STANDARD 5: EDUCATIONAL RESOURCES AND INFRASTRUCTURE

1. **Evaluate the adequacy and sustainability of and the balance among the various sources of financial support for the medical school. Is there evidence that funding is sufficient for the missions of the medical school, including the conduct of a quality medical education program? Identify any constraints on the institution and its medical education program due to the amount of available funding or the balance among funding sources. (5.1 plus Overview section)**

   The various sources of financial support for the medical school are adequate and sustainable. Total revenue has increased each year except for the slowed growth in FY's 2012 – 2014. Debt and debt services are stable. Revenue is growing at a rate greater than expenses and transfers. Reserves cover negative operating margins but are otherwise allowed to grow through retained interest. Total grants and contracts are directed to grow by $15M FY 2015 – 2017, therefore increasing indirect recovery. Revenue mix has not appreciably changed. The global picture strongly suggests revenue growing more quickly than expenses and stable reserves, and there appears to be no identifiable constraints on the medical education program. (See supporting documentation 5.1SD4)

2. **Evaluate whether the dean, or the individual functioning as chief academic officer, has sufficient financial and personnel resources and appropriate authority for planning, implementing, and evaluating the medical education program. Note if any compromises in these areas have had to be made that can be attributed to insufficient resources. (5.2)**

   The chief academic officer has sufficient financial and personnel resources and appropriate authority for planning, implementing, and evaluating the medical education program. The Dean and the Executive Associate Dean have authority to oversee the financial resources. The Dean reports to the Executive Vice President for Health Affairs and to the Executive Vice President for Academic Affairs, and, in turn, the CBO and CFO of the School of Medicine report to the Dean. The Executive Associate Dean meets with each administrative section to review and plan the budget to include funds related to medical education.

   Departmental Chairs report to the Dean for essentially all issues and to the Executive Associate Dean for Education for issues regarding all elements of education. The Dean, through the Executive Associate Dean, appoints Assistant and Associate Deans who assure planning, implementation and evaluation of the medical education program. There have been no compromises in these areas that can be attributed to insufficient resources.

3. **Comment on whether pressures to generate revenue from tuition, patient care, and/or research are negatively affecting the ability of the faculty to effectively conduct the medical education program. Note if decisions about class size take into account the full spectrum of faculty responsibilities. (5.3 plus Overview section)**

   In order to maximize our ability to achieve our tri-partite mission, several new initiatives have been implemented. Dean Larsen was appointed to significant roles in both the University and the Clinical operation (Emory Healthcare) in part to assure that pressure for clinical revenue would not compromise the educational enterprise.

   While the pressure to generate revenue from tuition, patient care and research could impact the ability of the faculty to effectively conduct the medical education policy there are several safeguards in place to assure that there is no substantial negative impact. Part time salary support for those faculty particularly committed to the educational enterprise (for example society advisors, clerkship directors, module directors) assures that this time is compensated. With regard to research, the SOM has established a bridge funding mechanism ($750,000 annually) that supports faculty between grants that also mitigates the financial conflict between research and teaching. Decisions about class size are made by the Dean and the Executive Associate Dean for Medical Education and Student Affairs. Faculty resources are taken into account when making decisions about class size, so as to avoid diluting or compromising the quality of medical education. The faculty to student ratio remains highly favorable and assists in assuring the availability of teachers and mentors across the entire spectrum of medical education.

   According to the Independent Student Analysis, the quality of instruction by faculty, as well as clinical skills

instruction, in the M1/M2 years were rated highly with 90% and 91% of students satisfied, respectively. Both module directors and lecturers were also felt to be accessible and responsive to feedback at 94% and 91%, respectively.

4. Evaluate the adequacy of the facilities used to support the teaching and research missions of the medical school. How satisfied are students and faculty with education and research space? Is the availability or quality of educational space negatively impacting the ability to implement or change the medical education program as desired? (5.4)

***Teaching*:** Emory University School of Medicine has state of the art teaching facilities that adequately support the education of medical students and provide an active learning experience. The James B. Williams School of Medicine building contains 160,000 square-feet of space and serves as the epicenter for medical education. It houses three large auditoriums, each seating 110-160 students. There are two computer laboratories/computer testing centers that can accommodate up to 72 students. Four seminar rooms with capacity for up to 40 students and 16 small group rooms underscore the curriculum's emphasis on small group discussion. The medical school also houses The Emory Center for Experiential Learning (ExCEL), which consists of eight high-fidelity simulation rooms and four suites simulating an emergency room, operating room, intensive care unit and a labor and delivery room. The Clinical Skills Center in the medical school reflects the curriculum's emphasis on simulated learning and contains 16 state of the art examination rooms. There is a dissection facility in the building that has 26 dissection tables, each equipped with a computer. In addition to dedicated teaching areas in the building, there is a large atrium, spaces for individual or small groups study. Students have 24-hour access to the School of Medicine building with after hour access through a secure card system. (See supportive documentation attachment 5.4a).

***Research*:** The Emory University School of Medicine complex houses state of the art research facilities to support the research mission of the medical school. The Whitehead Biomedical Research Building is an eight floor, 325,00 square foot facility with 150 faculty offices and 150 laboratory modules. The building supports basic science as well as interdisciplinary research programs. The Woodruff Memorial Research Building contains 350,00 square feet of space for clinical laboratory, translational research, laboratory administration and faculty offices for School of Medicine faculty. The Winship Cancer Institute of Emory University is a National Cancer Institute-designated center that contains 284,000 square feet of space bringing state of the art clinical and research facilities together in one location. The Emory Vaccine Research Center is the largest and most comprehensive academic vaccine center in the world. The center underscores Emory's commitment to world leadership in research to control infectious diseases of global importance. The Yerkes National Primate Research Center at Emory University has been conducting basic and translational research for eight decades. The center houses nearly 3,400 nonhuman primates. The Rollins School of Public Health is a nationally recognized leader in public health education and research. The school encompasses two buildings and 300,000 square-foot of space.

Educational Facilities: Since the opening of the School of Medicine Building in 2007, students have expressed a high degree of satisfaction with the educational facilities. Concerning educational facilities at the medical school, nearly every student (99%) reported satisfaction with the large lecture halls and group classroom facilities within the School of Medicine, with the majority being very satisfied. A similar number of students (95%) reported being satisfied with the small group teaching spaces on campus, and most students (96%) were satisfied with the adequacy of laboratory spaces.

***Research Facilities and Opportunities*:** In the Independent Student Analysis, 95% of Emory medical students reported satisfaction with the opportunities to participate in research. Virtually all M4s (99%) reported satisfaction with research opportunities.

The James B. Williams School of Medicine building houses ample educational space to fulfill the needs of the current preclinical medical school curriculum. The increased emphasis in medical education on small group discussions and simulated experiences is well addressed in the medical school building. While the School of Medicine building is in high-demand across the education continuum at Emory University, the MD program retains priority and has not had issues relating to teaching space to deliver the curriculum.

5. Evaluate the adequacy of the resources for the clinical instruction of medical students, including patient numbers and case mix and inpatient and ambulatory teaching sites. Note if the constellation of teaching sites used for required clinical experiences collectively can accommodate the assigned number of learners in each discipline and can meet the objectives for clinical education. Does each site used for required clinical experiences have sufficient and appropriate teaching and study space, information resources, and call rooms (if applicable)? (5.5, 5.6)

The resources for the clinical instruction of medical students, including patient numbers and case mix and inpatient and ambulatory teaching sites are adequate. Medical Students at Emory University School of Medicine are afforded clinical instruction at a wide constellation of primary teaching sites for patient care experiences beginning as early as the M1 year. Specifically, students matriculate through Emory University Hospital (579 beds), Grady Memorial Hospital (953 beds), Emory University Hospital Midtown (511 beds), The Atlanta VA Medical Center (239 beds), and a variety of ambulatory sites throughout metropolitan Atlanta. Teams are structured to accommodate 2 to 3 students on average on medical and surgical inpatients services, balancing supervised instruction with graduated responsibility. Though never exceeding ACGME 16-hour intern work limits, medical students do have overnight patient care assignments. When necessary, students have full access to resident work areas at each aforementioned site including sleep rooms and study space—all of which consider the presence of students during allocation. Assignments are made to specifically balance the number of undergraduate learners with the availability of supervising faculty, resident physicians, work and call rooms, case mixes, and patients at each given site. In the ambulatory settings, with a few exceptions, teaching experiences focus on one student per location during a given time. Sites with more faculty and higher volumes can have up to three medical student learners during a clerkship. All sites utilize electronic medical records and have high-speed Internet access, to which all rotating learners have the opportunities to access.

6. Comment on the adequacy of security systems on campus (including at distributed campuses) and at clinical teaching sites and on institutional policies and procedures to ensure student safety. Has the institution engaged in appropriate and comprehensive emergency and disaster planning? (5.7)

Emory University strives to provide a safe and secure environment for students though systems in place at the main campus and clinical teaching facilities.

Emory Main Campus: Emory University maintains its own police department that manages law enforcement, fire safety and emergency medical services. It provides complete law enforcement services for the Emory main campus, Oxford campus and Emory Midtown campus. The Emory campus has emergency "blue light" phones located throughout and links callers directly to the police department in order to report emergencies and request security escorts. The School of Medicine building provides a 24-hour study space for medical students with a security guard on duty after regular building hours. The School of Medicine building is card-access only after hours and limited to registered School of Medicine students.

Clinical Teaching Facilities:
The Emory University affiliated hospitals (Emory University Hospital and Emory University Midtown Hospital) have public safety departments with officers on duty twenty-four hours each day. Uniform patrol provides day-to-day visible coverage and enforcement of local, state, and federal laws on these campuses. The Midtown campus is located within the City of Atlanta, the Emory Police and the Emory Healthcare Public Safety Staff work closely with the Atlanta Police Department. Students are encouraged to notify the public safety department concerning any activity that may compromise the safety of students, physicians, hospital employees, patients, and visitors.

Grady Memorial Hospital maintains a Public Safety Department that employs in-house uniform and plain-clothes security personnel to provide on-site security services. Security personnel patrol the hospital, medical library, and the outside perimeter of the facility at regular intervals. The Public Safety Department has a designated officer to patrol the Emory Faculty Office Building, Glenn Building, Steiner Building, and the Woodruff Extension Building, the four buildings Emory students, faculty, housestaff, and employees generally occupy. All entrances, stairwell doors and

elevators in each of these four buildings are further equipped with card-access systems. Security cameras and monitoring systems are housed within all four buildings. Within and around the hospital are 480 cameras, including monitored cameras, that cover the key outside areas of Grady hospital. Numerous units/areas throughout the hospital that are equipped with access card limited entrance. Escorts to vehicles are available 24 hours/day. Students and others are encouraged to notify the public safety department concerning any activity that may compromise the safety of students, physicians, hospital employees, patients, and visitors.

The Atlanta Veterans Administration Medical Campus is under the patrol of the VA police as well as the local police. Over 100 cameras monitor the inside and outside of the facility. These cameras are monitored 24/7/365 by a police dispatcher and are digitally recorded. VA police provide escorts to vehicles after hours and there are 20 emergency call boxes located throughout the campus and parking decks that are monitored by the police dispatcher.

Institutional Policies and Procedures: Emory University's commitment to safety is reflected in the emergency response and emergency notification system. Upon notice of an emergency situation, an Emory Police Officer will be dispatched to the scene to assess the situation. In the event of a confirmed emergency or dangerous situation, Emory will without delay, activate various components of the University emergency notification system including email, text-messaging, RSS feed to Emory webpages, television banners on Emory operated cable TV, an outdoor siren/loudspeaker system, and social media sites.

Emory University has in place an Emergency Operations Plan in association with the office of Critical Event Preparedness and Response (CEPAR). The Emergency Operations Plan is designed to effectively coordinate resources to protect life and campus facilities following a major incident, including severe weather, fire and explosions, hazardous material, extended power outages and law enforcement emergencies. The emergency plan clearly defines the emergency management command structure as well as responsibilities for each position within the structures. (See 5.7:SD-1). A guide to emergencies is posted in physical and website-based forms (See 5.7:SD-1).

7. Evaluate the adequacy of library and information technology resources and staff support. Do staff in these units have appropriate expertise and are they responsive to the needs of students, faculty, and others in the medical education community? If these units serve other schools and colleges, do medical students and faculty have sufficient access? (5.8, 5.9)

The library and information technology resources and staff support are substantial. The Woodruff Health Sciences Center Library (WHSC L) plays an important role in medical education, providing expert instruction and support to students, faculty, and staff. The Medical Education and Technologies Informationist (METI) has office hours in the Emory School of Medicine Building to serve as a conduit between the library and EUSOM/EUSOM IT to ensure better communication about resources, access, and services. In addition, the METI also coordinates with the WHSC L Clinical Informationists to teach clinical informatics skills, behaviors, and lifelong learning skills to EUSOM students and residents, and contribute to the professional development of teaching faculty. When surveyed, students' overall satisfaction rating with the library and services was over 95%, compared to the national average of a little over 85%.

Outside of the EUSOM and Academic Health programs, the WHSC Library also serves the Schools of Nursing, and Public Health; Graduate Division of Biological & Biomedical Sciences; Yerkes National Primate Research Center; and Emory Healthcare and its divisions. In addition to the METI and Clinical Informationists, the WHSC L staffs Informationists with concentrations in Life Sciences, Nursing, Public Health, and Research to support the Health Sciences Center and its programs. Clinical Informationists staff the 3 branch libraries (EUH, EUHM and Grady) to assist our faculty and students. Clinical Informationists at the branch locations help facilitate access to information resources in a variety of formats.

As a part of the Emory University Libraries, the WHSC L provides access to: 775+ databases, 40,000+ unique ejournal titles, and 20,000+ e-books. In addition, the WHSC L and its branches provide wi-fi access throughout and have 116 public workstations available, both Macs and PCs.

Information and educational technology resources support the needs of the medical program. EUSOM utilizes Emory academic and healthcare networks to provide information services for research and education. Through participation in technology initiatives and groups, access is available to biomedical tools, research projects, and researchers. Emory University's centralized information technology department provides key services across the entire campus including support of the learning management system, email, web hosting, and information security services.

Additional support staff (20%) and expertise have been added over the last four years to address varied technical challenges in medical education ranging from wireless access and mobile device access to new applications supporting medical education. These staff members are funded and dedicated to the medical education mission of EUSOM.

Accessibility of computer support is highly praised at Emory, with 97% of students expressing satisfaction. Additionally, students were very satisfied with the Emory Med Portal website (95% satisfied).

However, students were less satisfied with OASIS (curriculum management system), where 74% of students were satisfied with the new program with notable variation between class years. Students were also less satisfied with the Discovery research phase of the curriculum course website (72%) due to perceived difficulty of use at certain stages of Discovery.

The School of Medicine Building houses two large 30-station computer labs and a 20 laptop computer "mobile classroom" that can be deployed anywhere in the facility. Wireless access to all EUSOM resources and Internet is also available. The building has over 50 rooms updated with digital audio-visual infrastructure with video teleconferencing capabilities in the large auditoriums and classrooms. On the Emory University campus, the WHSC library is a short walk from the School of Medicine building. There are also easily accessible branch libraries on-site at Grady Memorial Hospital, Emory University Hospital- Midtown, and Emory University Hospital. Children's Healthcare of Atlanta–Egleston and the Atlanta Veterans Administration Medical Center also have medical libraries.

8. Evaluate the adequacy of processes in place to ensure that the resources, such as faculty, educational space, clinical placements, used to accommodate visiting and transfer students do not diminish the resources for already-enrolled medical students. (5.10)

Emory University School of Medicine has policies in place to assure that educational resources are not compromised for Emory medical students while accommodating visiting medical students. Potential visiting students must request and receive written documentation from Emory University and specific departments prior to a visiting student rotation. There are limits on numbers of visiting students that are set by departments and specific clinical rotations based on facilities, number of faculty and number of Emory medical students. These limits are specifically designed to provide an optimal educational experience without compromise to Emory medical student learning. Emory medical students have priority over visiting students in the performance of clinical procedures and in utilizing educational space. With the introduction of the current curriculum and its "non-traditional" sequence of didactics and clinical rotations, transfer students are rare and there have been no issues regarding compromise of Emory medical student education and transfer students.

9. Evaluate the adequacy and quality of student study space, lounge and relaxation areas, and secure storage space at all locations. If students participate in overnight call at any location, comment on the security, accessibility, and availability of call rooms. (5.11)

The James B. Williams School of Medicine building was designed with extensive space dedicated for student study and relaxation. In addition to dedicated teaching areas in the building, there is a large atrium, multiple spaces for individual or small group study as well as relaxation areas/lounges to encourage informal interaction among students. A kitchen space, equipped with microwave ovens and refrigerators, is housed in the building. The medical school

also has showers, lockers, indoor parking for bicycles. Students have 24-hour access to the School of Medicine building. At clinical sites, students have full access to resident work areas, study space and sleep/call rooms. In a 2014-2015 independent student analysis conducted by the medical school, 90% of students expressed satisfaction with the relaxation spaces and 81% were satisfied with study spaces. M1 and M2 students are assigned personal lockers for secure storage at the School of Medicine. Overall, 85% of students were satisfied with storage facilities at the School of Medicine and at clinical sites.

A discrepancy existed between preclinical and clinical students as 99% of M1s and 95% of M2s were satisfied compared to 66% of M3s and 78% of M4s. The discrepancy has been attributed to varying space for secure storage at clinical sites utilized by M3 and M4 students. In the current curriculum, overnight call is limited to rotations at Grady Memorial Hospital. Call rooms are available for students on overnight call. The call room floor has card-access entry and call rooms have provided a secure environment for students.

10. Note whether the medical school has provided the LCME with the expected notifications prior to the identified changes taking place. (5.12)

Question 10 is N/A – there have been no substantial changes.