NEOMED | COLLEGE of MEDICINE

Curriculum Management Charter for the MD Program

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Preamble

This document explains and operationalizes the undefined terms and concepts found in accreditation standards, differentiates the relative duties of key entities involved in curriculum governance, outlines a quality assurance framework for central curriculum management, and establishes core principles that may be used to ensure that curriculum management decisions are high quality, goal-oriented, and consistent. The definitions, processes, and frameworks described in this document are intended to illuminate and clarify the often ambiguous aspects of curriculum management. This document has been adapted with permission from the University of Oklahoma School of Medicine.

Introduction

The NEOMED MD curriculum is supported by numerous individuals who collaboratively plan, deliver, and evaluate a broad array of educational experiences to hundreds of students across dozens of teaching sites. The school relies on an effective curriculum oversight and management system to ensure that the educational program meets stated goals and is continually improved, refined, and enhanced. As the accrediting authority for U.S. medical schools, the Liaison Committee on Medical Education (LCME)[i] defines the expectation for central management of the curriculum as follows:

> *A medical school has in place an institutional body (e.g., a faculty committee) that oversees the medical education program as a whole and has responsibility for the overall design, management, integration, evaluation, and enhancement of a coherent and coordinated medical curriculum.*

The LCME defines a "coherent and coordinated medical curriculum" as:

> *The design of a complete medical education program, including its content and modes of presentation, to achieve its overall educational objectives. Coherence and coordination include the following characteristics: 1) the logical sequencing of curricular segments, 2) coordinated and integrated content within and across academic periods of study (i.e., horizontal and vertical integration), and 3) methods of instruction and student assessment appropriate to the achievement of the program's educational objectives (standard 8.1).*

Notes: Key terms are defined in the glossary

> *Unless otherwise indicated, courses and clerkships will be referred to generically as "courses." The term is understood to apply to required units of instruction that may be referred to as modules (required units of instruction offered during the M1 and M2 years), clerkships (required units of instruction offered in a patient care setting during the M3 and M4 years), or courses (required units of instruction offered during the M3 and/or M4 year).*

Definition of Centralized Curriculum Management

Put simply, centralized curriculum management entails the following activities:

1. Understanding each domain of curriculum oversight that requires management
2. Creating structures, functions, and rules that operationalize that understanding for each domain
3. Surveying educational program implementation and outcomes to ensure that the requirements for each domain are being carried out
4. Making corrective actions when necessary

The LCME indicates that curriculum committees may manage the curriculum through a variety of actions such *as leading, directing, coordinating, controlling, planning, evaluating,* and *reporting* (LCME Element 8.1 and LCME Data Collection Instrument Glossary of Terms).[ii] The use of verbs such as *leading*, *directing*, and *controlling* imply that the LCME expects a medical school's curriculum committee to be an active body with sufficient central authority to plan, develop, and deliver a coherent and coordinated curriculum.

The College of Medicine believes that effective curriculum management employs democratic decision-making (consensus rather than unanimity), is purposeful and data-driven, and is based on sound, agreed-upon principles.

Domains of Central Curriculum Management

The targets of curriculum management include the structures and functions required to plan, deliver, and evaluate the MD program. Many of these elements are described in LCME standard 8.3 which indicates that the faculty, (acting through curriculum committees) are responsible for:

> *… the detailed development, design, and implementation of all components of the medical education program, including the medical education program objectives, the learning objectives for each required curricular segment, instructional and assessment methods appropriate for the achievement of those objectives, content and content sequencing, ongoing review and updating of content, and evaluation of course, clerkship, and teacher quality.*

The curriculum structures and functions may be logically grouped into six discreet dimensions or "domains" that require central management: **Goals**, **Content**, **Design**, **Delivery**, **Evaluation**, and **Compliance**. These domains are defined in Figure 1.

Six Domains that Require Management:

Figure 1. Domains of Curriculum Management

Virtually every aspect of the curriculum that requires management may be categorized within one of these six domains. While many of these domain categories are intuitive, others may require explanation. For example, the **Design** domain is primarily concerned with the selection (i.e., presence/absence), sequencing, timing of the appropriate components (e.g., courses/disciplines/classroom activities) and the way that these components interact with one another to meet curriculum goals and promote integration and reinforcement. In contrast, the **Content** domain is primarily concerned with the extent to which the content is appropriate, aligned (with objectives and delivery methods) and free from unwanted gaps and redundancies. Furthermore, while the **Content** domain concerns the selection of the right material, the **Design** domain concerns those structures that help students learn the material.

The **Delivery** domain includes the methods used to teach and assess student achievement of the stated learning objectives. The **Evaluation** domain is focused on ensuring that evaluation practices (e.g., course evaluations) are effectively used to improve the quality and effectiveness of the component under evaluation.

One important advantage of this approach is that the same terminology may be used at several conceptual levels across the curriculum. For instance, one may consider the **Goals** or **Design** at the level of the curriculum as a whole, the segment (e.g., the clerkship year), the course, or the session. In this way, the domains serve as a universally applicable vocabulary that faculty may use as they manage the curriculum.

Finally, domains should not be confused with educational program goals. Domains are dimensions of curriculum management whereas educational program goals are statements of desired aims for the educational program. As such, domains are not associated with outcomes (whereas goals are assigned one or more outcomes as described below).

Goals

Educational Program Goals

A broader view of success (i.e., of the entire program, not just the curriculum) may be measured through *educational program goals*, broad yet measurable statements of what the undergraduate medical education program intends to accomplish. Notably, educational program goals are not restatements of competencies already conveyed by the educational program objectives.

College of Medicine educational program goals could include the following:

1. Accept learners with the characteristics to successfully complete the program, and assist those students that struggle.
2. Deliver a program that results in a competent graduate.
3. Provide a learning environment that embodies the ideals of the teacher-learner relationship and strives for satisfaction of both.
4. Help learners successfully choose and prepare for the next phase of their training.

Educational Program Objectives

Educational program objectives (EPOs) are measurable competency-based statements that define the knowledge, skills, behaviors, and attitudes that a medical student is expected to achieve by graduation. They guide the planning, delivery, and evaluation of the College of Medicine's medical education program. The curriculum committees use the EPOs as an organizing framework to i) select and place course objectives, ii) select appropriate course delivery methods, and iii) evaluate the success of the program.

Evaluating Success

The NEOMED College of Medicine Curriculum Committee measures the extent to which the program achieves its educational program goals through “actionable evaluation.” Actionable evaluation processes are purposefully designed evaluation systems designed to guide actions intended to improve curriculum structures and functions.

Because the educational program goals are broadly-phrased statements that are attained through the collective efforts of many individuals, activities, and complex systems, decision makers must do more than review global outcomes (e.g., USMLE results) if they wish to understand the factors that influenced success and take action on program factors to influence this outcome. For instance, one cannot exclusively review USMLE Step I (an outcome) to understand if the curriculum (including the many complex dimensions of its execution) is successful. Accreditation authorities (including the LCME) and educational researchers have long recognized the value of evaluating the quality of execution (e.g., instructor and course evaluations) in addition to educational outcomes.

To more completely determine if and how an educational program has achieved its stated goals one may assess a logically connected chain of measures that reveal both the quality of execution and the extent to which the execution resulted in a favorable change. Used by many educational institutions and non-profit organizations, a “logic model” is a program evaluation framework that consists of "if-then" causal relationships between the elements of the program that measure execution (i.e., activities and outputs) and change (i.e., outcomes and impact). This type of “actionable evaluation” provides decision makers with targeted insight into what is and isn’t working.

Table 1 depicts a sample logic model for the MD program organized around the educational program goals. Put simply, the Logic Model is a potential tool to help the College determine whether, why, and how the educational program has achieved success. Evaluating success for each output, outcome, and impact measure can be made based on standards of excellence developed and used by the curriculum committee to make decisions regarding conformance and/or quality. Notably, this logic model is provided as an example only at this time.

Table 1. Sample Logic Model Framework for Educational Program Evaluation

	Measures of Execution		Measures of Change	
Program Goals	Activities The instructional & management initiatives employed to achieve the goal	Outputs The proximal & direct measures of activity effectiveness	Outcomes The global, indirect measures of active effectiveness & partial evidence of good achievement	Impacts The ultimate evidence of goal achievement
1. Accept learners with the characteristics to successfully complete the program and assist those students that struggle.	• Behavioral interviewing process • Academic advising program	• % students failing courses • % students repeating year • % students on LOA • % at-risk student failures	• % Withdraws & Dismissals by year • % Successful remediation	• Four Year graduation rate • Overall graduation rate
2. Deliver a program that results in a competent graduate.	• Establish core principles • Use EPOs to select and sequence content • Approve course objectives (Cos) and EPO-CO mapping • Gaps & Redundancies Review • Integration initiatives • Alignment initiatives • Workshops on high quality instruction • Observation and feedback	• Student performance on course/NBME exams • EPO-course objectives mapping report • Course & instructor quality ratings/reports • Unwanted gaps & redundancies report • Segment integration and thread reports	• Student performance on USMLE • Data on student achievement of EPOs	• Program director ratings of NEOMED graduate quality
3. Provide a learning environment that embodies the ideals of the teacher-learner relationship and strives for satisfaction for both.	• Residents as Teachers program • Periodic evaluation of the learning environment	• Residents as Teachers program evaluation • Y2Q & GQ mistreatment ratings • Duty hours data	• Learning environment survey results	• Y2Q & GQ overall satisfaction ratings • Faculty satisfaction ratings
4. Help learners successfully choose and prepare for the next phase of their training	• Career advising program	• NRMP results • Program director ratings of NEOMED graduate quality (selected items)	• GQ career advising and elective guidance ratings	• SOAP Outcomes

Curriculum Management Participants

Role of the NEOMED Curriculum Committee and its Subcommittees

In accordance with LCME standards, the College of Medicine bylaws stipulate the final authority of the curriculum committee responsible for "for the overall design, management, and evaluation of a coherent and coordinated curriculum." Consistent with the academic ideal of shared governance, the NEOMED College of Medicine Curriculum Committee (CC) will consist of faculty elected by its subcommittees, faculty identified by the NEOMED Nominations Committee, and medical students elected by their peers. The CC will have three subcommittees: a Pre-clerkship Curriculum Subcommittee (PCS), a Clinical Curriculum Subcommittee (CCS), and a Curriculum Evaluation Subcommittee (CES). The voting members of the CC will be PCS and CCS faculty elected from among their respective memberships, and students elected by their peers. The voting members of the PCS and CCS will be course and clerkship directors, and students elected by their peers. Members of the CES will be faculty elected by the PCS and CCS from among their respective members, and faculty identified by the CC.

The CC is responsible for evaluating and managing the curriculum as a whole and for approval and oversight of a Curriculum Evaluation Plan that defines the evaluation processes to be used to evaluate all components of the curriculum. The CC must approve changes to the curriculum and educational program policies. As they are subordinate to the CC, the subcommittees are responsible for the design, implementation, and management of the preclinical and clinical portions of the curriculum, respectively. The CES is responsible for evaluating courses clerkships and submitting recommendations to the CC. The curriculum management structure is portrayed in Figure 2.

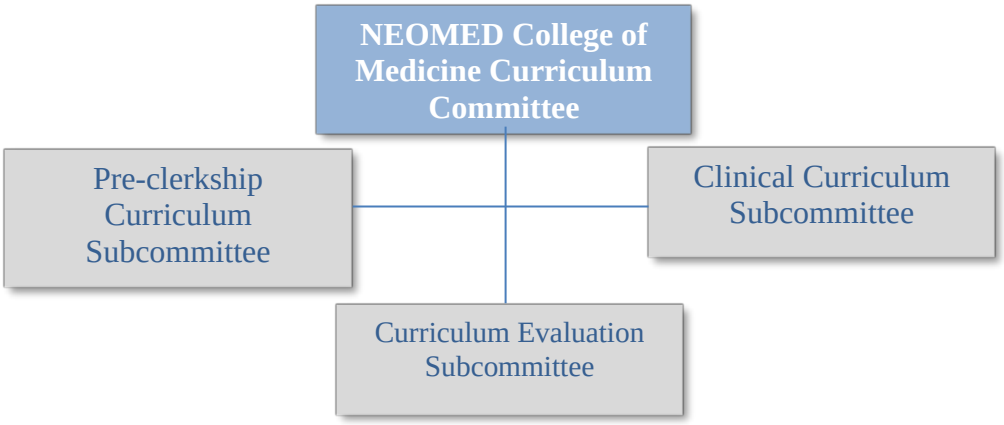

Figure 2. The Curriculum Committee and its Subcommittees

The curriculum committee and its subcommittees may divide ongoing work into teams (e.g., *Goals Team*, *Delivery Team*, C*ontent Team*, etc.) or commission an *ad hoc* working group to explore a particular issue in depth.

CC approval is required for revisions or changes to any of the following:

- Educational Program Objectives
- Medical student promotion and/or graduation standards or requirements
- Curriculum Design and Delivery Plan
- Curriculum Evaluation Plan
- Curriculum changes that involve multiple courses or clerkships
- Overall program duration
- Educational program policies
- Appointment of new course/clerkship directors and renewals of appointments
- Major changes to courses or clerkships:
    - Changes to the course/clerkship prerequisites
    - Changes to course/clerkship objectives (i.e., any change from the course/clerkship objectives previously assigned and/or approved by the CC)
    - Changes to course/clerkship content (unless the change is consistent with course/clerkship objectives previously assigned and/or approved by the CC)
    - Changes to instructional/assessment methods (unless previously approved by the CC through the Design and Delivery Plan).
    - Changes to the course grading system
    - Changes to the course duration
    - Changes to the required clinical experiences
    - Any change that impacts course or clerkship comparability
    - Any change that impacts or affects another course or clerkship

Role of the Course and Clerkship Directors

As faculty that serve in important educational leadership roles, course directors and clerkship directors (clinical experiential directors) are responsible for working with the curriculum committee and its subcommittees to ensure that courses and clerkships address assigned EPOs (and corresponding content) in accordance with guidelines established by the CC. The relative duties of course directors and curriculum committees are outlined in Table 2.

Table 2. Relative Duties of Course Directors and Curriculum Committees

	Goals	Content	Design	Delivery	Evaluation	Compliance
Curriculum Committees	Establish & Assigns EPOs to courses	Establish Content Through EPO Narratives and Blueprint	Establish Design Guidelines	Establish Delivery Guidelines	Establish Evaluation Processes Develop & Implement Curriculum Evaluation Plan	Establish Compliance Evaluation Processes Implement Compliance Evaluation
Course Directors	Develop course objectives for assigned EPOs using templates	Implement content based on assigned EPOs	Design course compliant with CC design guidelines	Select instructors Implement a course delivery strategy compliant with CC guidelines	Revise courses based on evaluation results	Comply with external requirements

Organization and Processes

Activities

As described above, the essential *activities* of curriculum management include the following:

1. Establishing a vision for each domain that requires management
2. Creating structures, functions, and rules that operationalize that vision
3. Surveying implementation and outcomes to ensure that the vision is being carried out
4. Making corrective actions when necessary

The LCME expands this list somewhat by suggesting that central curriculum management consists of *leading, directing, coordinating, controlling, planning, evaluating,* and *reporting* activities. While the LCME does not provide a definition for these generic management activities, they may each be defined and operationalized into central curriculum management activities and assigned to appropriate curriculum committees as described in Table 3.

Table 3. Central Curriculum Management Activities

Management Activity *(Entity)*	**Operationalized as a Curriculum Management Activity** *(Example)*
Leading (*CC*)	Establishing a shared vision for educational program goals, educational program objectives, or general strategic direction for the program. *Example: The CC establishes a new EPO regarding professionalism.*
Planning *(CC, PCS/CCS)*	Exploring, discussing, developing and refining operational structures and functions of the curriculum. For example, *planning* might entail the creation of a shared vision for issues within the domains (e.g. content, design, delivery, etc). *Example: Based on the new EPO the CC develops a new professionalism curriculum (i.e., Curriculum Thread) with a common set of professionalism course objectives.*
Directing *(CC, PCS/CCS*)*	Executing and communicating new and revised curriculum structures and functions. Course directors that are unable to comply may appeal the directive (see *controlling* below). *Example: The CC implements a new core principle and directs all applicable courses that address professionalism to draw from a common set of professionalism course objectives.*
Coordinating *(CC, PCS/CCS*)*	A *directing* activity that targets two or more curriculum courses in the service of a common purpose. *Example: The PCS discovers an opportunity for two preclinical courses to reduce six hours of diabetes instruction into four hours and directs both courses to coordinate content to achieve this goal. This Directing activity is subject to CC approval.*

Reporting *(Any)*	Compiling and sharing curated data obtained from prospective monitoring of selected processes and results. *Example: The PCS periodically monitors courses to ensure that they are, if applicable, using course objectives that draw from a common set of professionalism course objectives.*
Evaluating** *(Any)*	Analyzing data to make informed decisions regarding the effectiveness and/or conformance of curriculum structures and functions. *Example: Using available reports, the PCS makes judgements regarding course compliance with the Core Principle regarding professionalism.*
Controlling *(CC)*	Ensuring conformance with educational program goals or curriculum structures and functions by verifying that significant nonconformance exists and is successfully addressed through one of the following mechanisms: a correctional *directing* activity, a *planning* activity (in which the Core Principle is revisited) or granting an exception. This function is also used when a course director wishes to appeal a *directing* activity. *Example: The PCS discovers that a course is using a non-standard professionalism course objective and issues a directing recommendation to the course director (subject to CC approval) to use one of the objectives from the common set. The course director may appeal the directive to the CC. After verifying the nonconformance and providing the course director with a chance to respond, the CC may issue an exception, make revisions to the Core Principle, or direct the course to follow the PCS directive.*

**While Directing and Coordinating is a responsibility of the CC, the PCS and CCS may develop Directing and Coordinating recommendations for CC consideration. In other cases, the CC may formally delegate a Directing/Coordinating activity to the PCS/CCS (however, this is still subject to CC review). Consistent with LCME expectations regarding CC authority, only the CC may independently execute a Directing or Coordinating activity.*

***This should not be confused with previously discussed Domain of Evaluation. The "evaluating" management activity is a focused activity that takes place any time a curriculum committee makes an informed decision about a particular issue. In contrast, the domain of Evaluation is a high-level collection of tasks in which the curriculum committees ensure that evaluation practices are effectively used across the entire program.*

Many of the curriculum management activities may result in a discrete curriculum committee action. For instance, the PCS may conduct a *planning* activity that results in a recommendation to form a new working group. Or, the CCS may *evaluate* a clerkship's compliance with a core principle and issue a recommendation to the CC that the clerkship is not in compliance.

Framework

In standard 8.3 the LCME requires that schools employ an ongoing quality improvement process to manage the educational program such that

> *…education program objectives, learning objectives, content, and instructional and assessment methods are subject to ongoing monitoring, review, and revision by the faculty to ensure that the curriculum functions effectively as a whole to achieve medical education program objectives.*

The process of ongoing "monitoring, review, and revision" to achieve stated objectives is the basis of any quality assurance management process. In the medical education context, quality assurance may be

considered the systematic review and revision of curriculum structures and functions to ensure that the educational program effectively achieves stated objectives and conforms to shared core principles. As such, the above curriculum management activities in Table 2 may be sequentially organized into a systematic quality assurance curriculum management framework such as that found in Figure 3.

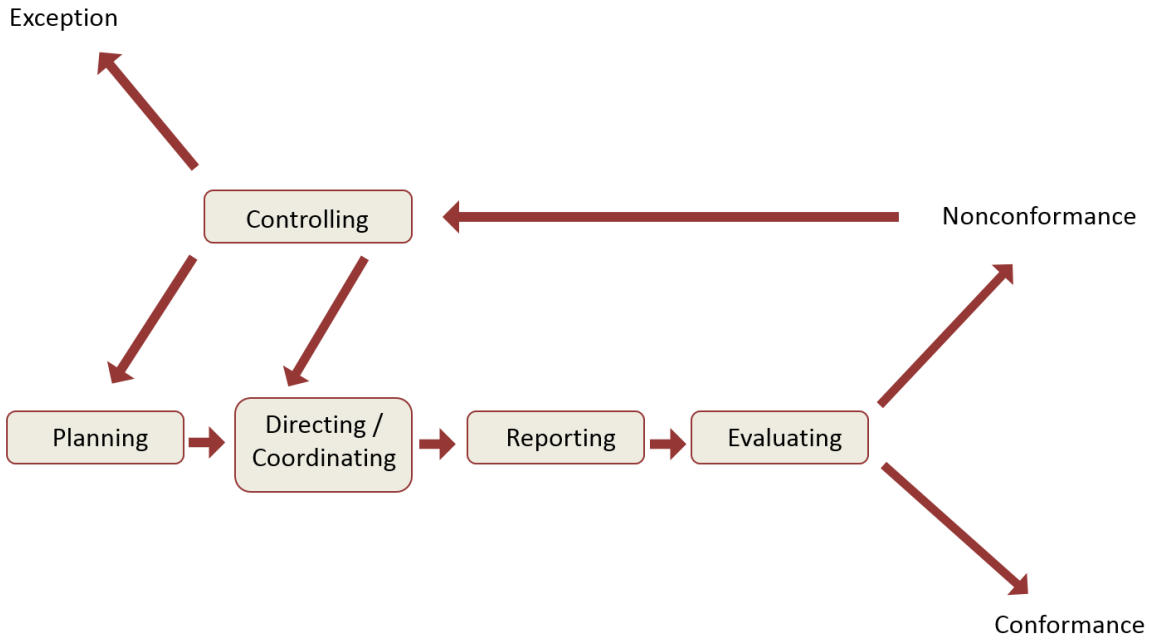

Figure 3. Quality Assurance Curriculum Management Framework

As noted above, each of the management activities in Table 2 is not exercised by each curriculum committee. The CC, the PCS/CCS, and the CES would each perform a different subset of these activities as indicated in Figure 4.

Decision-Making Authority by Committee

	CES (courses)	PCS/CCS (segments)		CC (curriculum)
Leading	☐	☐		☑
Controlling	☐	☐		☑
Planning	☐	☑		☑
Directing	☐	☑	*	☑
Coordinating	☐	☑	*	☑
Reporting	☑	☑		☑
Evaluating	☑	☑		☑

Figure 4. Curriculum Management Activities Performed by Each Curriculum Committee

**PCS and CCS Directing and Coordinating activities must be recommended to CC for approval unless the CC has formally delegated authority for the PCS/CCS to manage a designated function (however, even these decisions are subject to CC review and approval).*

Figure 4 indicates the decision-making authority granted to each curriculum committee to manage the various components of the curriculum (e.g., courses vs. segments vs. entire curriculum). For example, the PCS/CCS engages in *planning, directing, coordinating, reporting*, and *evaluating* activities for segments whereas the CES is limited to *reporting* and *evaluating* on courses. Appendix 1 provides several specific examples that illuminate the distinct duties and scope of each committee.

Many curriculum management activities will involve "ensuring" compliance of a particular function. In this context, "ensure" refers to both a duty and associated series of actions conducted by the CC, PCS, or CCS using the above curriculum management activities and framework.

Principle-Based Decision Making

While the framework outlined in Figure 3 provides a generic process for managing the curriculum, it does not address decision-making for specific issues. A set of shared standards is required to ensure that the curriculum committees issue decisions that are high quality, goal-oriented, and consistent. The CC has adopted principle-based standards for such a purpose. Such *Core Principles* form the philosophical basis for the many curriculum committee management activities and decisions.

Many aspects of the educational program (e.g., depth of content, use of assessment methods) are centrally managed by the CC through management tasks associated with Core Principles that have been endorsed by the CC.

A core principle is a broadly applicable mandate that i) is based on evidence, best practices, consensus, or an externally imposed requirement, and ii) is intended to promote student success and/or overall quality of the educational program. It is expected that all components of the curriculum will adhere to core principles unless an exception is granted by the CC.

While educational program goals convey the desired outcomes of the MD program and the educational program objectives define the competencies that learners will acquire by graduation, core principles define specific rules for how the curriculum is to be planned, delivered, and evaluated. Put differently, the core principles describe the approach that NEOMED uses to achieve the stated goals and objectives.

Two example core principles (one for the Goals domain and one for the Content domain) and associated management tasks might include the following:

GOALS	**Core principle:** Course objectives are logically mapped to educational program objectives.	**Management Task:** The CC periodically *evaluates* educational program mappings to each course objective and *controls* any linkage that is incomplete, missing, or specious.

CONTENT	**Core principle:** Course session content is accurate, contemporary, appropriate for the target audience, and aligned with session objectives and assessment items.	**Management Task:** The CES *evaluates* course content every three years and issues content recommendations to the CC

Judging the extent to which the many curriculum structures and functions conform to applicable core principles represents an *evaluation* activity (see Figure 3). Likewise, judging the extent to which an output, outcome, or impact conforms with NEOMED performance standards represents an *evaluation* activity. However, taking steps to address nonconformance represents a *controlling* activity.

Only the CC has the authority to approve and implement a core principle. However, the PCS and/or CCS may recommend a new or revised core principle to the CC. The rules for establishing core principles are listed in Appendix 2. The core principles are listed in Appendix 3.

Committee Deliberations

As a subcommittee, the PCS, CCS, or CES may submit recommendations to the CC. The CC may accept or reject the recommendation. Routine subcommittee matters may be addressed through an CC consent agenda.

Any recommendation to create or revise the curriculum (or components of the curriculum) or educational policies may be submitted to the CC by the PCS, CCS, or CES. The CC may also initiate a curriculum or policy change without subcommittee review. The CC will review the subcommittee recommendation and may accept, revise, reject, or remand the recommendation back to the subcommittee for further work.

Consensus Building and Voting

The meeting chair may elect to call for an unofficial straw poll vote at any time to gauge committee member opinion on a particular issue. Other parliamentary procedures apply.

The chair may request a formal roll call vote of present voting members to determine an accurate vote count.

Documenting and Communicating Decisions

The CC and its standing subcommittees keep an ongoing record of committee meeting deliberations through committee meeting minutes. The curriculum committees use a standardized report (see Appendix 4) form to communicate information and generate recommendations.

Glossary

Actionable evaluation – evaluation processes designed to guide actions intended to improve curriculum structures and functions.

Alignment – a desirable quality of a coherent and coordinated curriculum wherein content taught and assessed by a curriculum component is aligned with objectives and delivery methods. Alignment is primarily managed at the course level.

Assessment – the act of measuring or judging student performance.

Blueprint – a comprehensive planning document, organized by the educational program objectives, that identifies where in the curriculum specific knowledge, skills, and behaviors are addressed.

Coherent and coordinated curriculum – in an idealized state, a curriculum that is optimally aligned and integrated.

Comparability – includes comparable educational experiences and equivalent methods of assessment across all locations within a given course to ensure that all learners achieve the same medical objectives and that the same learner performance will result in the same learner outcome regardless of location. For any given course comparability includes course objectives, required clinical conditions/procedures, assessments, and the grading system.

Competent graduate – a learner that has fulfilled all educational program requirements and achieved all Educational Program Objectives.

Core principle – a broadly applicable mandate designed to promote student success and/or overall quality of the educational program.

Course objective – brief statements (written in specific, observable, and measurable terms) that describe what students will be expected to learn or do by the end of the course.

Curriculum – the plan of study designed to ensure that students achieve the educational program objectives established for the MD program. The curriculum includes both form (curriculum components) and substance (knowledge, skills, and behaviors that must be learned) dimensions.

Curriculum committees – The NEOMED Curriculum Committee and its subcommittees (the Pre-Clerkship Subcommittee, the Clinical Curriculum Subcommittee, and the Curriculum Evaluation Subcommittee).

Curriculum component – a generic term that refers to any portion of the curriculum including curriculum segments, courses, elements of courses (e.g., sessions), or other distinct curriculum experiences.

Curriculum management activity – the activities regularly performed by curriculum committees to manage the curriculum. Management activities include leading, directing, coordinating, controlling, planning, evaluating, and reporting.

Curriculum segment – the two-year preclinical or two-year clinical segment of the curriculum.

Curriculum structures and functions – the curriculum (including curricular components), the resources required to plan, deliver, and evaluate the curriculum, and the array of rules that govern the curriculum. This includes but is not limited to core principles, policies, procedures, programs, instructors, courses, segments, and curricular components.

Curriculum thread – concepts and skills for which the CC has developed a common curriculum (which may include course and/or session objectives, content, assessment items) that applies to multiple courses. (e.g., professionalism).

Domain of curriculum management – logical groupings of curriculum structure and functions centrally managed by the curriculum committees. The domains include goals, content, design, delivery, evaluation, & compliance.

Educational program – a broad term that encompasses structures and functions related to the curriculum, student affairs, admissions, the office of medical education and other areas that support the undergraduate medical education program.

Educational program goals – broad but measurable statements of what the undergraduate medical education program should accomplish.

Educational program objectives –measurable competency-based statements that define the knowledge, skills, behaviors, and attitudes that a medical student is expected to achieve by graduation. EPOs guide the planning, delivery, and evaluation of the College of Medicine undergraduate medical education program.

Ensure – a duty and associated series of actions conducted by the CC, PCS, or CCS (using the curriculum management activities) that assures conformance with Core Principles or other requirements.

Integration – A desirable quality of a coherent and coordinated curriculum. An intentional approach to planning, delivering (e.g., co-teaching), sequencing, orchestrating, synchronizing, framing, and/or consolidating to ensure the consistent and coherent presentation of similar topics, help students synthesize individual concepts into a broader comprehension, promote clinical application of basic science concepts, help students progressively gain knowledge and build skills, reinforce understanding, and/or help learners create a deeper comprehension of material. Horizontal and vertical integration refer to integration activities within and across curriculum segments.

Major written exam – any written examination that comprises 20% or more of a final course grade.

Measures -- Quantitative or qualitative information that specify results towards a particular goal.

NEOMED Performance Standard – a predetermined standard of excellence developed by the NEOMED Curriculum Committee. Performance standards are used to make decisions regarding conformance and/or quality.

Quality assurance – the systematic review and revision of curriculum structures and functions to ensure that the educational program effectively achieves stated objectives and conforms to core principles.

Appendix 1: Relative Duties Between Course Directors and Curriculum Committees

See Table 2

Appendix 2: Rules for Developing a Core Principle

- A core principle should have a simple title that conveys the essence of the principle.
- A core principle should generally be considered a priority for the educational program that is worthy of expending resources to implement, monitor, and manage.
- Why a core principle should be created:
    - Including the core principle results in a positive impact on the learners/educational program. The absence of the core principle would either have a negative or potentially negative impact on the learners/educational program.
    - Including the core principle is required to address an externally imposed requirement.
- How the standard should be formatted:
    - Each core principle should be formed around a fundamental educational principle or best practice. The standard is a declarative statement that conveys a simplified abstracted concept.
- Other conditions:
    - Core principles should not express a desired learner competency intended as an educational program objective (though the core principle may create conditions that facilitate the development of certain competencies).
    - Core principles should not be duplicated.
    - The core principle must be feasible given resource constraints.

Appendix 3: Core Principles

The NEOMED College of Medicine MD Program Core Principles

1. GOALS

1.1. **Educational Program Objectives** – The educational program objectives are clearly written and measurable, sufficiently taught and assessed, and guide the selection and placement of content throughout the curriculum. They specify what students must do or learn in order to progress in the development of the competency associated with each educational program objective.

1.2. **Course Objectives** – Course objectives are logically mapped to and driven by educational program objectives; define course content; are conveyed to students and all instructors (including faculty and non-faculty instructors at each instructional site); are sufficiently detailed to facilitate curriculum planning efforts; are aligned with course content and course delivery methods; are of consistent depth, breadth, and scope across courses; are comparable across instructional sites; and are written in specific, observable, and measurable terms that describe what students will be expected to learn or do by the end of the course.

1.3. **Weekly or Session Objectives** – Weekly or session objectives are logically mapped to and driven by course objectives; are conveyed to students and all instructors (including faculty and non-faculty instructors); define content to be covered during that week or session; are sufficiently detailed to guide student learning; are aligned with weekly or session content and assessment items; and are written in specific, observable, and measurable terms that describe what students will be expected to learn or do by the end of the week or session.

2. CONTENT

2.1. **Alignment** – Content taught and assessed by courses and clerkships is aligned with objectives and delivery methods.

2.2. **Content Scope** – The depth and breadth of content is informed and guided by the knowledge, skills, and behaviors required for the student to perform successfully on licensing exams and as an undifferentiated physician beginning residency.

2.3. **Suitable Content** – Content is accurate, contemporary, and appropriate for the level and readiness of the learner.

2.4. **Intentional Content** – Where appropriate, content gaps and repetition may be intentional.

2.5. **Clinical Application** – Pre-clerkship basic and behavioral science content emphasizes and portrays concepts in such a way that it helps students apply basic and behavioral science principles to the practice of clinical medicine.

2.6. **Curriculum Thread** – Designated concepts and skills (such as medical humanities or ethics) are progressively addressed throughout the curriculum using a unified framework of course/session objectives and delivery methods.

3. DESIGN

3.1. **Organization** – Curriculum components are organized, scheduled, structured, and situated to optimize curriculum integration and efficiency of learning. Decisions about the organization of curriculum components are mindful of the potential impact of the design on learner wellness.

3.2. **Context** – Concepts or skills are presented and situated to build on prerequisite material and provide a larger context necessary to fully comprehend the stated objectives.

3.3. **Integration** – Similar and complementary content, concepts, or skills are delivered, sequenced, orchestrated, synchronized, framed, and/or consolidated to ensure the consistent and coherent presentation of similar topics, help students synthesize individual concepts into a broader comprehension, promote clinical application of basic science concepts, help students progressively gain knowledge and build skills, reinforce understanding, and/or help learners create a deeper comprehension of material.

3.4. **Efficiency** – Each course and clerkship is delivered in the minimum length of time required for students to successfully achieve the objectives and makes the most efficient use of time assigned to it.

4. DELIVERY

4.1. **Instructional Methods** – Instruction is delivered through objective-appropriate strategies designed to highlight key concepts, promote future application, enhance retention, maintain attention, facilitate efficient learning, and cognitively engage the learner. Wherever possible, instructional methods should foster development of self-directed, lifelong learning skills among students.

4.2. **Summative Assessment** – Methods used to assess student learning and performance are reliable and valid, constructed consistent with guidelines published by the National Board of Medical Examiners[iii], equivalent across all instructional sites, equitable for all members in a class, aligned with course/session objectives and content, and yield meaningful information that may be used to make judgements regarding student competency.

4.3. **Formative Assessment** – Each course provides students with meaningful feedback regarding their performance that is sufficiently timely and detailed to allow the students to modify their thinking or behavior if necessary.

4.4. **Learning Environment** – Each curriculum component is delivered in an environment that embodies the ideals of the Teacher Learner Relationship.

4.5. **Comparability** – Courses and clerkships delivered at multiple instructional sites ensure that accreditation-mandated aspects of the course or clerkship are comparable and that site-related inconsistencies involving student grades or satisfaction are rapidly identified and resolved.

4.6. **Remediation** –Remediation activities for a course or clerkship ensure student achievement of the objectives of that course or clerkship.

4.7. **Assessment Weighting** – Courses employ multiple methods to assess student competency and assign weight to that component based on the relative importance of the competency and on the extent to which student performance varies on the competency.

5. EVALUATION

5.1. **Program Evaluation** – Processes for evaluating the curriculum and its component parts are designed to obtain valid and meaningful information and minimize survey fatigue for participants in the evaluation process. Evaluation processes are data driven and occur with sufficient frequency to ensure that any emerging problems are identified and corrected in a timely manner.

5.2. **Quality Improvement** – The results and outcomes of periodic evaluation processes are used to improve the quality and effectiveness of the evaluated curriculum component. Site-specific evaluation and performance data are shared across sites and used to address any performance issue.

6. COMPLIANCE

6.1. **Accreditation Compliance** – All curricular structures and functions will be compliant with applicable accreditation standards.

6.2. **University Compliance** – All curricular structures and functions will be compliant with applicable university policies.

Appendix 4: Standardized Curriculum Committee Recommendation Form

The curriculum committees use a standardized report form to communicate information and generate recommendations. These reports contain the following fields.

- Title (same title as listed on agenda)
- Committee
- Date of Committee Presentation
- Presenter
- Data Source(s) (including Years/Classes)
- Finding(s)
- Recommendation (brief 1-2 sentences)
- Rationale
- Recommendation Target(s) & Date (e.g., course, segment, course director, policy, core principle)
- Applicable Policies/Standards (e.g., core principle, LCME standard)

Example:

Curriculum Committee Recommendation Form

Title: Clinical Decision-Making Thread
Committee: NEOMED College of Medicine Curriculum Committee
Date: 6.1.2017
Presenter: Dr. Smith
Data Source(s): 2016 AAMC GQ
Finding(s):
Recommendation: Establish a new Clinical Decision-Making thread across selected courses.
Rationale:
Recommendation Target(s) & Date: Clinical Medicine I, Clinical Medicine II, all required clerkships AY 2018-2019
Applicable Policies/Standards:

7.4 CRITICAL JUDGMENT/PROBLEM-SOLVING SKILLS

The faculty of a medical school ensure that the medical curriculum incorporates the fundamental principles of medicine, provides opportunities for medical students to acquire skills of critical judgment based on evidence and experience, and develops medical students' ability to use those principles and skills effectively in solving problems of health and disease.

[i] www.lcme.org

[ii] http://lcme.org/publications/#DCI

[iii] *Constructing Written Test Questions for the Basic and Clinical Sciences*. National Board of Medical Examiners. (Most Recent Version)