

University of Minnesota Medical School

Competencies Required for Graduation

Final Report of The Medical Student Clinical Skills Committee

**Curriculum Committee
Endorsement
October 4, 2002**

**Education Council Approval
November 19, 2002**

UNIVERSITY OF MINNESOTA MEDICAL SCHOOL
Medical Student Clinical Skills Committee

Executive Summary

A list of skills to be required of students graduating from University of Minnesota Medical School is presented, grouped within the domains of Clinical Skills, Procedural Skills and Professionalism Skills. These skills are considered common, important and appropriate for students to demonstrate prior to entering residency. We recommend that all students be given the opportunity to perform each of these skills on at least one occasion during medical school. We recommend that course directors, particularly of the Clinical courses of Years 1 & 2 and of the required courses in Years 3 & 4 and other personnel (such as Basic Life Support instructors) certify that students have demonstrated each skill. If a student is unable to demonstrate a certain skill(s), this inability would be noted in the student's academic record. We recognize that demonstration of a skill on one occasion does not imply competency or proficiency. Where competence is an objective of a given course, further opportunity to perform that skill a requisite number of times needs to be provided to the student.

Clinical Skills Committee

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For copies of the above attachments, and/or a copy of the complete committee report, please contact the Director of Clinical Education, Medical School Education, MMC 293 Mayo, 420 Delaware St., S.E., Minneapolis, MN 55455, or by email at thomp005@umn.edu or by telephone at 612-626-6067.

University of Minnesota Medical School

Competencies Required for Graduation

Based upon recommendations of the Medical Student Clinical Skills Committee, on November 19, 2002, the Education Council adopted the competencies required for graduation listed below. Graduating students already possess many of these competencies, but a documentation of all competencies will be required beginning with the University of Minnesota Medical School Class of 2005. Competencies are presented in three groups: I. Clinical Skills, II. Procedural Skills, III. Professionalism Skills. For a copy of the complete committee report, please contact the Director of Clinical Education, Medical School Education, MMC 293 Mayo, 420 Delaware St., S.E., Minneapolis, MN 55455, or by email at thomp005@umn.edu or by telephone at 612-626-6067.

I. CLINICAL SKILLS

A. Communication Skills

The student graduating from this medical school will be able to:

1. Build rapport with each patient

- Demonstrate respect for each patient as a person
- Establish an effective empathic relationship
- Respect the patient in the context of their social and cultural environment
- Communicate effectively non-verbally
- Handle patient emotions effectively ¹

2. Communicate effectively

- Use effective interview processes [such as Segue process]
- Effectively gather data effectively¹
- Ask questions of patients that are appropriate to their cultures
- Make a competent presentation of a patient encounter
- Utilize medical transcription services in an effective manner, for example - dictation
- Interview patients with the aid of a medical interpreter
- Obtain Informed Consent from patients

3. Document effectively

- Prepare a competent medical interview report
- Document a competent written patient progress note [in SOAP² format for both inpatient and outpatient encounters]

¹The 3-Function Model refers to the 3 functions of the Medical Interview as: I. Data Gathering, II. Emotion Handling, and III. Patient Education

² The SOAP format refers to writing a patient progress note under the headings: Subjective, Objective, Assessment and Plan.

- Communicate orders for common diagnostic tests for common conditions
- Document inpatient admit note and admit orders for common conditions

4. *Complete a comprehensive medical history to be used during medical evaluation and diagnosis*

- Take a comprehensive history from an Adult
- Take a history of possible domestic violence from all 'at risk' patients
- Take a thorough occupational history from all employed patients
- Take a comprehensive history from a Child
- Take a comprehensive history from an Adolescent
- Take a comprehensive history from a Senior patient
- Take a comprehensive history from an Adult Female: as per adult history with modifications that include:
 - i) Menstrual history: Age of menarche, interval between menses, duration of menses, last menstrual period, menopause
 - ii) Obstetrics history: written in Gravida-Para FPAL format; and
 - iii) Gynecologic history: prior history of gynecologic disease and/or treatment, STD, PID, sexual history, contraception
- Take a comprehensive history from a patient with Psychiatric Illness: as per adult history with modifications such as:
 - i) Assessment of depression and suicidal risk
 - ii) Assessment of delirium
 - iii) Assessment of mental status
- Take a comprehensive genetic history (such as extended family history of inheritable disorders for specific common conditions)

5. *Provide appropriate, basic patient education and behavior change recommendations.*³

- Educate healthy patients about prevention of future illness (primary prevention)
- Educate patients with common illnesses about their illness
- Educate patients with common illnesses about prevention of further illness (secondary prevention)
- Provide patients with basic education concerning change of common unhealthy behaviors (example: cigarette smoking, lack of exercise, poor diet)
- Educate patients about their use of common medications and expected common side-effects (example: respiratory inhalers, anti-inflammatory medications, anti-hypertensive medications).

B. Physical Examination Skills

The student graduating from this medical school can skillfully perform:

1. *A Complete Adult Physical Exam*
2. *A Pediatric physical exam, including*
 - Developmental assessment for milestones

³ The 3-Function Model refers to the 3 functions of the Medical Interview as: I. Data Gathering, II. Emotion Handling, and III. Patient Education

- Assessment of childhood growth charts
 - Physical examination for particular common pediatric findings, such as:
 - i) Neonatal congenital hip dislocation
 - ii) Infant strabismus; and
 - iii) Adolescent scoliosis
3. *An emergency-directed examination of patients with common medical emergencies, including:*
- Examination of the unconscious patient [ABC assessment]⁴
 - Assessment of common respiratory emergencies
 - Assessment of common cardiac emergencies
 - Assessment of Acute abdominal emergencies
 - Assessment of Acute trauma victims
 - Assessment of Common obstetric emergencies
 - Assessment of Common ophthalmic emergencies
 - Assessment of Victim of common poisoning
4. *An examination of an adult patient with a permanent physical disability, such as:*
- Cerebral Palsy or other non-transient Neurological disorder
5. *Examination of adult patients with common medical conditions, including:*
- The most common outpatient medical problems
 - The most common inpatient medical problems

⁴ “Airways, Breathing, Circulation” assessment

C. Patient Assessment Skills

The student graduating from this medical school will be able to:

1. *Demonstrate problem solving skills*
 - Generate hypotheses in making a clinical diagnosis
 - Practice symptom pursuit
 - Apply scientific method (including evidence-based medicine principles) to patient care
 - Use appropriate academic resources
2. *Formulate a clinical diagnosis*
 - Utilize appropriate clinical skills to develop a differential diagnosis
 - Determine which diagnostic tests are appropriate and cost-effective methods of confirming a clinical diagnosis
3. *Interpret basic diagnostic tests (the graduating student will be able to interpret, but not necessarily personally perform the following)*

• Resting EKG
• Commonly performed diagnostic imaging, including:
Interpretation of an adult Chest x-ray (AP/lat);
Interpretation of an adult X-ray of long bones;
Recognize Basic features of Ultrasound, CT and MRI films.
• Pulse oximetry readings
• Peak expiratory flow rate measurement
• Basic Spirometry results
• Electronic Fetal Monitoring strip and fetal non-stress test
• Audiologic testing results [Audiometry and Tympanometry]
• Interpret basic written reports of commonly performed tests, such as:
EEG
EMG and nerve conduction studies
Exercise treadmill tests
Common pathology reports
Gross and Microscopic
Common biochemical and hematologic studies
Common immunologic and genetic studies
• Urine Microscopy report
• Peripheral Blood Smear report

D. Patient Management Skills

The student graduating from this medical school will be able to:

1. Manage Patients as a member of the Health Care Team

- Undertake an appropriate informal and formal consultation with physician colleagues
- Participate in appropriate referrals to other health care professionals
- Solicit the advice of other health care team members
- Interact effectively with clinic and hospital support staff
- Appropriately prescribe commonly used medications
- Correctly and competently manage common problems occurring in the inpatient setting
- Correctly and competently manage common problems occurring in the outpatient setting
- Assist with common inpatient and outpatient procedures and surgeries
- Coordinate care for a patient
- Appropriately answer patients questions about their common illnesses
- Participate in advanced care planning for patients
- Appropriately plan discharge for hospitalized patients
- Arrange follow-up for patients

II. PROCEDURAL SKILLS

A. FUNDAMENTAL SKILLS⁵

(i) The graduating student:

-should be able to perform these fundamental skills ⁶

-should be able to describe the indications for, and complications of these procedures

-and should be able to personally demonstrate these skills ON A PATIENT (preferred); A PATIENT SIMULATOR, or MANNEQUIN; or in a SKILLS –TEACHING LABORATORY (e.g. Skills Laboratory – Emergency Medicine)

SPECIFIC SKILLS	TEACHING RESPONSIBILITY	
	PRIMARY	OTHER
Obtaining a throat swab	FP	P,M
Removal of cerumen from external ear canal	FP	P,M
Performance of routine STD testing, male or female	FP	O/G,M,P
Use of a peak flow meter	FP	M,P,Skills
Basic venipuncture including obtaining a blood culture	M	FP,P,S
Performance of a vaginal speculum exam	O/G	FP
Performance of a PAP smear	O/G	FP
Performance of a normal spontaneous vaginal delivery	O/G	FP
Basic wound care	S	FP,SS,M,P,Skills
Performance of stool occult blood (Hemoccult) testing	S	FP,M,P,O/G
Sterile technique (e.g., gloving, sterile dressing change)	S	O/G,M,P,FP, SS
Application of universal precautions	S	O/G, FP,M,P,SS
Injection of adequate local anesthetic block	S	FP,M,P,O/G,SS
Interrupted suture closure of a simple skin laceration	S	FP,O/G,SS
Subcutaneous suture closure of a wound	S	FP,O/G,SS
Placement of foley catheter, male	S	M,Skills
Placement of foley catheter, female	S	O/G,M,Skills

SPECIALTIES:

FP – Family Practice/Primary Care Clerkship

M – Medicine

P – Pediatrics

O/G – OB/GYN

S – Surgery

SS – Surgical Subspecialties

Skills – Skills Laboratory (e.g. Skills Laboratory – Emergency Medicine)

⁵ Every student is expected to personally perform these fundamental skills on a minimum of one supervised occasion

⁶ These skills should be performed with or without reasonable accommodation

A. FUNDAMENTAL SKILLS⁵ CONTINUED

(ii)The graduating student:

- Should be able to perform these fundamental skills⁶
- Should be able to describe the indications for, and complications of these procedures
- Should be able to personally demonstrate these skills on a **PATIENT SIMULATOR** or **MANNEQUIN** (most likely); **PATIENT**; or in a **SKILLS –TEACHING LABORATORY** (e.g., Skills Laboratory – Emergency Medicine).

SPECIFIC SKILLS	TEACHING RESPONSIBILITY	
	PRIMARY	OTHER
Application of a temporary splint or simple cast	FP	SS,S,Skills
Familiarity with basic principles of a ventilator/ventilatory support	M	P,S
Microscopy for ‘ferning’ of amniotic fluid	O/G	FP
Microscopy of vaginal smear “wet prep” and KOH exam	O/G	FP
Insertion of a nasogastric tube	S	M,P,O/G,Surg,SS,Skills
Control of gross external hemorrhage and stabilization of bleeding patient	S	M,FP,Skills
Basic burn care	S	FP,M,Skills
Temporary immobilization of a cervical spine fracture	Skills	SS,S
Basic Life Support (cardiopulmonary resuscitation)	Skills	M,FP
Obtaining an arterial puncture	Skills	M,FP,S
Insertion of an intravenous cannula	Skills	M,S,P,FP
Insertion of a central venous catheter	Skills	S,M
Insertion of adult endotracheal tube	Skills	SS
Use an automated external defibrillator (AED)	Skills	M
Basic use of manual external cardioversion	Skills	M
Management of epistaxis	Skills	M,FP
Fluorescein staining and examination of the eye	Skills	FP,M

SPECIALTIES:

- FP – Family Practice/Primary Care Clerkship
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⁵Every student is expected to personally perform these fundamental skills on a minimum of one supervised occasion

³ These skills should be performed with or without reasonable accommodation

B. IMPORTANT, MORE COMPLEX SKILLS⁷

The graduating student:

- Should be able to describe the indications for, and complications of these procedures
- Should be familiar with and be able to describe the basic techniques of these procedures, and
- Should strive to observe or assist with (not necessarily perform) these procedures on a PATIENT SIMULATOR or MANNEQUIN (most likely); PATIENT; or in a SKILLS – TEACHING LABORATORY (e.g., Skills Laboratory – Emergency Medicine).

SPECIFIC SKILLS	TEACHING RESPONSIBILITY	
	PRIMARY	OTHER
Skin biopsy (punch or excision)	FP	M,P
Upper GI endoscopy	M	S, FP
Lower GI endoscopy (flexible sigmoidoscopy or colonoscopy)	M	S,FP
Exercise stress testing	M	FP
Endometrial biopsy	O/G	FP
Incision and drainage of a superficial abscess	S	FP,MP
Use of laparoscopy	S	SS,O/G
Open abdominal surgery (for example: appendectomy, laparotomy)	S	FP
Performance of injections: intradermal, subcutaneous, intramuscular and intravenous	Skills	P,FP,M
Thoracentesis	Skills	M,S,P
Insertion of an arterial canula	Skills	M,S,P
Placement of Swan-Ganz catheter – understand wave forms	Skills	M,S

SPECIALTIES:

- FP – Family Practice/Primary Care Clerkship
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- S – Surgery
- SS – Surgical Subspecialties
- Skills – Skills Laboratory (e.g. Skills Laboratory – Emergency Medicine)

⁷ Every student is expected to be familiar with, but not personally perform, these important, more complex skills

C. OTHER IMPORTANT, MORE COMPLEX SKILLS⁷

The graduating student:

-Should be familiar with and able to describe the indications for and complications of these procedures.

SPECIFIC SKILLS	TEACHING RESPONSIBILITY	
	PRIMARY	OTHER
Larger joint aspiration or injection	FP	SS,M
Performance of urinalysis by dipstick	FP	M,P,O/G
Lumbar puncture	M	P,M,FP
Neonatal circumcision	P	FP,O/G
Episiotomy repair or perineal laceration repair	O/G	FP
Assisted vaginal delivery (vacuum or forceps)	O/G	FP
Cesarean section	O/G	FP
Dilatation and curettage (D and C)	O/G	FP
Change a tracheotomy tube	SS	S,Skills
Establish an emergency airway/tracheotomy	Skills	SS,S

SPECIALTIES:

FP – Family Practice/Primary Care Clerkship

M – Medicine

P – Pediatrics

O/G – OB/GYN

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Skills – Skills Laboratory (e.g. Skills Laboratory – Emergency Medicine)

⁷ Every student is expected to be familiar with, but not personally perform, these important, more complex skills

III. PROFESSIONALISM SKILLS⁸

A. Personal Characteristics and Commitments

The student graduating from this school will demonstrate:

- Enthusiasm for medicine and patient care
- Commitment to excellence
- Respect for others, treating them as equals, without arrogance, rudeness or harassment
- Honesty, integrity, trustworthiness and confidentiality
- Appearance and demeanor which do not offend patients or colleagues
- Commitment to the medical needs of the community and society
- Recognition of one's own personal strengths and limitations
- Ability to cope adaptively with stresses likely to occur during medical training
- Ability to accept and act upon constructive criticism
- Ability to seek help when help is needed
- Avoidance of addictive behaviors
- Balance between altruism (subordinating one's self interest to the interest of others) and one's personal needs

B. Interaction with Patients and Their Families

The student graduating from this school will demonstrate:

- High level of compassion for patients and their families
- Personal commitment to honoring the choices and rights of other persons, especially regarding their medical care
- Ability to establish effective relationships with patients and their families that enables one to:
 - i) Provide reassurance
 - ii) Give encouragement and support
 - iii) Convey empathy and caring
- Ability to communicate effectively with patients so that one can:
 - i) Provide options in care
 - ii) Check accuracy and effectiveness of communication
 - iii) Identify failures in communication
 - iv) Communicate bad outcomes and mistakes
 - v) Deal with anger
 - vi) Deliver bad news in a sensitive manner
 - vii) Set clear expectations
 - viii) Respond to patients' questions and concerns
- Ability to educate patients:
 - i) About their health care options
 - ii) Giving clear and understandable explanations

⁸ The present professionalism expectations of the School's students are included within the Students E*Value form of student evaluations, and failure of a clerkship may occur with failure to demonstrate professionalism in required clerkships.

C. Communication with Colleagues and Health Care Teams

The student graduating from this school will demonstrate:

- Ability to function well as a member of a health care team
- Traits of collegiality, flexibility, adaptability, reliability, punctuality and responsibility with colleagues and team members
- Effective and respectful communications with colleagues and health care team members
- Good organizational skills with respect to:
 - i) Time management with patient care
 - ii) Completion of records and paperwork in a timely manner
 - iii) Effective setting and reassessment of priorities
 - iv) The ability to handle multiple responsibilities simultaneously

D. Commitment to Continuing Professional Development

The student graduation from this school will demonstrate :

- Strong commitment to learning and scholarship
- Understanding of the importance of lifelong learning
- Ability to identify and acknowledge limits of knowledge and skills, including uncertainty
- Accurate self-assessment
- Ability to learn from experience and feedback
- Ability to stay current with medical literature
- Understanding of Evidence-Based Medicine (EBM) with respect to:
 - i) Formulating patient-based questions
 - ii) Efficiently searching literature databases
 - iii) Appraisal of quality of studies
 - iv) Applying the results of a literature search to direct patient care

Personal Performance

The Committee recognizes that some medical school students will have limitations in their abilities and therefore may have difficulty in the performance of certain procedural skills (see section II.). The clinical skills and professionalism skills are required for graduation. The listed procedural skills are considered expectations of our graduates and are not considered requirements for graduation. The Committee recommends that if a medical student is unable to personally perform any of these listed skills, for whatever reason, this would be noted on the student's academic record.