

Medical Education



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Glossary

- AAMC – American Association of Medical Colleges
 - The group that includes all MD medical schools in the country
 - Good source of data
- LCME- Liaison Committee on Medical Education
 - The regulatory body that accredits medical schools in the U.S.
- UME- undergraduate medical education
 - =medical students
- GME – graduate medical education
 - = residents or fellows
- ACGME – American Committee on Graduate Medical Ed
 - Regulates GME in the U.S.
- USMLE- The national tests taken by all medical students in the U.S. during the 2nd and 4th years of residency

GME

- Residency
 - Training program after medical school that teaches young physicians to be specialists (e.g. to become a family medicine specialist, internal medicine specialist, general surgeon, pediatrician, obstetrician, psychiatrist, pathologist, etc.)
 - Residency lasts 3 to 5 years, depending on the specialty
 - The first year of residency is sometimes called an 'internship'
- Fellowship
 - Training program after residency. Optional, of course.
 - Teaches physicians to become subspecialists (cardiologist, cardiovascular surgeon, maternal-fetal medicine, neonatologist, oncologist, geriatrician, etc)

Primary Care



For PCTF, “primary care” refers to

- Physicians in family medicine, general pediatrics, general internal medicine or general obstetrics-gynecology .
- Non-physician providers licensed to practice primary care: physician assistants or nurse practitioners

Purpose of Medical Education

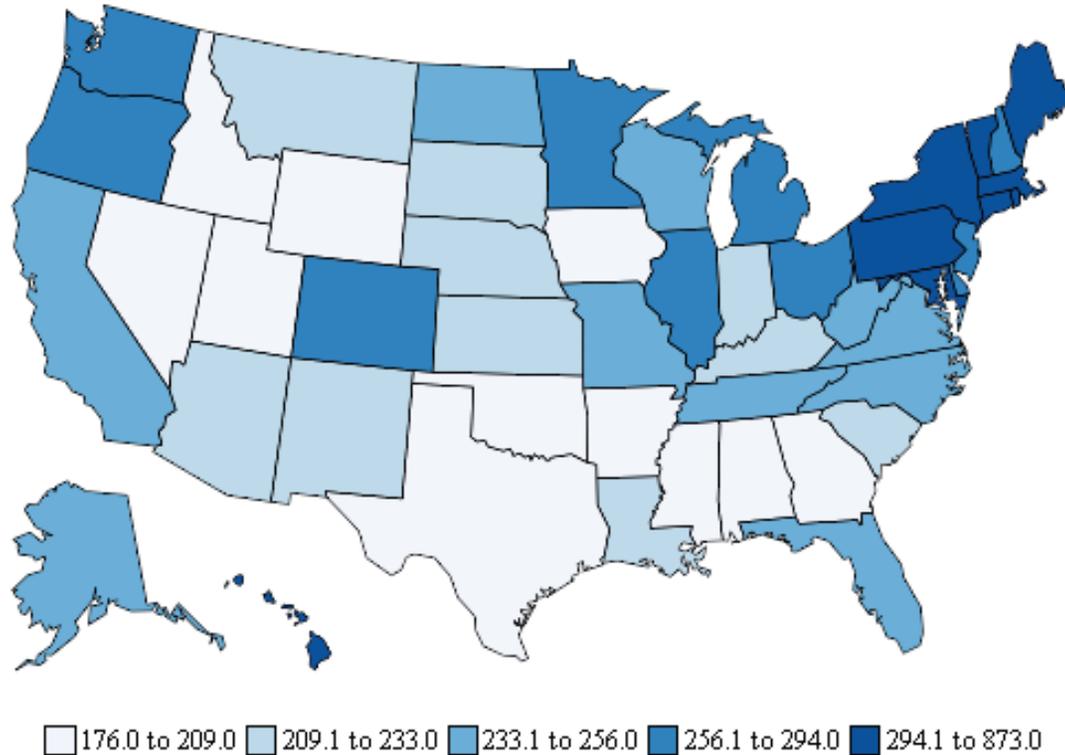


- Provide a skilled physician workforce
 - Able to meet the needs of patients
 - Improve medical knowledge
 - Skilled in the modern practice of medicine
 - Enhance the care environment



Able to Meet the Needs: Medical Workforce

Active physicians per 100K population, 2010 (AAMC)



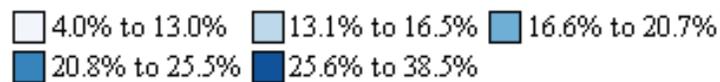
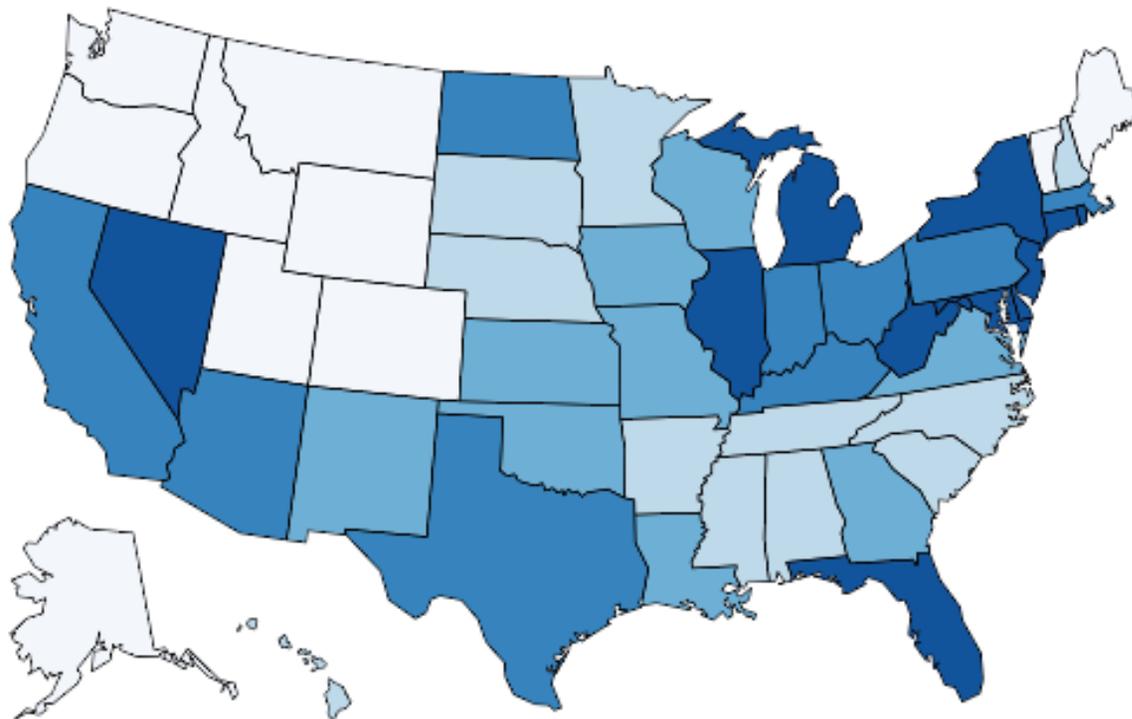
Medical Workforce



- Primary care physicians
 - South Dakota is below average in numbers
 - Existing physicians are older
 - Existing physicians are concentrated in SF: 59 of 66 counties are designated as underserved
- In rural areas, the loss of even one physician means a critical loss of access

Medical Workforce

Percent of active physicians who are IMG, 2010 (AAMC)



Medical Workforce

- 26% of active physicians are aged 60 or older
 - South Dakota = 24%
- 18% of active physicians are under age 40
 - South Dakota = 17%
- 30% of active physicians are female
 - In South Dakota = 25%
- D.O.s make up about 10% of all primary care physicians
 - In Iowa it is = 25%
 - In South Dakota = 7%

What about the medical school?



SSOM Facts



- 56 Students per class with the 4 newly approved (+2 MDPHD +2 transfers Inmed)
- USMLE board pass rates are high (98%-100%)
- USMLE scores are above national average
- For SSOM graduates who are 10 to 15 years out from medical school graduation:
 - 40% currently practice in primary care (90th percentile)
 - 28% practice in rural areas (99th percentile)
 - 37% practice in South Dakota (78% if they did residency here too)

SSOM: Recent Awards



- Top 10 School of Medicine, *US News and World Report* for Rural Medicine
- Top 10 School of Medicine for Family Medicine, AAFP
- First-rate LCME review

THANK YOU !

Medical School Expansion



- Frontier and Rural Medicine (F.A.R.M.)
- Established by Senate Bill 197 (2012) which increased SSOM class size
- Based on the successful Minn program

Rural Medicine: F.A.R.M.



- Students in program will have nine months of clinical experience in a rural community (< 10,000 people)
- Asked for applications from any community in SD that is interested and meets eligibility criteria
- Currently reviewing applications
- First students in sites in FY 14

Student Debt: SSOM



- Tuition is at the 15th percentile (\$23K vs. \$32K)
- Average debt is \$130,462 (35th percentile)
- 100% of students graduate with debt (national average is 85%)
- 19% say debt influenced specialty

How are Students Paying for Medical School?



- 99% of SSOM students receive financial aid
 - \$ 7 million loans
 - \$ 1.2 million grants and scholarships (unobligated)
 - \$ 0.4 million in funds requiring service (NHS, etc.)
- 14% of students received grants/scholarship
- On average, 75% of the costs of medical school are paid by some form of financial aid (usually loans).

After medical school...residency!

USD Residencies

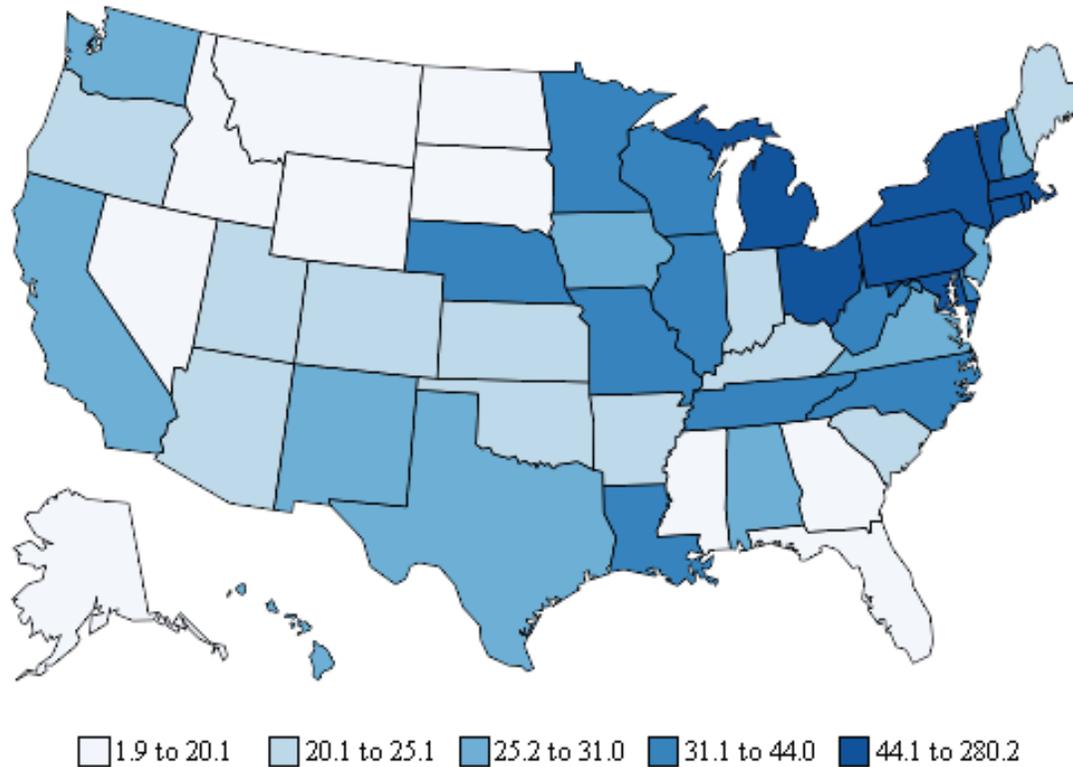
- Family Medicine Sioux Falls
- Family Medicine Rapid City
- Internal Medicine
- Pathology
- Pediatrics
- Psychiatry
- Transitional Year

USD Fellowships

- Cardiovascular Disease
- Child & Adolescent Psychiatry
- Geriatrics

Medical Workforce

Residents and Fellows per 100K population, 2010 (AAMC)



Residencies

- South Dakota has the 2nd lowest ratio of medical students to residents/fellows in the country (AAMC 2011 State Physician Workforce Data Book)
- Most states have slightly more resident/fellows than medical students (1.09)
- South Dakota has only 0.4 residents/fellows per medical student
 - In other words, ≤40% of medical students could possibly do their residency in South Dakota, even if they all wanted only the residencies that we offer
 - On average, about 23% of SSOM graduates actually enter residency in South Dakota

Residencies

Over the last 5 years:

- Of SSOM students who entered residency in South Dakota, 61% entered a primary care residency (FM, IM Peds)
- Of SSOM students who entered out-of-State residencies, 31% entered primary care
- *Thus, doing a residency in-State was a predictor of entering primary care*

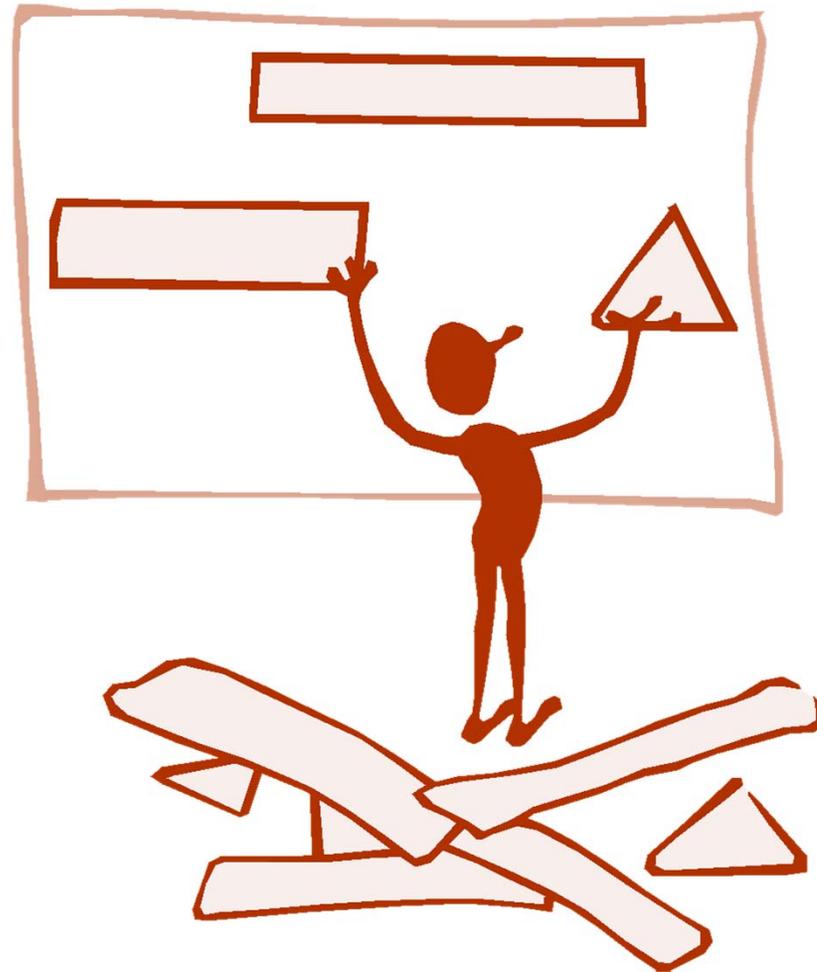
- National data show that 40% of SSOM graduates ultimately practice in South Dakota (10-15 years after graduation)
- This number doubles if they do a residency in SD

Residencies

Over the past 5 years, SSOM students have entered the following non-primary care fields

Anesth	6%		Derm	2%
Path	4%		Psych	7%
ER	7%		ENT	1%
Nsurg	2%		ObGyn	10%
Ophth	1%		Ortho	1%
Plastics	1%		Rads	6%
Surgery	10%		Urol	2%

Changes in Medical Education



Determinants of health

- Genetics
- Biology
- Environment
- Behavior
- Interpersonal relationships
- Culture

*AAMC 2011: Behavioral and Social Science
Foundations for Future Physicians*

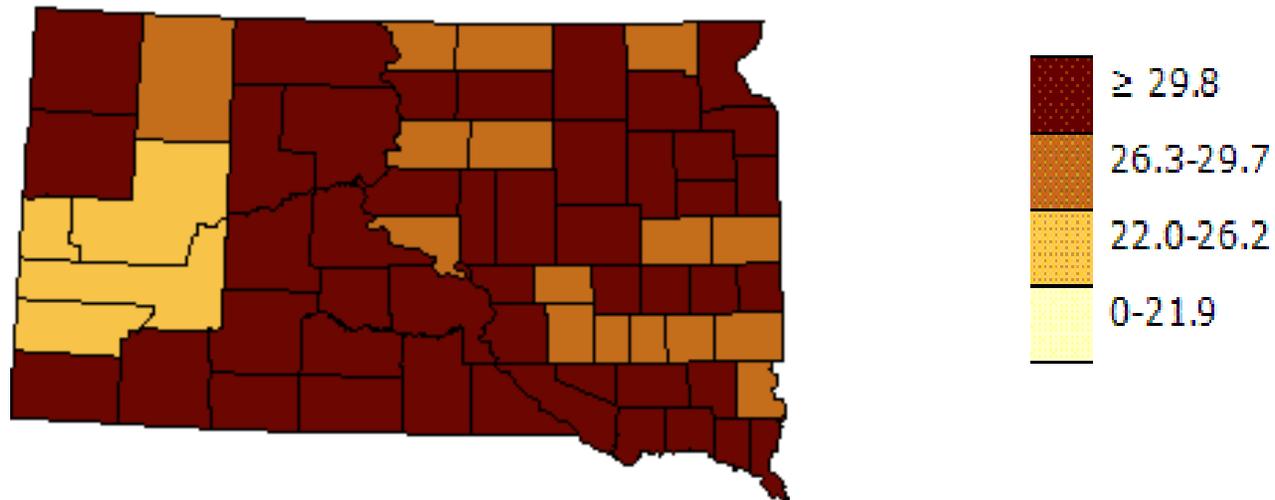
The case for undergraduate behavioral studies courses

- Of the gains in life expectancy since 1970, most are attributable to reduced risks of MI and stroke
- Of these gains, it is estimated that about 23% to 46% are attributable to medical care
- The remainder of the gain is attributed to behavioral change: smoking cessation, diet modification, physical activity
- Modern physicians must understand how to motivate patients and help create/sustain such behavioral changes
- This implies an understanding of behavioral science, culture, environment

NEJM 2012; Kaplan et al.

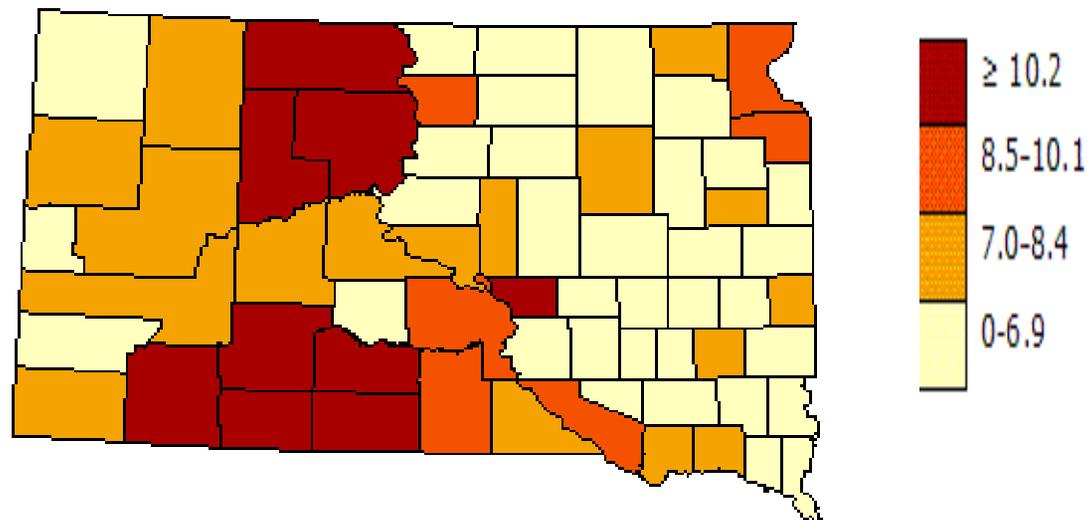
Health of South Dakotans

- 27% meet the definition of obesity (BMI \geq 30)



Percent with Diabetes

- 7% of South Dakotans have a dx of diabetes
- Diabetes death rates are 6 fold higher in non-Caucasians
- Costs approximately \$400 M per year with 2/3 due to medical bills



Smoking in South Dakota



- Decline in youth smoking over last 12 years from 44% to 23%
- Adult smoking has declined from 24% to 15%
- Statewide ban on smoking in most places in 2002
- Statewide ban in all public buildings, 2010
- Still spend ~\$300 M per year on smoking-attributable care

Social-Behavioral Issues in Medicine: Not Just for Psychiatrists Any More



- Health literacy
- Substance abuse
- Communication issues between physicians and patients
 - Noncompliance
 - Pay for Performance (physician)
 - Malpractice

The New MCAT

Current MCAT has 4 sections:

- Writing test, physical sciences, biological sciences, verbal reasoning

Starting in 2015:

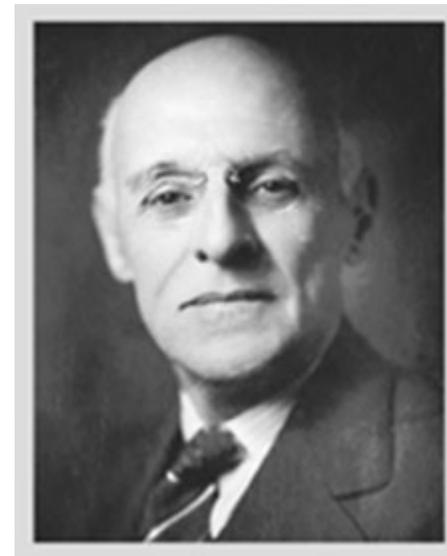
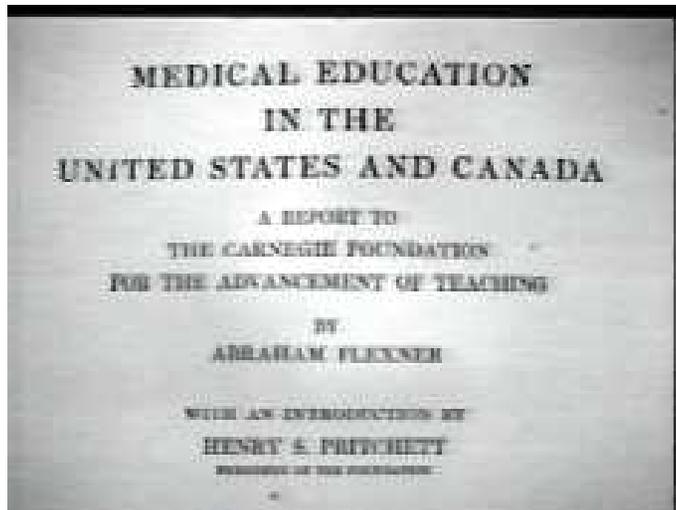
- Eliminate the writing test
- Add sections on social/behavioral sciences
- Add critical analysis/reasoning

NEJM 2012; Kaplan et al.

Debates in Medical Education

- Currently, it takes 14+ years of college, medical school and residency to become a physician.
- E.Emanuel (*JAMA*, 2012) suggests this could be shortened by 30% by
 - Combining college and medical school into 6 total years
 - Eliminating one year of residency
- Less debt, more efficiency
- Less confidence/maturity/knowledge ?

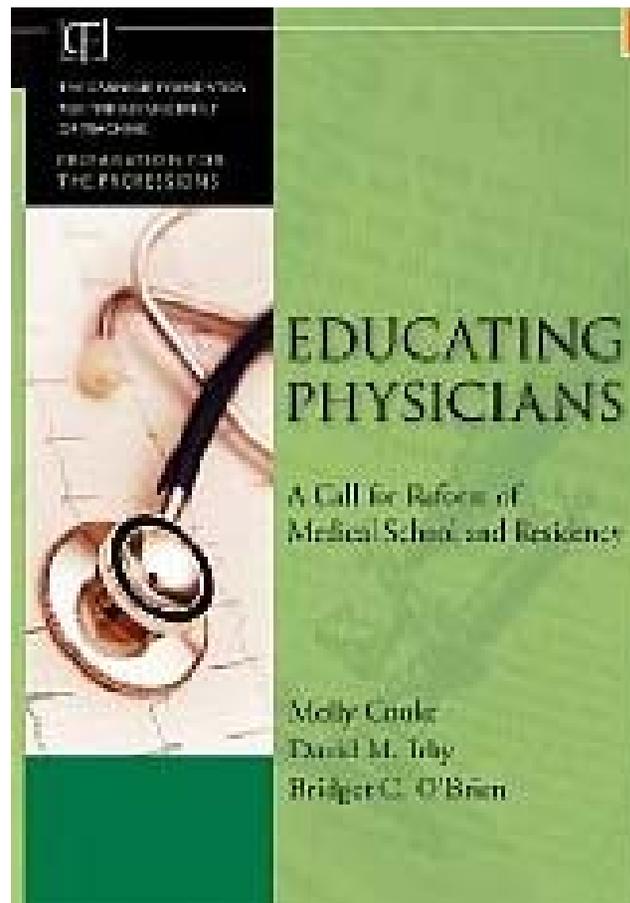
The structure of medical education has changed little since the Flexner report in 1910



Flexner

- Negative report caused half of all medical schools to close or merge.
- USD medical school received a favorable review and did not close
- *“The two Dakotas have taken time by the forelock: before any vested proprietary interest could be created, they have fixed the state practice requirement at two years of college work, thus fortifying the medical department of the state university. The state, though thinly settled, is prosperous and no anxiety is felt that the high standard will deplete the medical profession in the state.”*

Curricular Change 100 Years Later: The Carnegie Report



Domains of Medicine

- Patient Care
 - Including population-based care, cultural competence, cost, satisfaction, safety
- Inquiry and critical thinking
 - Includes innovation, science, improvement
- Membership in the professional community
 - A profession is defined by what it does, not what it knows

The Response



- Virtually every medical school in the U.S. is now in some stage of revising its curriculum

Pillars of Medicine Curriculum: SSOM

- University of South Dakota Sanford School of Medicine is a national model for educational reform
- The Avera Sacred Heart Yankton campus has had a longitudinal model of education for more than two decades and was cited in the Carnegie report as an example of where the nation should be headed
 - Hosts officials from all over the country who are trying to revise their own curricula
 - USMLE scores and pass rates are top-notch
 - Students match well into residencies
- The Pillars of Medicine Curriculum was developed to prepare physicians to practice in the modern world

Pillars of Medicine Curriculum

- Instead of 4 'years', the new curriculum uses 3 'Pillars'





Pillar I

- Pillar I is the Foundations of Knowledge pillar ~ 18 months
 - Basic science, population science
 - Less emphasis on sitting in one-hour lectures
 - More emphasis on small group, case-based or experiential learning
 - ½ day clinical experience per week including introduction to hospital committees/operations and medical society



Pillar II

- Pillar II is the Clinical Foundations pillar
 - 12 months
 - Referred to as the Longitudinal Integrated Clerkship (LIC)
 - 3 months of traditional inpatient 'blocks', but they are shortened to 2 week cycles
 - Next 9 months includes 7 half-day clinics, each in a different specialty

Pillar II = LIC

- Clinics are largely outpatient, but there are exceptions
 - For example, OB will probably have one week in the outpt clinic and one week in L&D
- Students are expected to follow a panel of their own patients
 - Includes following the patient into the inpatient setting or attending specialty visits
 - Studies show LIC students more involved in patient care.
- More student-directed with flexible study time and USMLE prep time
- USD, Harvard and UCSF all have incorporated LIC into their curricula

Evidence for LIC

- Evidence from Yankton (the model) and Harvard (the Yankton of the East) show:
 - LIC students have significantly more time with attending physicians
 - LIC students perform as well or better than traditionally trained peers on both knowledge and skills tests
 - LIC students have a higher satisfaction level and more confidence
 - LIC students are better able to retain information into their senior year

Hirsh, et al. Acad Medicine, May 2012



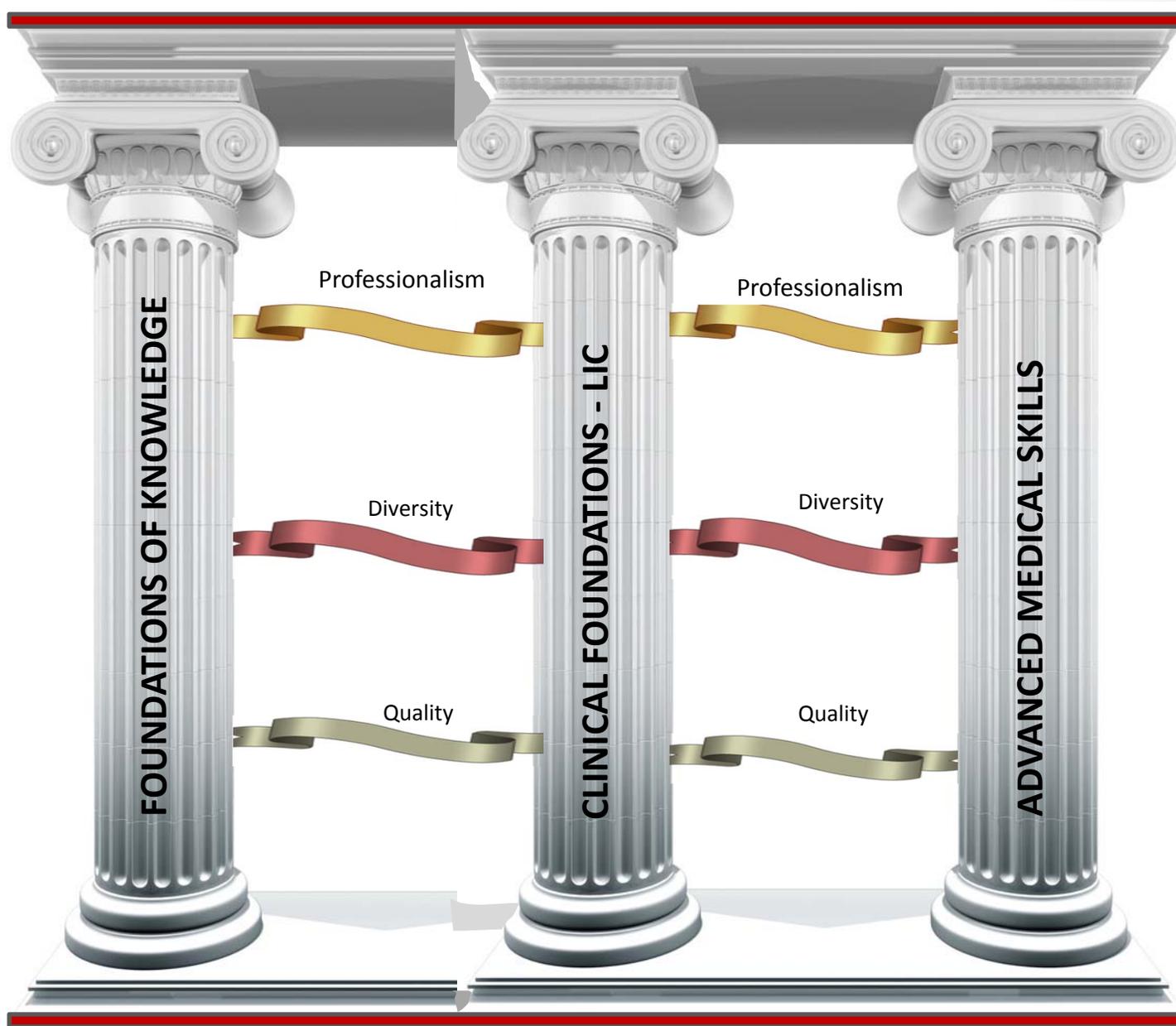
Pillar III: Advanced Medicine

- Deliberate revisiting of basic science tailored to clinical experience and discovery
- Deliberate revisiting of population science, hospital operations
- Some required rotations
- Room for electives and research
- ?Potential for early entry into residency

Threads that run through the Pillars Curriculum



- Professionalism
- Diversity
- Quality



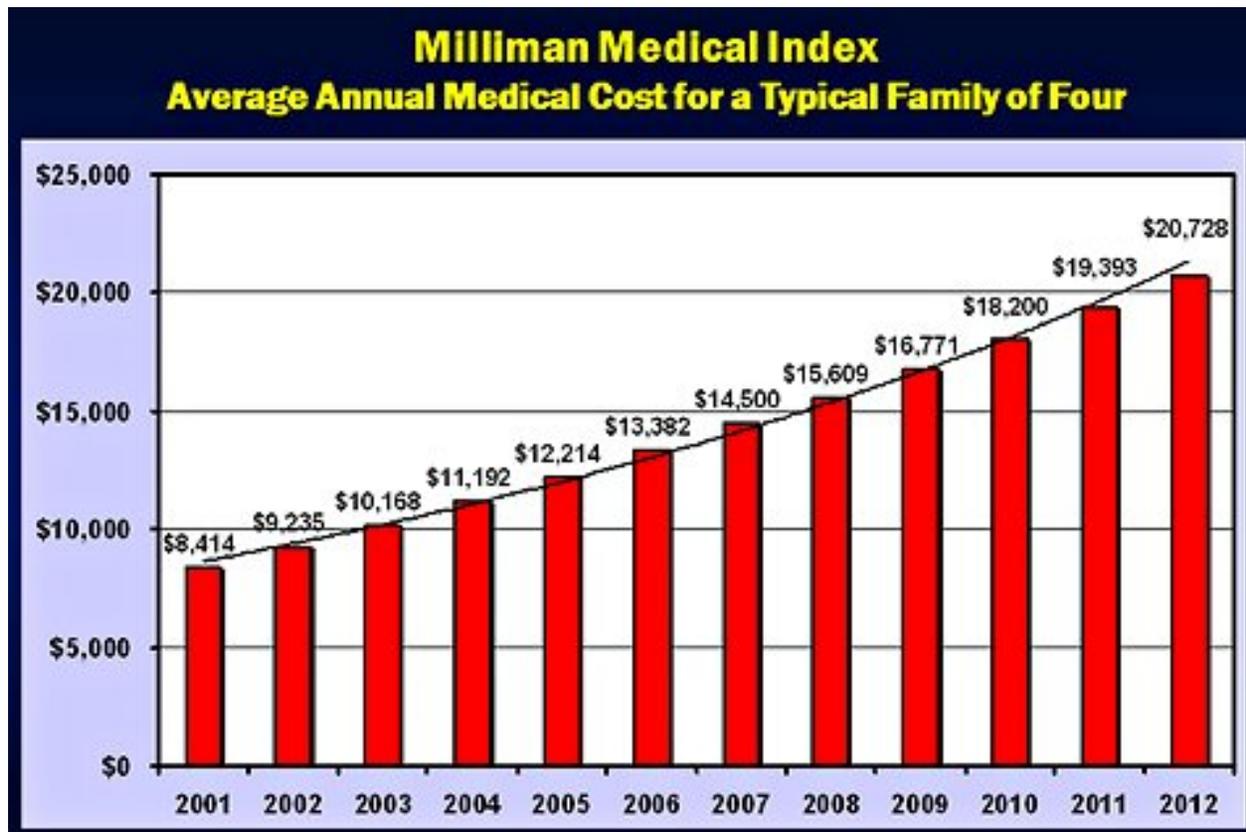
Students will practice in a changing world



- Patients are changing
- Practice structures are changing
- Payment models are changing



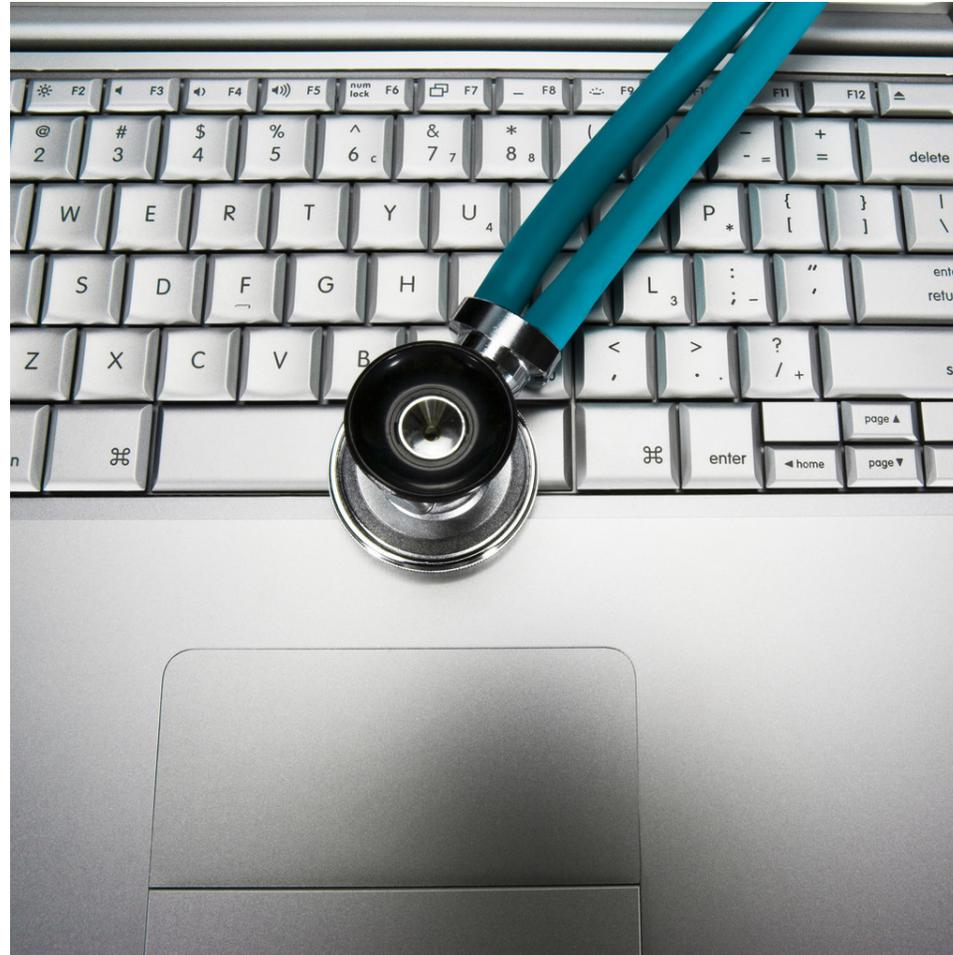




Health care cost growth in employer-based health insurance
 “has wiped out real income gains for an average U.S. family”
 from 1999 through 2009 Health Affairs: D.Auerbach and A.Kellerman

“Health care has come to chew up American household
 budgets like Pacman.” U. Reinhardt, NYT, May 25, 2012

Most Expensive Piece of Equipment in the Hospital



Metrics



Goal for SSOM

- Increase the number of physicians entering primary care
- Increase the number of physicians practicing in South Dakota
- Increase the number of physicians practicing in rural areas

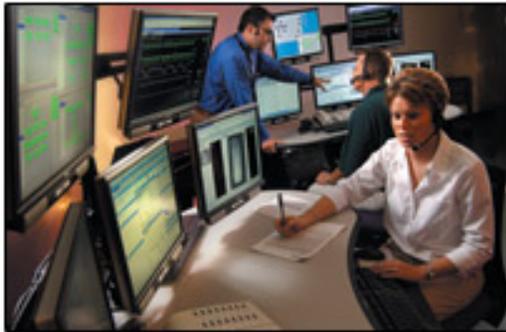
How big should the class be?

- In 2006, in response to concerns of a likely future physician shortage, the AAMC recommended a 30 percent increase in U.S. medical school enrollment by 2015.
 - This would be approximately 15 students for SSOM at USD
 - Four already approved, 11 remaining
- Reason for expansion
 - Pipeline to replace retirements
 - Increase workforce to accommodate growing and aging population
 - Reduce reliance on foreign medical graduates to fill physician workforce needs

Thoughts

- Expand the class size in SSOM to include the additional 11 students, but keep close track of value added
 - Proportion/number choosing primary care, ultimately practicing in South Dakota, ultimately practicing in rural areas
 - Continuous assessment of statewide needs
- Increase residency training opportunities in South Dakota
- Actively recruit former graduates back to South Dakota
 - Targeted campaign
- Actively tell the modern story of rural medicine and enhance support for rural medicine
 - Partner with State, hospitals, local chambers
 - Innovative care models building on e-infrastructure and including PA/NP workforce
 - Continue to develop the rural track and provide meaningful rural educational opportunities for students

Changes in Medicine



Nuesoft Xpress by Nuesoft Technologies 3.05

Options Setup Modules Support

Home Patient Ticket Appts Live Help Exit EMR Appts

Patient
 Find Patient: Jones, Allen | SSN: 000-01-1111 | Chart No: 135131 | Other ID: 9685561234
 Not Compliant - 26 years old Male (06/02/1980) | Home: (404) 351-0052

SOAP No: 100 | Ticket No: 428 | Appointment / DOS: 07/25/2006 9:45 AM | Billing Provider: Jacobson MD | Status: In Progress

Subjective: Group: [All] | Template: Upper Respiratory | Add

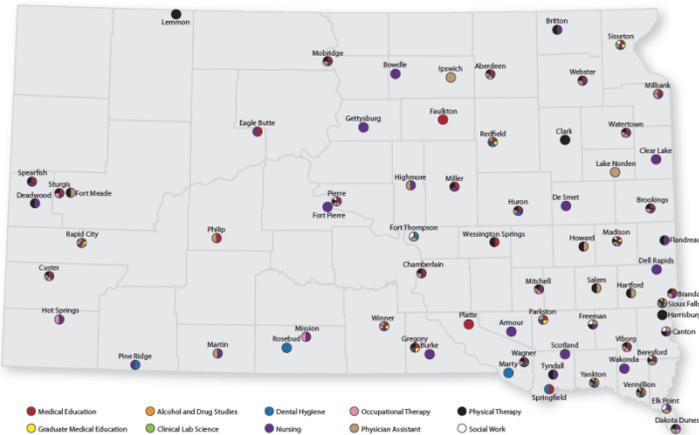
Objective: Group: Pt info | Template: pain Hx | Add

Assessment 1: 465.9 | 2: []

Plan	Units	Code	CPT	Provider	1	2	3	4	Diag	Facility	Mod 1	Mod 2	DOS
	1	Ibuprophen		James RN	2	3	4	465.9		Health Center			7/25/2006
	10	Zinc Gluconate	84630	Jacobson MD	2	3	4	465.9		Health Center			7/25/2006
	5	Vitamin C	82180	Jacobson MD	2	3	4	465.9		Health Center			7/25/2006

Back Save Find New View Lock Ticket Print

The University of South Dakota Health Affairs
Clinical Sites



GREAT LAKES & NORTH CENTRAL REGION

SOUTH DAKOTA

What you might like:

- ✓ Low Malpractice Costs
- ✓ Lots of Insurance Competition
- ✓ No State Income Tax



Community to consider:
Sioux Falls



Medscape 2012

- **Great Lakes and North Central Region Best:** South Dakota
- *“It's indeed possible to make a pretty compelling case for South Dakota. Just look at the numbers: fewer than 22 physicians per 10,000 residents, low malpractice costs, lots of insurance competition, and no state income tax. South Dakota is also in the lucrative North Central region, where physician incomes average more than \$247,000, according to the Medscape 2012 Physician Compensation Survey. South Dakota has the third-lowest unemployment rate in the country, and personal income grew 6.2% last year -- the fifth highest rate in the nation. “*

South Dakota

- #1 Best place to lose your wallet
 - Highest level of trust in people returning a lost wallet with money intact (Gallup 2011)
- #1 Best place to start a small business (Small Business & Entrepreneur Council, 2011)
- South Dakota was ranked the 9th fastest growing economy in Gross Domestic Product growth last year (5%), according to the U.S. Department of Commerce, 2012
- #1 Best place for entrepreneurs: 2012 Small Business and Entrepreneurship Council's Business Tax Index
- Top 10 best run states: Wall Street Wire
- 3rd lowest unemployment rate (April 2012, DOL)
- South Dakota has the lowest per capita total state tax rate in the United States
- Highest proportion of Facebook users; top 'wired' State

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