust school culture, curriculum and areas of focus. Changes to these contents at the institutional level are largely motivated by the competencies tested in the National Board of Medical Examiners (NBME) Subject Examinations as well as content and knowledge tested in Step 1 of the United States Medical Licensing Examination (USMLE). In more recent years, increased attention has also been given to the culture within medical schools, as it relates to supporting medical student wellbeing and reducing the stress and burnout common among all levels of undergraduate and graduate medical education, as well as within the professional workforce.

An increasing number of medical schools across the country are exploring ways to integrate lifestyle medicine contents into their undergraduate medical education curriculum. This trend is supported by the efforts of organizations and initiatives such as the LMEd Collaborative, American Board of Lifestyle Medicine (ABLM), ACLM and ACPM, and driven by demand from students, faculty champions and population health needs. Faculty champions and experts in the field from universities and medical colleges that are leading the way in advancing this work have identified several perceived challenges that need to be addressed to support successful implementation of integration strategies at the institutional level. These perceived challenges include the:

- lack of awareness among institutional level stakeholders of the impact of lifestyle medicine treatments on the overall population health and wellbeing;

- lack of support and guidance at state and federal levels for the integration of lifestyle medicine into undergraduate medical education;
- requirement for competitive NBME/USMLE Step scores and residency placement, although these may not be relevant in the future due to the transition to pass/fail scoring;
- lack of credentialing exam questions testing competency in lifestyle medicine;
- lack of funding and resources for medical schools to implement the required changes in curriculum; and,
- lack of institutional champions to lead the way forward.[14]

Additionally, convening participants identified a particular bind inherent in the relationship between changing NBME and USMLE Step 1 exams to include more of a focus on lifestyle and preventive medicine and the number of schools actively engaged in teaching lifestyle medicine contents. NBME and USMLE design questions in response to what is overtly taught in medical schools, yet medical schools continue their curriculum based on what knowledge and skills students need to succeed in NBME subject exams and USLME Step 1 exams. This iterative feedback loop necessitates interventions at both the levels to support the case for lifestyle and preventive medicine exam questions and drive demand for change at the curricular level.

Goal for Influencing Medical School Leadership and Administration

The goal for transformation at the medical school leadership and administration level is that one hundred percent of undergraduate medical schools in the U.S. are engaged in the process of integrating the foundational contents of lifestyle and preventive medicine into their curriculum, as well as into their institutional cultures. The operating assumptions is that by doing this, medical students will develop core competency in both the clinical practice of and personal wellness habits related to nutrition, physical activity, stress management, sleep and addictive substance use. The ACLM UME Task Force partnered with the LMEd Collaborative to create a model for scaling and standardizing the integration of lifestyle medicine contents into UME that proposes a tiered structure for assessing a school's position on its journey to integrate lifestyle contents. Additionally, the model provides goals for advancing to the next tier (Figure 2). The LMEd Collaborative's model provides a method for tracking progress toward the strategic goal related to influencing medical school administration.

Figure 2: ACLM UME Task Force/LMEd Collaborative model for scaling and standardizing the integration of lifestyle medicine into UME[14]

<table>
<tr><th>PLATINUM</th><th>GOLD</th><th>SILVER</th><th>BRONZE</th></tr>
<tr><td colspan="4">A Lifestyle Medicine Interest Group is established and supported by one or more dedicated faculty, and engages students in Lifestyle Medicine Educational sessions, workshops and/or community service projects on campus and within the local community.</td></tr>
<tr><td>100% of Lifestyle Medicine Undergraduate Medical Education competencies are met for all students across ALL four years of didactic and clinical curricula.</td><td>75% of Lifestyle Medicine Undergraduate Medical Education competencies are met for all students at any point throughout medical school.</td><td>50% of Lifestyle Medicine Undergraduate Medical Education competencies are met for all students at any point throughout medical school.</td><td>25% of Lifestyle Medicine Undergraduate Medical Education competencies are met for all students at any point throughout medical school.</td></tr>
<tr><td>100 hours of Lifestyle Medicine didactic education is included as part of the core curriculum.</td><td colspan="3"></td></tr>
</table>

PLATINUM PLUS	GOLD PLUS	SILVER PLUS	BRONZE PLUS
Platinum institutions can receive a (Plus) designation by offering a Lifestyle Medicine Enrichment Track,* beyond the 100 hours included in the core curriculum.	Institutions can receive a (Plus) designation on top of their tiered rating, for meeting 25%–75% of the competencies and providing 100 hours of didactic curriculum through the supplementation of the core curriculum with a Lifestyle Medicine Enrichment Track.*		

Pathway to Drive Change

- **Work with NBME to incorporate contents of lifestyle and preventive medicine into Subject Examinations and USMLE**. The extent to which the lifestyle and preventive medicine contents and competencies are tested in NBME and USMLE student examinations influences medical schools to universally modify curriculum to include lifestyle and preventive medicine contents and competencies. Conversely, the inclusion of lifestyle and preventive medicine in NBME examinations and USMLE is influenced by the number of schools overtly teaching these contents in their curriculum. Both ends of the spectrum must be advanced, one to support the other. The first step in this process is to assess the proportion of questions on the current Subject Exams and USMLE Step Exams that fit the definition of "lifestyle" and "preventive" medicine. The blueprints for each of these exams identify the percentage of questions that represent particular disciplines. It is likely there are already questions on these exams that do address lifestyle and preventive medicine competencies. Identifying and reporting on the percentage of current questions that represent these competencies will lay the foundation for acknowledging lifestyle and preventive medicine as a test topic. Incorporating an equity lens into this effort aligns with AAMC's equity, diversity and inclusion (EDI) competencies and may accelerate this integration.
- **Achieve the "critical mass" of medical schools teaching contents of lifestyle medicine** across all years, systems and domains **of UME necessary to dictate changes to NBME Subject Examinations and USMLE Step 1 exams.**

- **Develop a comprehensive inventory of undergraduate medical schools** currently teaching content related to the contents of lifestyle and preventive medicine. This is necessary to document a critical mass of schools overtly teaching lifestyle and preventive medicine contents to support the case for including comprehensive testing of these contents on NBME Subject Examinations as well as USMLE Step 1 exams.
- **Engage key stakeholders (e.g., ACPM, ACLM, AAMC) in ongoing dialogue and joint efforts** to build awareness of, and advance, undergraduate medical schools along a continuum of integrating contents of lifestyle and preventive medicine into core curriculum, to support the development of critical mass of schools overtly teaching to these contents.
- **Amplify and disseminate the work of champions and early adopter schools and faculty** to encourage an increase in the number of medical schools actively engaged in integrating contents of lifestyle and preventive medicine into UME.
- **Leverage the relationships and gravitas of the AAMC** to enhance undergraduate medical schools' uptake of curricula integrating contents of lifestyle and preventive medicine to support the evidence that incorporating these curricula has a positive downstream impact on patient behavior and lifestyle choices, population health and student physical wellbeing.

- **Leverage and reinforce student demand for training and practice in the contents of lifestyle and preventive medicine** for student wellness, the development of positive coping mechanisms and to support the development of related clinical skills and knowledge.
- **Advance efforts to shift the explicit and implicit cultural norms within medical school environments** to support student wellbeing, resilience and practice of positive lifestyle and preventive behaviors.

Recommendations for Influencing Medical School Faculty

Current State Summary and Rationale

Medical school curriculum is largely developed by faculty members working in committees to meet the Liaison Committee on Medical Education (LCME) accreditation standards, support medical students in acquiring the knowledge and skills required to pass NBME exams, and to align with the individual medical school's goals and objectives. Although deans of medical schools ultimately provide much needed influence and approval when it comes to successfully introducing change within a school's curriculum, it is often the senior associate dean of academic affairs (or equivalent) who has a more direct understanding of what is being taught and how. Ultimately, this means cultivating buy-in and engagement from faculty responsible for designing medical school curriculum is critical for introducing and driving curricular change in undergraduate medical education.[14] Literature reviews, qualitative research, case studies and

anecdotal evidence collected and reviewed by ACPM (preceding and during the August 17, 2020, stakeholder summit) corroborate this statement by consistently highlighting the importance of identifying faculty champions within medical schools who understand the importance of, and advocate for, the integration of lifestyle and preventive medicine contents into UME. Identifying, cultivating and empowering faculty champions within and across medical schools is critical to scaling the work of integrating lifestyle medicine contents into UME already underway through initiatives led by LMEd Collaborative, ACLM, ACPM, and other like-minded organizations. Additionally, increasing faculty development opportunities for educators to become proficient in teaching lifestyle and preventive medicine across the biomedical and clinical sciences, across disciplines, systems and domains is warranted.

Recently published research and anecdotal evidence from medical schools currently engaged in or exploring efforts to integrate lifestyle medicine into their curriculum cite the following perceived challenges to influencing change and generating support at the dean and faculty level[3,14]:

- a shortage of professors and practicing physicians who have adequate training and expertise to teach lifestyle medicine in UME, GME and beyond
- competition for instructional time
- perceived importance of curriculum priorities at the faculty member level

Goal for Influencing Medical School Faculty

An ideal outcome is that faculty within each medical school are aware of and understand the importance of integrating contents of lifestyle and preventive medicine into curriculum and instruction, both in the classroom and clinical settings, and are actively engaged in this process. Additionally, there is an underlying assumption that integrating the contents of lifestyle and preventive medicine into UME will result in content and curriculum that is better aligned with population health needs and will contribute more meaningfully to the training of a generation of physicians that are equipped to meet the future demands of healthcare.

Pathways to Drive Change

- **Grow the network of champions and advocates** who are willing and able to advance awareness of, and action toward, integrating lifestyle and preventive medicine contents into UME in their medical school curriculum. The LMEd Collaborative currently maintains a network of more than 350 members, including 150 medical schools, 33 hospitals or clinics and 70 medical school faculty and administrators. This existing network provides a springboard and structure for engaging faculty from 100% of the medical schools in the U.S. A system-wide approach at the national level is needed to complement the LMEd Collaborative's grassroots efforts to engage medical schools, programs and faculty in integrating lifestyle medicine contents into UME. Coordinating a system-level approach would leverage the collective influence of national health care organizations; federal,

state and local policy; and governmental agencies to exponentially increase the network of champions and advocates.

- **Establish and/or leverage existing faculty, physician and student special interest groups within medical schools and medical school communities** (e.g., teaching hospitals, community partners) that cut across specialties and subject areas to drive demand for curriculum threads related to lifestyle and preventive medicine contents and support the dissemination and integration of best practices for including contents of lifestyle medicine in UME. Special interest groups may be multigenerational and cross functional to harness interest at several different inflection points within the medical system. Additionally, many medical schools now have "tracks" or "designations" (recognized in CV and at graduation). These tracks serve as both an opportunity for student-led activism and as affinity groups for like-minded graduates.
- **Collect and share evidence-based best practices related to the integration of lifestyle and preventive medicine contents into UME across medical schools and specialties.** Opportunities may include ongoing peer learning networks, national and/or regional convenings of medical school faculty champions and/or special interest groups, online resource sharing centers, or other innovative models of information sharing and peer-to-peer learning. At the peer-to peer level, these engagement strategies will allow medical schools further along the continuum of integration to support schools in the earlier stages of integration. National, system-wide dissemination strategies are also necessary to scale and accelerate the adoption of evidence-based practices to integrate lifestyle and preventive medicine contents into UME and scale medical schools' ownership of and ability to apply these best practices.
- **Expand and promote the LMEd Collaborative database of medical school faculty teaching contents of lifestyle medicine in undergraduate medical education to increase faculty access to peer support, curriculum resources and best practices.** The LMEd Collaborative launched this database in 2013. The database in its current iteration provides a way for faculty interested in exploring different levels of integrating lifestyle medicine contents into curriculum to connect with other faculty in their own medical schools or other schools. Strategies for amplifying awareness of this resource may include developing a targeted national campaign, leveraging in-school faculty champions and/or showcasing the database at key medical conferences.
- **Develop and disseminate curriculum assessment and mapping tool(s) to support faculty to evaluate curriculum and map current module content to lifestyle medicine contents and related learning objectives.** Providing a tool of this nature will engage faculty in an exploration of how existing curriculum may already align with or include contents of lifestyle and preventive medicine, which will help in overcoming faculty resistance to incorporating new and/or unfamiliar content. Engaging faculty in this assessment will ideally also serve to generate new champions and advocates for teaching lifestyle medicine contents in UME and help identify any gaps that may need to be filled. Finally, completing this type of curriculum assessment in each medical school will provide more accurate data regarding the extent to which lifestyle medicine contents

are already taught in medical schools, supporting efforts to incorporate lifestyle medicine related questions into NBME subject exams and USMLE.

- **Increase faculty development opportunities for educators to become proficient in teaching lifestyle and preventive medicine across the biomedical and clinical sciences, across disciplines**, systems and domains. Research indicates that lack of faculty competency in lifestyle and preventive medicine contents is a barrier to integrating these contents into UME curricula. Building faculty capacity and proficiency in lifestyle and preventive medicine will increase faculty receptivity in teaching these contents.

Recommendations for Influencing Curriculum in Undergraduate Medical Schools

Current State Summary and Rationale

Lifestyle, social and environmental determinants of health related to nutrition, physical activity, sleep, stress management and the use of addictive substances account for the majority of NCDs. Most medical students and current practicing physicians believe themselves to be ill-equipped to provide adequate counselling to patients on these topics. Over the years, there have been many initiatives designed to raise awareness of the importance of these topics and to increase the prevalence of lifestyle and preventive medicine contents in standard medical education. However, like most other efforts to introduce wide scale curricular change, progress has been slow and piecemeal. Perceived challenges in introducing broad curricular change include[3]:

- Difficulties finding space for additional material in an already compressed curricula
- Slow institutional changes to traditional curricula
- A perceived lack of evidence supporting the effectiveness of lifestyle / behavior modifications

There are currently more than 100 medical schools in the U.S. actively engaged in integrating aspects of lifestyle medicine content and learning objectives into their curriculum, as part of existing curricular content in basic or clinical courses, as a separate track or program area and as an elective or through interest groups.[14] Advancing the extent to which lifestyle medicine contents are integrated into curricula — in both basic and clinical science courses — for all students across all specialty areas is a critical milestone in the overall inclusion of the foundational contents of lifestyle and preventive medicine in UME.

Goal for Influencing Curricular Transformation

The desired outcome for curricular transformation is to achieve stakeholder alignment around a national, evidence-based core curriculum for UME that provides a framework for individual medical schools to adapt traditional courses to include contents of lifestyle and preventive medicine. A related goal in this priority area is to increase the number of medical schools that overtly include lifestyle and preventive medicine core curriculum that includes an equity lens to address the social, behavioral and environmental influences of health, as standard and expected in biomedical and clinical science modules for all four years of undergraduate medical education.

Pathways to Driving Change

- **Consolidate and leverage student interest and demand for content and training related to maintaining their personal wellness and resilience as well as to better support patient health.** As evidenced by recent movements such as White Coats for Black Lives, medical students can be a powerful catalyst for change. Harnessing this power within and across medical schools as a driver for curricular transformation can amplify demand for content that more explicitly addresses lifestyle and preventive medicine contents that are critical to the health and wellbeing of medical students, professionals in the field and patients.
- **Support schools to forge community partnerships to inform the development of lifestyle medicine-related curriculum that is responsive to the needs and challenges of the communities, individual medical schools and the connected health systems served.** Community partnerships can provide a much needed on-the-ground perspective of the health challenges within the populations served and provide medical school faculty with access to additional subject matter expertise on public health, determinants of health and lifestyle-related content to augment traditional basic and clinical science modules.
- **Continue to identify, aggregate and promote successful models for integrating lifestyle medicine contents into undergraduate medical curriculum that are currently being implemented by medical schools across the country.** The lack of a standardized lifestyle medicine curriculum, and the lack of time for developing said curriculum, is often cited as a barrier to integrating lifestyle medicine contents into undergraduate medical education. By providing medical schools with access to the existing and growing body of evidence-based, peer-reviewed curricular materials and integration approaches, the perceived barrier to curriculum development can be ameliorated.
- **Support faculty and medical schools to conduct content mapping by module against lifestyle medicine content-related learning objectives and competencies** to identify both where alignment already exists and where the potential for linkages with lifestyle medicine contents can be created. Content mapping should also take into

consideration where lifestyle medicine content-related learning objectives and competencies also satisfy LCME accreditation standards.

Recommendations for Influencing the Workforce

Current State Summary and Rationale

Medical education and physician training are designed to prepare graduates to enter the workforce and become successful practitioners, responsive to current and emerging needs of populations served. The demands and expectations of the current and future workforce influence what is taught in medical education and how it is taught. An example of how workforce needs drive curricular change can be seen in the ongoing efforts to integrate health systems sciences into medical education in order to develop a future workforce that understands how the overall health system works. The latter is necessary for practitioners to successfully navigate the complexities of everything from healthcare insurance to linkages with public health.

Recent studies conducted by leading medical education associations and credentialing entities, such as the AAMC and ACGME, highlight trends in the physician workforce that must be considered as part of any effort to drive curricular change within medical education.

- AAMC continues to project that physician demand will grow faster than supply leading to a projected shortage of total primary and nonprimary care specialty physicians between 54,000 and 130,000 physicians by 2033. These shortages are largely driven by an increase in demand as the population continues to grow and age, and a decrease in supply as a large portion of the physician workforce reaches retirement age.[11]
- Recent research suggests that physicians in primary care settings may only provide 55% of the recommended chronic and preventive services to their patients.[11] This gap is often attributed to time constraints existing in typical patient encounters. Research further suggests that this gap may also be due to physicians' lack of training in — or discomfort with — providing preventive and lifestyle-related counseling.[15,16]
- Practicing physicians and medical students continue to experience high rates of burnout due in a large part to the administrative burden driven by workplace and organizational culture, long work hours, overwhelming workload and lack of support. Burnout is typically highest among mid-career physicians who may be juggling multiple roles outside of work, in addition to the job-related stress. The relatively consistent incidence of burnout among physicians points to an inherent challenge in the structure of the healthcare industry that expects and incentivizes the conditions that lead to burnout.[17]
- Although diversity within the medical sector continues to grow, gains among Black or African Americans lag.[18]

    - The growth of Black or African American medical school applicants, matriculants and graduates continues to lag behind other groups.
    - Medical school faculty continue be predominately white (63.9%) and male (58.6%).

- Among active physicians, the majority also are white (56.2%) and male (64.1%).
- Less than 1% of U.S. medical students and physicians identify as transgender or gender binary.[19]

- The COVID-19 pandemic continues to have short- and long-term consequences on the nation's physician workforce, the implications of which are not yet fully understood. Disruptions in the education pipeline, regulatory issues, the methods by which physicians practice medicine (e.g., the increase in telehealth, the economic strain on small private practices), increased workforce exits related to COVID-19 (e.g., due to death, burnout induced early retirement, postponed retirement), shifts in the mix of medical specialties and the changes in population health demand are all consequences of the prolonged pandemic. At the same time, this high-level of disruption and the critical need to rethink aspects of the healthcare system and workforce sustainability in light of these challenges present opportunities to advance a paradigm shift in medical education and the workforce with new urgency and alignment.[11]

Goals for Transformation in the Workforce

Create a sustainable physician workforce of the future that understands and acknowledges the importance of lifestyle and preventive interventions and is educated and equipped to:

- model the foundational principles of wellbeing and resilience in their own behavior;
- effectively collaborate with other providers and partners across the health care continuum in an interprofessional team-based approach; and,
- provide counseling, support and community connections to respond to the current and emerging health care needs of the population with respect to lifestyle and preventive medicine, social influences on health and health inequity resulting from systemic racism.

Pathways to Driving Change

- **Elevate awareness and acceptance of lifestyle and preventive medicine as legitimate and critical areas of medicine, among the medical community and the general public.** This may include:

  - assessing current physician and consumer perception of the phrase "lifestyle medicine" to determine whether the phrase itself is a barrier to people's perception of its legitimacy as it may imply individual choice without acknowledging the impact of social, environmental, racial and economic determinants of health that influence a person's ability to pursue healthy lifestyle options;
  - exploring alternative phrasing and/or branding of what is currently referred to as lifestyle medicine; and

- implementing targeted marketing and brand-building initiatives to raise awareness and acceptance of lifestyle and preventive medicine.

- **Develop and disseminate continuing medical education specific to contents of lifestyle medicine to provide active physicians the skills and knowledge they need to confidently provide lifestyle and preventive services.** In addition to the clinical skills, CMEs also need to build physician skills and awareness of:

  - community connections and referrals for patients to direct them to sources of care or support that a clinical setting may not be equipped to provide (e.g., resources related to social, environmental, or economic determinants of health);
  - personal well-being, resilience and positive coping strategies to support physicians to practice and model what they promote to patients; and
  - advantages and best-practices relating to the effective use of telehealth in advancing alternative models of health care delivery, particularly in light of the ongoing COVID-19 pandemic.

- **Promote the usage of shared medical appointments (i.e. group visits) within clinical settings** to increase access to care, increase efficiency and efficacy and generate measurable improvements in chronic disease management, patient trust, patient perception of quality of care and quality of life and relevant biophysical measurements of clinical parameters. In recent published studies, shared medical appointments (SMAs) have yielded positive results in generating patient engagement, uncovering the patients' underlying concerns and fostering a community of support to help patients create and maintain desirable lifestyle habits to support chronic disease management and/or prevention.[20,21]
- **Maintain and grow residency programs that provide physicians with the opportunity to practice lifestyle medicine in a variety of clinical settings.** Preventive Medicine and Lifestyle Medicine residency programs currently offer students this opportunity. However, as is the case for all residency programs, funding for these positions is limited. Incorporating the practice of lifestyle and preventive medicine into all medical specialties would increase physician competence in these areas. Additionally, this would elevate the importance of teaching lifestyle and preventive medicine contents in UME, as UME is often influenced by the skills needed for physicians to succeed in residency programs.
- **Foster a robust integration of relevant lifestyle medicine contents into graduate medical education across all residencies and specialty training programs.** Primary care physicians have historically borne the brunt of expectation for addressing lifestyle and preventive medicine related concerns. While primary care physicians continue to be critical players in the delivery of preventive and lifestyle medicine, it is also important to support increased understanding among physicians across all medical specialties of

their role and responsibility in integrating lifestyle and preventive medicine measures into their practices as well.

- **Partner with leading employers of the physician workforce to create the shifts in incentives, motivation and enhanced workplace culture required to generate demand for and receptivity of the humanizing of the physician workforce.** Driving change among employers of physicians to humanize the workforce will likely lead to upstream changes in how medical students are prepared to enter the workforce, as well as downstream changes in expectations related to health care delivery and patient interactions.

Recommendations for Influencing Policy

Current State Summary and Rationale

Despite some notable achievements in implementing policies that promote the importance of lifestyle and preventive medicine in practice and education, for example the Affordable Care Act, overall progress in advancing policy agendas that support the integration of lifestyle medicine contents into undergraduate medical education has been slow. Bills such as the ENRICH ACT[22] and the EAT for Health Act[23] of 2017, among others, have been repeatedly introduced in Congress and have failed to pass into legislation.

The influence that federal, state and local policy has on the availability of funding to support GME residency programs, insurance coverage, provider reimbursement, scope of practice, ongoing healthcare reform related to value-based care and issues related to social and health equity makes the policy domain a critical area to address in order to achieve desired outcomes in integrating lifestyle medicine contents into education and practice. In addition to governmental policies, private sector policies implemented in medical schools and in places of employment present opportunities to influence expectations and standards that can reinforce desired changes in emphasis on the tenets of lifestyle and preventive medicine.

Goal for Influencing Policy Change

National, state and local policies — both the public and private sectors — impacting education and training in lifestyle and preventive medicine reflect and advance evidence-based best practices, rather than industry influence.

Pathways to Driving Change

- **Coordinate advocacy initiatives and committees — currently operating independent of one another — across stakeholder groups to create a bipartisan, unified voice representing medical societies, medical schools and students, governmental agencies, public health organizations and other private sector stakeholders.** Creating alignment across these initiatives will provide a broader platform for amplifying joint advocacy agendas and building momentum to drive desired policy change. Convening a policy consortium across ACPM, Harvard Food Law and Policy

Clinic, ACLM, ACSM, the American Council on Education (ACE), AAMC, AMSA and others would create a strong unified voice on the Hill.

- **Identify opportunities to leverage synergies between advocacy initiatives supporting lifestyle and preventive medicine** and other aligned health-related issues, particularly those related to social equity, addressing systemic racism and COVID-19. There also may be opportunities to align lifestyle and preventive medicine with initiative addressing environmental sustainability in food practices and energy use (global warming) causing untoward health effects.
- **Develop a coordinated advocacy agenda to advance the healthcare payment system toward value-based payment models to drive Triple/Quadruple Aim health care outcomes and population health improvement.** Progress in driving reform in the health care payment system from fee-for-service to more value-based care has been consistently stymied by strong incentives within the healthcare system and the general economy to maintain the fee-for-service model.
- **Coordinate the activities of key stakeholders — such as HRSA, ACGME, LCME — to revise the tax provisions of not-for-profit health systems and institution requirements (i.e., Community Benefit) to include accountability for improving the health of the community using standardized measures.** To achieve this outcome physicians with competency in lifestyle and preventive medicine will be needed.

V. Conclusion

COVID-19 and the heightened awareness of systemic racism and health inequity have highlighted gaps in our healthcare system that have existed for decades but are exacerbated by the current situation. The convergence of trends in medical education and the heightened urgency for system-wide transformation in education and the delivery of care prompted by the current public health crisis makes this an opportune time for change. As the health and cost burden placed on our healthcare systems by preventable, NCDs continue to rise, the need for a physician workforce trained to effectively address behavioral, social and environmental determinants of health that form the core contents of lifestyle and preventive medicine is more apparent and critical than ever.

The recommendations outlined in this white paper provide a strategic roadmap for accelerating the integration of lifestyle and preventive medicine contents into UME as a critical milestone toward creating a future workforce better equipped to address the current and emerging health needs of the population. While ACPM, with funding from the Ardmore Institute of Health, spearheaded the development of these recommendations, it is clear that no single organization can be successful in taking the recommended actions. Rather, reaching the desired outcomes set forth will require the concerted and collective efforts of stakeholder groups and organizations at the national, state, educational institution and community levels. Stakeholders across the continuum of medical education and the professional workforce must align around a common cause and shared vision to reverse the trends in preventable NCDs, the high cost of healthcare and poor outcomes.

VI. Acknowledgements

The American College of Preventive Medicine would like to thank the Ardmore Institute of Health for its generous support of this initiative.

About the Ardmore Institute of Health

The Ardmore Institute of Health's (AIH) mission is to improve the health and vitality of people to live more meaningful lives, and to create a world where lifestyle modification is the preferred method to prevent and overcome chronic diseases such as diabetes and obesity. The organization works for a future where lifestyle change will be the preferred method to prevent, treat and reverse chronic diseases such as diabetes and obesity. AIH considers grant funding requests three times a year and gives preference to requests that align with its strategic priorities to:

- measurably increase the well-being of the residents of Ardmore and Carter County, Oklahoma;
- influence the U.S. health system to bring Lifestyle Medicine into the mainstream; and
- improve health behaviors through funding programs that promote purpose, nutrition, movement, community, connectedness and sleep.

The organization has distributed more than $7 million in grants to support its goals since 2014.

About the American College of Preventive Medicine

The American College of Preventive Medicine (ACPM) is a professional, medical society of more than 2,000 physicians dedicated to improving the health and quality of life of individuals, families, communities and populations through disease prevention and health promotion. ACPM's mission is to represent and support preventive medicine physicians in their role as public health and health systems leaders. ACPM provides a dynamic forum for the exchange of knowledge and practice advancement, offering high-quality continuing medical education, resources for ongoing professional development, networking opportunities and advocating for the important role of preventive medicine in our healthcare system.

VII. Methodology

Overview

ACPM received funding from AIH to design a strategic roadmap outlining necessary and actionable steps required to achieve a foundational level of training in undergraduate medical education (UME) on lifestyle interventions, including nutrition, exercise, stress, sleep, tobacco use and other addictive substances.

To inform the development of this roadmap ACPM:

- conducted a literature review of research reports, white papers and peer-reviewed research;

- interviewed key subject experts in the field; and,
- facilitated a full day convening of key stakeholders and subject matter experts.

Literature Review

The qualitative literature review included reports, publications and 17 peer-reviewed articles. These articles were selected to provide historical context and current trends in the inclusion of lifestyle medicine contents in undergraduate medical education. Emphasis was placed on content related broadly to lifestyle medicine as a whole, rather than individual contents of lifestyle medicine (e.g., nutrition, physical activity, stress management).

Key Informant Interview

ACPM conducted pre-convening phone interviews with six subject matter experts and thought leaders in the medical education and lifestyle medicine fields. The purpose of the interviews was to gather qualitative data with regards to historical context, trends, rationale and progress made in transforming medical education to the current needs of physicians, specifically the inclusion of lifestyle medicine contents in undergraduate education. It was also to identify potential challenges in changing UME and bringing the various stakeholders together to inform an ambitious agenda. A list of the informants interviewed Is included below.

Stakeholder Convening

ACPM designed and facilitated full day convening of key stakeholders and subject matter experts to articulate shared goals and generate recommendations to inform the strategic roadmap. Participants included representatives from the continuum of medical education, medical credentialing organizations, medical boards, medical societies, healthcare and policy nonprofits and universities on the leading edge of integrating lifestyle medicine into undergraduate medical education. A complete list of convening participants is included below.

Convening Participants and Contributors

External Stakeholders

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VIII. Endnotes

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