

Osteoporosis Troubles Nation

Osteoporosis is just beginning to gain the attention it deserves. It is the most common of all bone diseases, affecting millions of Americans and costing billions of dollars per year.

Dr. Anna Tosteson, associate professor of medicine and of community and family medicine, recently spoke about the economic impact of osteoporosis at the NIH Consensus Development Conference on Osteoporosis Prevention, Diagnosis and Therapy. The conference brought together national and international experts to present the latest research on osteoporosis.

Considering the economic implications of a disease is a relatively new subject for NIH conferences. However, with increased pressure for health care providers to maximize limited resources, a need arises for more informed research concerning the efficiency of prevention and management methods.

Costs are growing in conjunction with an increasing elderly population — at least four to six million women

have osteoporosis as well as one to two million men. “Because the elderly population is expected to double by the year 2025, if nothing is done, the number of persons affected by osteoporosis will dramatically increase,” reports Tosteson.

Projected costs for the disease are over \$45 billion per year within 25 years. “From a public health and policy perspective, these projections make it imperative that we understand the overall costs of osteoporosis and identify economically approaches to osteoporosis prevention and treatment.”

Osteoporosis is characterized by diminished bone strength with increased risk of fracture. It is the risk of fracture that makes the disease so threatening. The fractures most commonly associated with osteoporosis are those of the hip, spine and wrist. These fractures often result in

chronic pain, disability and even death.

The good news about osteoporosis is that it is largely preventable. Lifelong good nutrition promotes healthy bone growth. Adequate calcium and vitamin D intake are crucial to preserve bone mass throughout life, according to the NIH Consensus panel. Regular weight-bearing exercise can also aid in the prevention of osteoporosis and may reduce the risk of falls in older individuals.

A widely held misconception about osteoporosis is that it only affects postmenopausal white women. Although males and non-white women are at a somewhat reduced risk, the disease knows no racial or gender lines.

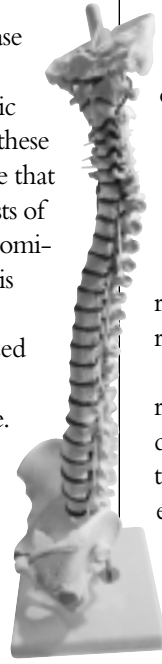
Tosteson outlined two forms of research for economic evaluation: cost-of-illness studies and cost-effectiveness studies. Cost-of-illness studies estimate the total economic burden of disease in a defined population. For osteoporosis the cost is \$16 billion per year and climbing, and, Tosteson adds, that is rather con-

servative since it doesn't consider morbidity costs such as effects on quality of life and costs of pain and suffering.

In contrast, cost-effectiveness analysis (CEA) assesses the relative value of alternative prevention and treatment interventions. “The rationale for CEA is that, with limited resources, each expenditure should provide a benefit worth its additional cost,” says Tosteson. Although a controversial method for establishing guidelines, these studies are valuable for highlighting the most efficient opportunities for prevention and treatment, she says. “Cost-effectiveness information is rarely or never used as the sole determinant for health care resource allocation decisions.”

Tosteson, a member of the Center for the Evaluative Clinical Sciences, is principal investigator on a study funded by the National Institute on Aging to assess outcomes of osteoporosis in both men and women.

The stories in this issue were written by Sara Connolly, Dartmouth College '01, DMS Communications intern.



Photography by J. D. Denham

DCMS Fuses Medicine and Law

Students traveled from as far away as Glens Falls, NY, to attend this year's Dartmouth Community Medical School. In its second year, the school's theme was “New Options, Hard Choices,” with topics ranging from genetic testing to engineering new body parts. Over 400 students registered for the series, and all were able to attend due to biweekly sessions.

New this year was the legal perspective. Introduced by former DCMS student and current Vermont Law School professor Susan Apel, the new angle allowed students to understand the legal ramifications of health care issues. Apel got the idea while taking last year's course. “Being a lawyer and law professor, at various points during the course, I began to think of legal issues that were connected to the subjects at hand,” she said. From there, Apel wrote a letter to DCMS director Dr. Donald St. Germain and helped set up a more interdisciplinary curriculum.

Distinguished faculty from DMS and Vermont Law School and New Hampshire officials served as Community Medical School “faculty.”

In the first session, “Infertility: The Thrill of Victory, The Agony of Defeat,” students proved their fervor. With budding regulations concerning the ethical aspects of assisted reproduction, Apel provided a cutting-edge account of the current laws. “On the very day I was to give my presentation on the disposition of frozen embryos, a brand new case was decided by a Massachusetts court,” said Apel. “But what I remember most is that even though the new case was less than 24 hours old, more than one member of the audience said, ‘Are you going to talk about that new Massachusetts case?’ Some of them told me that they had found the case on the Internet. What a savvy audience!”

Next year's DCMS session will concentrate on individual health. “Topics will have as general themes prevention, health maintenance and alternative therapies,” said St. Germain,

also professor of medicine and physiology. “We will be trying to cut through the controversies so that individuals can make better informed decisions about staying healthy.” He hopes to include the legal perspective again in the Spring 2001 course as well as some non-traditional viewpoints.

“New Options, Hard Choices” will be held this fall in Manchester, NH.

Patients or Consumers?

“The Right to Health Care” series continued to explore options for the future of American medicine with two contrasting approaches.

Nobel Peace Prize-winning cardiologist Dr. Bernard Lown gave the second talk, “The Art of Healing and the Crises in Health Care.” Combining comedy with passion, Lown urged reevaluation of current health care. “Medicine has lost its way, if not its soul.” He criticized managed care, expressed incredulity at the cost of prescription drugs and mocked HMOs, saying HMO should stand for “Healthy Members Only.”

Attacking managed care, he discussed the widespread public indifference to the corporate takeovers of HMOs and health plans. “Nobody stood in the way of the massive transformation in the last decade.” Lown rebuked the claim of managed care providers that patients receive optimum care under their system, calling it “sheer fantasy.”

The uninsured US population has risen to 44 million and now comprises 16 percent of America, according to Lown. “This is a national disgrace.” The cost of health care is on the rise as well. By 1998 health care costs reached over \$1 trillion a year and will double by 2008, which Lown says, can be attributed to a 2000 percent increase in hospital administration since 1970. While the percentage of doctors has barely risen, the number of hospital pencil pushers is soaring.”

He urged physicians to spend more time with their patients, which can

be cost-effective and lead to greater patient satisfaction. “A patient's chief complaint is generally not the actual problem. It's like judging a movie based on the admission ticket. Treating the chief complaint leads one to prescribe the wrong medication, numerous referrals, and becomes much more expensive.”

Lown described a grassroots backlash in Massachusetts against managed care: the Ad Hoc Committee to Defend Health Care. The group held a mock “Boston Tea Party,” where they dumped crates of paper and garbage, along with \$126 billion in paper money, into Boston Harbor to expose administrative costs and overhead. (An underwater net rescued the trash.) “We hope that Massachusetts will be a laboratory of change for the rest of the United States,” Lown said.

The third speaker in the series was Regina Herzlinger, Harvard Business School professor and author of the best-selling book *Market Driven Health Care*. Providing a more business-conscious approach to health care, her response to whether the US should have universal health care is unequivocally “Of course!” But rather than use the more humanistic approach of Lown, Herzlinger prefers

a consumer-driven model, where the government gives money to the people and the people buy their own health care. Patients are “consumers” under this model since they no longer will have to be “patient” and wait for quality care, said Herzlinger.

Denouncing the single-payer model as a system where people “wait on waiting lists to get onto other waiting lists,” Herzlinger asserted that under single-payer models like those in England and Canada there is no convenience and the infrastructure is crumbling. She expressed disdain for the current managed care system, saying it reflects a lack of access and convenience. Her solution is a consumer-driven model. Especially with emerging technology and a burgeoning Internet, such a model is perfect for the individual to administer “self-care,” she said.

Herzlinger proposed a scenario of “focused factories” that concentrate on servicing the consumer, which, she hopes, will lead to a higher quality, lower cost system. These “factories” will be targeted at certain diseases, such as diabetes. She said she doesn't think care will become fragmented since the factories will have several specialists working together.

Dartmouth Medical School Research Awards

Due to an editing error, the May Digest reported the wrong amounts for DMS research awards through March, in advertently printing total Dartmouth proposals. Through April 2000, DMS research awards totaled \$53,633,938, up from \$41,803,738 for the same period in 1999. DMS received the following new and competing awards for April:

Anatomy			
R. Swenson	NIH		Pilot Study of Spinal Manipulation for Chronic Neck Pain
Biochemistry			
L. Myers	Human Frontier Science Program		Mediator of Transcriptional Regulation
Genetics			
J. Dunlap	Air Force Scientific Research Office		Meeting of the Society for Research on Biological Rhythms
Medicine			
C. Brinckerhoff	Scleroderma Research Fdn. R.G.K. Fdn.		Genetic Analysis of a Polymorphism in Scleroderma Identification of Proteins Binding to a Single Nucleotide Polymorphism in the Collagenase-1 Promoter
R. Perez	Sugen, Inc.		Phase III Study of 5FU/Leucovorin with or without Concomitant SU5416 in Metastatic Colorectal Cancer
Microbiology			
G. O'Toole	Microbia Inc		Drug Resistance and Gene Expression in Biofilms
Pharmacology & Toxicology			
K. Dragnev	Amgen, Inc.		A Dose-Escalation Trial of the Combination of Docetaxel, Gemcitabine and Filgrastim
S. Freemantle	Lance Armstrong Fdn.		Retinoid-mediated Differentiation of Germ Cell Tumors
J. Hamilton	NI Environmental Health Sciences		Toxic Metals in the Northeast
Physiology			
J. Daubenspeck	Creare, Inc.		Regulator for Improved Respiratory Protection with SCBAs
Psychiatry			
M. Hegel	Biovail Laboratories, Inc.		Double-Blind, Fixed-Dose Study of Buspar-ER in GAD
Surgery			
P. Hoopes	Etex Corporation		Bone Matrix Material for Sustained Delivery of Chemotherapy