Chapter 5

Medical Education and the Changing Practice of Medicine
CHAPTER OBJECTIVES

• Understand influences that have shaped U.S. medical education and practice from colonial times till the present
• Understand the evolution of specialty medicine as coupled with scientific advancements
• Acquire knowledge of current delivery system developments on medical education and practice
Colonial America

• No medical schools
• Sick were treated with medicinal herbs in their homes
• Some university-trained physicians in Europe, but few came to the colonies
• Colonial physicians trained in an apprentice relationship with European physicians
Early Medical Education (1)

• Apprenticeship training with a single mentor continued until hospitals founded in mid 1700s
• First medical school established in 1756 (College of Philadelphia), 2nd at King’s College, 1768 (later Columbia Univ.)
• 1800: only four U.S. medical schools
• Graduates received “certificates”; diplomas considered licenses to practice
Early Medical Education (2)

• 1821: Georgia first state to restrict licenses to medical school graduates, against opposition from the apprentice-trained

1847: most state medical societies affiliated with new AMA to improve education standards; foundered for decades due to vested interests.
Early Efforts at Medical Education Reform

• 1876: American Assn. of Medical Colleges (22 medical schools) advocated 4 yr. training program

• 1892: Harvard 1st to require 4 years training, followed by Johns Hopkins in 1893
AMA and Education Reform

• 1904: AMA established
  – Council on Medical Education: address needed educational improvements and standards
  – JAMA: publish medical school state licensing failure statistics and group schools by failure rates, demanding poor schools to improve or resign the association
AMA and Educational Reform: Flexner Investigation

• 1905: Support for AMA reforms by Carnegie Foundation for the Advancement of Teaching; examine all 155 US & Canadian schools’ entrance requirements, faculty, laboratories & hospital relationships

• Schools’ cooperated believing that review would lead to Carnegie Foundation support
The 1910 Flexner Report: *Medical Education in the U.S. and Canada* (1)

- Detailed critique outlining assets, deficits & recommendations
  - Reduce schools from 155 to 31 (85 by 1920)
  - Promoted state licensing legislation
  - Supported curriculum enrichment & facility improvements
  - Stimulated support by foundations and wealthy individuals
The 1910 Flexner Report: *Medical Education in the U.S. and Canada* (2)

- Lauded some schools: Harvard, Western Reserve, McGill, Johns Hopkins (cited as a “model for medical education”)
- University-affiliated schools gained influence over future direction of medical education
Academic Medical Centers

- Federal grants of ‘50s & ’60s supported research-oriented medical schools, teaching hospitals in scientific advances.
- 1965: Regional Medical Program: research grants, service innovation, networking among providers; political & financial support waned by 1974
- By 1980s: Federal support increased medical schools to 127.
Academic Health Centers (1)

- Academic medical centers and teaching hospitals added nursing, pharmacy, dentistry and allied health
- Affiliated hospitals are primary sites of most clinical research and patient trials for medical advances
- Provide primary and specialty care for economically needy
Academic Health Centers (2)

- Most advanced care for trauma, burn, neonates, cancer, heart disease, etc.

- Care is 20-30% more costly than non-teaching counterparts due to teaching requirements
Graduate Medical Education Classifications

- MD: allopathic physicians

- DO (Doctor of osteopathy)

- 125 Schools of Medicine; 25 Schools of Osteopathy

- MDs & DOs use all accepted methods of treatment; DOs emphasize musculoskeletal system
Graduate Medical Education (GME) Consortia

• Consortia: formal associations of medical schools, teaching hospitals, other organizations involved in residents’ training
  – Encourage members to function collectively
  – Improve oversight of programs, encourage ambulatory care training, address primary & specialty balance and geographic distribution
**Residency Training**

- 3-7 years in recognized specialty accredited by Accreditation Council for Graduate Medical Education
- 7000 residency programs among ~1500 health care organizations.
- Graduate Medical Education Consortia oversight
Graduate Medical Education Funding

• Prior to 1950: costs negligible: volunteer faculty, small resident stipend
• Now: resident wages, benefits; paid faculty and overhead expenses
• Till ~1975: 3rd party payers accepted added costs to support training.
Medical School Funding

• Primary source is share of clinical practices of faculty (~30%)
• Research grants & contracts (~18%)
• State & local government, tuition provide a small proportion
• Endowments vary school-to-school
• Medicare rate subsides for education declining
Growth of Medical Specialties (1)

• AMA concerns began in mid 1800s:
  – Fragmented care (not treating “whole patient”)
  – Incentives to focus on more invasive, complex care
Growth of Medical Specialties (2)

- AMA slow response prompted specialists to form societies
  - Late 1800s: specialty associations formed in ophthalmology, obstetrics/gynecology, pediatrics, otology
  - WWI: negative findings from Armed forces physician recruitment; “self-declared specialists”
Growth of Medical Specialties (3)

• Post WW II: poor quality hospital residency programs
• 1947: American Academy of General Practice est. to advocate for non-specialists’ status in hospitals
• AMA commissioned outside review of medical education: Citizens Committee on Graduate Medical Education chaired by John Mills
The John Mills Report-1966

• Eliminate independent internships; institutions, not departments accredit residency training programs
• 1970: AMA endorsed dropping “internship” & including 1st year training in a residency review committee-approved program
• Mills’ report lead to qualifying exams and specialty board certifications
Specialty Boards & Resident Performance (1)

- Boards ensure proper instruction & resident performance by exam & practice
- By 1991, 24 specialty boards
- 100+ subspecialties within 24 medical specialties; fellowships train for subspecialties or research
Specialty Boards & Resident Performance (2)

• Residency Review Committees ensure training quality for each specialty board
  – RRCs operate under authority of Accreditation Council for Graduate Medical Education, American Hospital Association, AMA, AAMC and Council of Medical Specialty Societies to set residency standards
  – RRCs control number of residents in each program
Physician Workforce & U.S. Medical Schools (1)

• Mid 1960s: Government predicted national MD shortage; policies to increase no. of MDs
• Medical schools increased by 50%: students by 100%; 1965-1996: MDs increased from 300,000-702,000.
• MDs per 100,000 pop. rose from 137 to 264.
Physician Workforce & U.S. Medical Schools (2)

• 1981: predictions of MD oversupply; schools continued to increase graduates
• 1991 graduates: 83,000; 1998 graduates: 98,000
• Increases in international medical graduates; almost ¼ from foreign medical schools; IMGs needed to fill residency vacancies.
Ratio of Generalists to Specialists

• No national policy or master plan to achieve balance
• Historical predictions of under- & oversupply of primary MD ratio to specialists vacillate with little overall change, despite attempts to adjust
• Current ratio of 65:35 largely results from individuals’ career choices
Physician Specialty Choices

• Influenced by:
  – Hierarchy of prestige, respect
  – Teaching hospital culture favors specialists
  – Earning potential
  – Market conditions of supply and demand

• Medical schools encourage primary care:
  – Admissions preferences for general practice
    More emphasis on ambulatory training
Preventive Medicine

• Medical education: low priorities for health promotion and disease prevention
• 1991 Pew Trust Report highlighted community health perspective
• New public awareness producing increased physician involvement in community health, preventive initiatives
Changing Relationships: Physicians & Hospitals

• History of mutually beneficial relationship; hospitals relied on physicians for admissions; physicians relied on hospitals for excellent patient facilities & services

• Change factors
  – Prospective payment (lengths of stay)
  – Managed care constraints
  – Physician entrepreneurship
Hospitalists

• Fastest growing practice field is outside of specialty training purview
• Employed by one or more hospitals or contracted by companies
• Internal medicine and pediatrics
• Sole responsibility is care of hospitalized patients
Cost Containment & System Restructuring (1)

- Managed Care Organizations: reimburse providers a set amount per patient
- MCO requirements: utilization reviews, test monitoring, treatment & surgery decisions
- Physicians rail against loss of authority, income
Cost Containment & System Restructuring (2)

- **Average MD income declining:** 1995-2003 by 7% ; primary care MD income by 10%
- **Incentive programs:** Insurer “pay-for-performance” encourages use of evidence-based guidelines to achieve improved outcomes; Medicare experimenting
- **Transparency increasing with “physician report cards”**
Clinical Practice Guidelines (1)

- Evolved in 1980s from studies showing wide variations in procedures, costly, questionable or unnecessary procedures.
- Assist provider decisions about most appropriate care for specific clinical circumstances
Clinical Practice Guidelines (2)

• Agency for Health Care Quality and Research (est. 1989) funded outcomes research & provided data promoting clinical guidelines.

• Currently, over 1600 practice guidelines produced by Rand Corp. studies, medical specialty societies, MCOs, Medicare & other insurers
Physician Report Cards (1)

- 1970s: AMA ethics prohibited “information that points out differences between doctors.” Protected MDs from public scrutiny
- Freedom of Information Act opened files
- State legislation provides access to records & encourages performance improvements
Physician Report Cards (2)

- Consumer pressures resulting in more transparency
  - 12 states give public access to discipline, malpractice and hospital privilege information
  - Computerized data analyses allow comparisons between individuals, organizations
  - Internet access
Health Information Technology

• A new era for entering and established physicians; funding support 2010 PPACA
• Medical schools include informatics coursework (electronic records, decision-support information, e-prescribing, PDAs)
• Telehealth: remote monitoring of patients & real-time consultations
• Personal health records accessibility
Escalating Costs of Medical Malpractice

- Premiums rising by multiple factors—physicians, hospitals, schools of medicine
  - Causes: high jury awards; investment & economic conditions that spawn higher premiums
  - Responses: early retirements, limiting scope of practice, relocations to less costly states
  - Effects: communities suffer from loss of services
Growing Concern: Ethical Issues

- Managed care organizations restrict physician autonomy
- Patient risks from unnecessary hospitalization, tests, procedures, ineffective tests/procedures, uncoordinated care
- Molecular biology & gene therapy: implications for use of genetic “blueprints” for diagnosis, treatment and future disease predictions
Physicians and the Internet

- 70+% physicians regularly access the internet for clinical information
- Medical websites growing @ 10%/month, many unevaluated
- Access for ongoing research studies and appropriate referrals
- Practice websites to attract patients
The Future of Medical Practice (1)

- Paradox: Medicine poised to make optimal contributions to prevention & treatment but finance and delivery systems in disarray
- Communication methods still largely archaic; slow to adopt electronic methods
- Physicians unprepared for public policy issues, lost autonomy to insurers, payers
The Future of Medical Practice (2)

• Shift must occur from individual, to population focus with preventive emphasis supported by reimbursement

• Medicine must assume a lead role in public education about benefits of prevention

• Opportunities for medicine to lead in creating “political will”