PRACTICAL POINTERS

FOR

PRIMARY CARE

ABSTRACTED MONTHLY FROM THE JOURNALS

DECEMBER 2007

JAMA, NEJM, BMJ, LANCET
ARCHIVES INTERNAL MEDICINE
ANNALS INTERNAL MEDICINE
www.practicalpointers.org

PUBLISHED BY PRACTICAL POINTERS, INC.

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This document is divided into two parts

1) The **HIGHLIGHTS AND *EDITORIAL COMMENTS* SECTION**

HIGHLIGHTS condenses the contents of studies, and allows a quick review of pertinent points of each article.

EDITORIAL COMMENTS *are the editor's assessments of the clinical practicality of articles based on his long-term review of the current literature and his 20-year publication of Practical Pointers.*

2) The main **ABSTRACTS** section is designed as a reference. It presents structured summaries of the contents of articles in much more detail.

I hope you will find *Practical Pointers* interesting and helpful. The complete content of all issues for the past 6 years can be accessed at www.practicalpointers.org

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Editor/Publisher.

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HIGHLIGHTS AND *EDITORIAL COMMENTS* DECEMBER 2007

"Medical Professionalism In The United States Is In A Crisis."

[12-1] MEDICAL PROFESSIONALISM IN A COMMERCIALIZED HEALTH CARE MARKET.

This editorial comments:

Medical professionalism in the United States is in a crisis, just as serious as the crisis facing the health care system. Medical professionalism cannot survive in the current commercialized health care market.

The "soul" of the profession is eroding even while its scientific and technical authority grows stronger. Ironically, medical science and technology are flourishing even as the moral foundations of the medical profession lose their influence on the behavior of physicians

Ideology (the most important part of medical professionalism) is now at risk. The ethical foundations of medicine are endangered. This includes the commitment of physicians to put the needs of patients ahead of personal gain; to deal with patients honestly, competently, and compassionately, and to avoid conflicts of interest that could undermine public trust in the altruism of medicine.

The undermining of professional values is an inevitable result of change in the scientific, economic, legal, and social environment in which medicine is now being practiced. Growing commercialism is contributing to a decline in professionalism. Health care is a 2-trillion dollar a year industry largely shaped by the entry and growth of private investor-owned businesses that sell health insurance and deliver medical care with the primary concern of maximizing income.

In no other health care system in the world do investors and business considerations play such an important role. In no other country are the organizations that provide medical care so driven by income and profit-generating considerations. This has played a major part in eroding the ethical commitments of physicians. Many physicians now accept the view that medical practice is in essence a business. In business, increased profit is the primary goal.

The current focus on money-making, and the seductions of financial rewards have changed the climate of US medical practice at the expense of professional altruism and the moral commitment to patients.

Physicians should not accept the industrialization of medical care, but should work instead toward major reforms that will restore the health care system to its proper role as a social service that society provides to all.

The editor of Practical Pointers presents a strong rebuttal.

Please read the entire abstract.

In Adults Over Age 60, Low Fitness Predicted Higher Risk Of All-Cause Mortality, Independent Of BMI Or Abdominal Adiposity.

[12-2] CARDIORESPIRATORY FITNESS AND ADIPOSITY AS MORTALITY PREDICTORS IN OLDER AMERICANS

Levels of physical activity and functional aerobic capacity steadily decline with age. Obesity tends to increase with age. The vast majority of US adults do not engage in regular physical activity. A high percentage of adults have levels of functional capacity that are low enough to increase risk of death. .

Prospective studies provide convincing evidence that obesity and physical inactivity each can produce excess mortality risk in middle-aged adults.

This study determined the association between fitness, adiposity, and mortality in older adults.

Followed a cohort of over 2600 adults over age 60 (mean age = 64; 80% men). All completed a baseline health examination during 1979-2001. Fitness was assessed by a maximal exercise test. Adiposity was assessed by body mass index (**BMI**), and waist circumference.

Grouped fitness into a binary variable: low fitness = the lowest 20% of treadmill time; all others as physically fit. (Other studies in elderly participants have shown that low fitness is, by this definition, an independent predictor of morbidity and mortality.)

"Our primary finding is that both fitness and BMI were strong and independent predictors of all-cause mortality in adults 60 years or older."

Fitness had a strong inverse association with mortality. In most instances, death rates for those with higher fitness were less than half of rates for the unfit.

Both BMI and waist circumference were associated with mortality risk.

Higher levels of fitness were inversely related to all-cause mortality in both normal weight and overweight BMI subgroups, and in those with normal waist circumference and in those with abdominal obesity.

There was a "J" shaped association between mortality and BMI. The death rate for 1000 person-years was the lowest in the overweight group (BMI 25-30) and highest in the very obese group (BMI > 35). This is consistent with previous reports that find no evidence of increased mortality risk in mildly overweight persons over age 65 after adjusting for self-reported physical activity.

In unfit persons, the mortality was "J" shaped. The lowest risk was in those with BMI 25-30. It was higher in those with BMI 30-35 and in those with BMI 18-25. "This supports the hypothesis that moderate or high fitness levels favorably influence mortality risk across categories of body composition. "

Normal weight individuals had greater longevity only if they were physically fit. Obese individuals who were fit did not have increased mortality."

"Our results support the hypothesis that higher levels of fitness can reduce the risk of premature

death." "We found that fitness is a strong predictor of overall death among older adults, independent of body composition and other mortality risk factors."

Conclusions:

In adults over age 60, low fitness predicted higher risk of all-cause mortality, independent of overall or abdominal adiposity.

"Fit individuals had greater longevity than unfit individuals regardless of their body composition."

"It maybe possible to reduce all-cause death rates among older adults, including those who are obese by promoting regular physical activity." Walking 30 minutes a daily will keep most individuals out to the low-fitness category.

"Clinicians should consider the importance of preserving functional capacity by recommending regular physical activity for older individuals, normal weight and overweight alike."

I believe these results can be translated into primary care.

A. Maintain fitness throughout life.

B. Maintain a health BMI and abdominal girth throughout life.

C. As you age, aim to maintain fitness and control your BMI and abdominal girth. Apparently it may not be detrimental if you gain somewhat above a BMI of 25.

The study did not determine that becoming more fit as you age, even if you are obese, would increase longevity. I believe it reasonable to consider that it will, even if it does not lead to weight loss.

Individualism Is The Key.

[12-3] RATE CONTROL IN PERMANENT ATRIAL FIBRILLATION

Rate-control drugs aim to reduce heart rate at rest and during exercise, without causing excessive nocturnal bradycardia. The ultimate aim is to improve symptoms and exercise tolerance, and to prevent cardiomyopathy induced by tachycardia.

In June 2006, NICE (The UK National Institute for Health and Clinical Excellence) published new guidelines for control of heart rate in patients with chronic AF. As preferred initial monotherapy, they recommend that beta-blockers or rate-limiting calcium antagonists should be used instead of digoxin.

The American Heart Association and others also revised guidelines recommending beta-blockers or calcium-blockers alone to control heart rate.

Overall, use of digoxin has declined.

This literature review comments on the pro and con evidence underlying this fundamental change in practice.

The editorialists' summary opinion:

1) Little evidence exists that monotherapy with beta-blockers or calcium blockers improves exercise tolerance in patients with chronic AF.

2) There is clear evidence that when beta-blockers are used alone, exercise capacity may worsen, especially in patients with history of heart failure.

3) Little evidence exists that monotherapy with beta-blockers or calcium-blockers improves heart rate at rest or during exercise as compared with digoxin alone.

4) Beneficial effects on heart rate variability, together with improved exercise tolerance have been shown only with combined digoxin + beta-blocker, or combined digoxin + calcium blocker.

5) "We believe that the combination of digoxin and a beta-blocker, or digoxin and a calcium blocker, should be recommended as first line management. We emphasize, it is safest to start treatment with digoxin first."

I believe this translates into an important application in primary care practice.

Rate control, rather than rhythm control (reversal of AF to normal sinus rhythm) is the preferred and practical approach in primary care practice.

Follow-up of rate-control therapy must be meticulous. Start low and go slow.

This is a good illustration of the dilemmas primary care clinicians face when the available studies conflict and do not provide clear directions. Individualism is the key.

I believe a reasonable approach would be to start with a low-dose calcium blocker, and add low dose digoxin according to response. I would prescribe no more than 0.125 mg of digoxin.

"We Need A Comprehensive National Strategy To Deal With The Problem"

[12-4] CHILDHOOD BODY-MASS INDEX AND RISK OF CORONARY HEART DISEASE IN ADULTHOOD

This study investigated the association between BMI in childhood and CHD in adulthood.

Followed a cohort of children (n = over 276 000) in Denmark. All underwent mandatory annual health examinations at school. Determined the association between BMI in childhood (age 7 through 13), and CHD in adulthood (25 years and older). Follow-up began at age 25.

In over 5 million person-years of follow-up, over 11 000 men and over 4000 women received a diagnosis of CHD or died of CHD as adults.

Adjusted hazard ratio for risk of a CHD event in adulthood increased continuously and linearly for boys for each 1-unit increase in z score: Hazard ratio

7-year old	1. 05
10-year old	1.11
13-year old	1.17

Increased risk was also linear for girls, but less pronounced.

A 13-year old boy who weighs 11 kg more than average will have an estimated 33% increase in the probability of a CHD event before age 60.

Currently, children are typically classified as being at risk only if their BMI values are above cut points

such as the 85th and 95th percentile. “Our results do not support this approach. The linearity of the associations we identified between childhood BMI and adult CHD implies that even a surprisingly small amount of weight gain will increase risk of CHD.”

Since the magnitude of the risk was moderate for 7-year olds, and increased dramatically by the age 13, there is a possibility that intervention during this period could reduce risk of future CHD.

Conclusion: Higher BMI during childhood is associated with an increased risk of CHD in adulthood. Risk increases with age of the child, and with greater increases in BMI.

This is another good example that, as risk factors increase, risk of disease increases linearly with no cut point.

The article reminded me of reports of post-mortem examinations of young adults during the Korean War. Atherosclerotic changes were already evident in the coronary arteries.

Atherosclerosis begins in childhood

An editorialist comments:

Pediatric obesity may shorter life expectancy by 2 to 5 years—an effect equal to that of all cancers combined.

If we don’t take steps to reverse course, the children of each successive generation seem destined to be fatter and sicker than their parents.

HbAic As A Screening Test?

[12-5] SCREENING FOR DIABETES AND PRE-DIABETES

Impaired glucose tolerance increases the risk of cardiovascular disease by about 60%; impaired fasting glucose by about 30%. Progression to DM-2 can be prevented or slowed by diet, exercise, and several drugs that are used to treat diabetes.

Screening (testing asymptomatic patients) for, and treating, impaired glucose tolerance would be cost effective, particularly when life-style interventions are used. Screening has been inhibited by uncertainty about which test to use. There is no perfect screening test. A fasting plasma glucose will detect diabetes and impaired fasting glucose. It will miss impaired glucose tolerance. A random plasma glucose test lacks sensitivity and specificity. A glucose tolerance test is a burden.

The author of the Assessment Report suggests that more people would be tested and identified at risk if HbA1c was used rather than glucose tests. He suggests a cut-off HbA1c of 5.9% to identify most pre-diabetes. The gain from this more convenient test and consequent increased uptake by patients could outweigh any disadvantages of the test.

He suggests that screening be in two stages: 1) Selection of persons at increased risk (age, BMI of waist circumference, hypertension, ethnic origin, socially disadvantaged groups, family history, and dyslipidemia;

2) blood test such as HbA1c.

This is the first serious recommendation to use HbA1c as a screening test. I believe it has merit.

Screening—Applying A Test In Asymptomatic Patients for CAS Is A No-No

[12-6] SCREENINGS FOR CAROTID ARTERY STENOSIS: U. S. Preventive Services Task Force Recommendations.

` Recommendation: Do *not* screen *asymptomatic* patients for CAS with ultrasound or other screening tests.

This is a grade D recommendation. Screening asymptomatic patients for CAS has no net benefit. Harms outweigh benefits.

This does not preclude screening for other risk factors (dyslipidemia, hypertension, impaired glucose tolerance, smoking, heart disease).

The High Technology Assessment of the UK elaborates. See full abstract of the Internet address.

People with diabetes detected by screening are at higher risk of macro-vascular disease, but a comparatively low risk for micro-vascular disease. This emphasizes the need to reduce risk factors for cardiovascular disease other than risks due to elevated glucose levels. The importance of glucose control in prevention seems to be waning.

Screening for pre-diabetes will allow earlier intervention.

Relatively Few Serious Adverse Drug Events Among Older Patients Were Caused By Beers Criteria Medications. Most Were Due To 1) Anticoagulants, 2) Anti-Diabetes Medications, and 3) Digoxin and Other Narrow Therapeutic Agents.

[12-7] MEDICATION USE LEADING TO EMERGENCY DEPARTMENT VISITS FOR ADVERSE DRUG EVENTS IN OLDER ADULTS.

Most physicians recognize that prescribing to older patients requires special consideration. Few physicians are familiar with the most commonly used measure of medication-appropriateness for older patients—the Beers criteria.[1] These criteria are consensus-based. They list medications identified as potentially inappropriate for use in older adults. They have been updated in 2003 to apply to all persons age 65 and older, and include medications judged to be ineffective or to pose unnecessarily high risk.

This study used nationally representative public heath surveillance data to estimate the number of emergency department (ED) visits for adverse drug events (ADEs) involving Beers criteria drugs, and compared the number with that of ADEs involving other drugs. National estimates of ED visits for ADEs were based on data from 58 hospitals participating in the National Electronic Injury Surveillance System, a nationally representative sample of hospitals in the US.

Defined any adverse drug effect as an incident ED visit by a patient age 65 or over in 2004-2005. The treating physician explicitly attributed the event to the use of the drug.

Over 4400 ADEs were reported from an estimated 177 000 ED visits. (About 2.5% of visits). Of the 4400, only 3.6% involved Beers criteria medications categorized as always potentially inappropriate. An additional 5% involved medications categorized as potentially inappropriate under certain circumstances. Among the medications the Beers criteria considered to be always potentially inappropriate, more than half of the ED visits were for anticholinergics, antihistamines, nitrofurantoin (the majority allergic reactions), or propoxyphene.

Of the 14 medications implicated in 1% or more of estimated ED visits for adverse drug events, digoxin was the only medication included in the Beers criteria. Nine of the 10 most commonly implicated medications were categorized in 3 classes;

1) Anticoagulants [warfarin 17%], or antiplatelet agents aspirin, and clopidogrel)

2) Antidiabetes agents (insulin [13%], metformin, glyburide, glipizide)

3) Narrow therapeutic index agents (digoxin [3%], phenytoin)

(Together these 3 classes accounted for about half of all ED visits for ADEs. Most ADEs were dose-related. ED visits for adverse events due to insulin, warfarin, and digoxin were 35 times greater than for medications considered to be always potentially inappropriate by the Beers criteria.)

At least one medication considered to be always potentially inappropriate was prescribed in an estimated 10% of outpatient office visits during this time. Insulin, warfarin and digoxin were prescribed 2.6% of the time. All types of oral anticoagulants or antiplatelet agents, antidiabetes agents, and narrow therapeutic index agents were prescribed in 9%.

Relatively few ED visits for ADEs among older patients were caused by Beers criteria medications considered to be always potentially inappropriate even though these medications were prescribed frequently in outpatient care visits. Fewer than 10% of ED visits for ADEs were attributable to Beers criteria medications. Nine out of ten visits were due to the 3 classes of drugs indicated above. (These medications are so important therapeutically, they should not be labeled as “inappropriate” for use in older patients.)

Conclusion: Compared with other medications, Beers criteria medications caused low numbers of, and few risks for, ED visits for adverse drug events. Performance interventions targeting warfarin, insulin, and digoxin use could prevent more ED visits for adverse events.

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1 *The list is available on GOOGLE Go to BEERS CRITERIA*

The Beers criteria list is based on opinions of a panel of experts, not on any other form of evidence-based medicine. The list gives no leeway for individualization. The age cut-point is 65. The criteria are an authoritative pronouncement—no room for exceptions

Extra care is required in determining drug doses in the elderly. As their kidney and liver function declines, usually prescribed doses of drugs may become more toxic.

I believe warfarin is absolutely contraindicated in the many elderly patients who may be a little forgetful, may not be able to adequately comply with prothrombin time determinations, and may take one or more drugs (over-the-counter, as well as prescribed) which interfere wit the anticoagulant activity. Warfarin requires strict oversight, preferably in an anticoagulation clinic.

Digoxin is no longer the essential drug it was in the past. It can be prescribed in low doses, if at all. Other effective drugs are available.

"An Estimated 12% Of All Types Of Type 2 Diabetes In The United States May Be Attributable To Smoking"

[12-8] ACTIVE SMOKING AND THE RISK OF TYPE 2 DIABETES: A Systematic Review and Meta-analysis

This study (a systematic review with meta-analysis of prospective cohort studies) assessed the association.

A literature search included studies if they reported fasting glucose, impaired glucose tolerance, or DM2 in relation to active smoking status at baseline, had a cohort design, and excluded subjects with DM2 at baseline.

The preferred reference group was "never smokers".

The final analysis included 25 studies (over 1 million study participants; over 45 000 incident cases of DM2). Among the 25 selected studies, all except one found an association between active smoking and DM2.

The pooled relative risk estimated from these studies (DM2 in active smokers vs never smokers) = 1.5

"There is an extensive body of literature reporting on the association between active cigarette smoking and the incidence of diabetes." "We conclude that the relevant question should no longer be whether this association exists, but rather whether this established association is causal." Observational studies cannot prove causality.

There is theoretical biological plausibility for causality. Some studies, but not all, report that smoking may lead to insulin resistance or inadequate compensatory insulin secretion responses. Smoking has a clinically significant effect on both oral and intravenous glucose tolerance tests.

Smoking is often associated with other unhealthy behaviors that favor weight gain

The estimates by the article, and by the conventional population-attributable risk formula, an estimated 12% of all types of type 2 diabetes in the United States may be attributable to smoking.

Recommendations for type 2 diabetes prevention should incorporate smoking avoidance.

An estimated 91% of all type 2 diabetes is preventable by smoking prevention and lifestyle modifications.

An accompanying editorial comments that the relationship between smoking and DM2 has been generally underrecognized. I do not recall reading about it before. It seems likely that smoking has an adverse effect on glucose control in patients with DM2—another reason to recommend cessation. Will discontinuation improve control?

Neither An Antibiotic Nor A Topical Steroid Alone, Or In Combination, Was Effective

[12-9] ANTIBIOTICS AND TOPICAL NASAL STEROIDS FOR TREATMENT OF ACUTE MAXILLARY SINUSITIS: A Randomized Controlled Trial

Symptoms consistent with acute sinusitis are commonly encountered in primary care practice. They are due to a broad group of usually undefined etiologies at the time of original treatment decision.

Of the cases in which acute maxillary sinusitis is suspected on presentation, few are reliably confirmed by the physician.

Despite clinical uncertainty as to a bacterial cause of symptoms of acute sinusitis in everyday practice, almost all patients receive antibiotics.[1]

Intranasal steroids have anti-inflammatory as well as potential decongestant actions. It is reasonable to believe they will benefit acute sinusitis by improving osteal patency and facilitating drainage.

Studies and reviews of the benefit of both antibiotics and nasal steroids have been conflicting.

This double-blind, randomized, placebo controlled trial followed 240 adults with acute maxillary sinusitis seen in primary care practices. Symptoms had been present on average for a week before the initial consultation. All had 2 or more diagnostic criteria typical of bacterial sinusitis.

Randomized to:

1) Amoxicillin 500 mg 3 times daily for 7 days + placebo inhalant, or

2) Budesonide 200 ug of in each nostril once daily for 10 days + placebo antibiotic, or

3) Both active drugs, or

4) Double placebo.

Proportion of patients with symptoms lasting 10 or more days (%):

Amoxicillin	29
No amoxicillin	34
Budesonide	31
No budesonide	31

(Differences not statistically significant)

In the antibiotic vs placebo group, and the budesonide vs placebo group, median total symptom severity scores declined similarly and linearly over 10 days until almost all 4 groups were without serious symptoms at 10 days.

Conclusion: “Our main conclusions are that among patients with the typical features of acute bacterial sinusitis, neither an antibiotic nor a topical steroid, alone or in combination , is effective in altering the symptom severity, the duration, or the natural history of the condition.”

This parallels studies reporting no improvement from antibiotics in patient with acute bronchitis and sore throat.

The investigators mentioned that they had difficulty recruiting subjects for the study because most patients demanded antibiotic treatment. When accepting or rejecting treatment for themselves, I believe patients may not respond to concerns of development of antibiotic resistance in the general population. They may respond to information about individual adverse effects of antibiotics and to costs.

Primary care clinicians' decision to prescribe or not to prescribe antibiotics for these patients can be difficult. Most patients are convinced antibiotics will help them. I believe most primary care clinicians would prescribe an antibiotic for a patient who has fever and appears very ill. For the rest, a delayed prescription would be appropriate. Many patients will begin to improve over several days and will not have the prescription filled.

Of course, symptomatic therapy should be encouraged.

I doubt that nasal budesonide given for 10 days is harmful. In some patients, it may be as effective in relieving symptoms as other topical medications

Patents with Non-Focal Attacks Are At Higher Risk of Stroke And Dementia

[12-10] TRANSIENT NEUROLOGICAL ATTACKS: INCIDENCE AND PROGNOSIS

Transient neurological attacks (**TNAs**) are attacks with temporary neurological symptoms (commonly 2 to 15 minutes; maximum 24 hours). This article considers 3 types of TNA: 1) Focal (otherwise termed transient ischemic attack—**TIA**); 2) Non-focal TNA; and 3) Mixed focal and non-focal TNA.

This prospective population-based cohort study followed over 6000 community-dwelling residents of Rotterdam. All were over age 55 at baseline (1990-1993; mean age = 68; 2/3 women). At baseline, none had a history of stroke, myocardial infarction, or dementia. After enrollment, all were continuously monitored for stroke, TNAs, ischemic heart disease, dementia, and death.

TNAs were defined as attacks of sudden neurological symptoms that completely resolved within 24 hours:

A. A focal TNA if only focal brain symptoms were reported: eg, hemiparesis, hemihypesthesia, dysphasia/dysarthria, amaurosis fugax, hemianopsia, diplopia, or vertigo.

B. A non-focal TNA if only non-focal symptoms were reported.

Non-focal symptoms were defined as broadly as possible. Symptoms had to set in suddenly, and clear up within seconds to a maximum of 24 hours. They included one or more of: decreased consciousness, unconsciousness, confusion, amnesia, unsteadiness, nonrotatory dizziness, positive visual symptoms, paresthesias, and bilateral weakness.

C. Mixed if both were reported for one and the same attack.

"In this large, prospective population-based study, TNAs with non-focal symptoms were almost as frequent as focal TNAs, and had an equally unfavorable overall subsequent clinical course."

TNAs with combined focal and non-focal symptoms had a particularly bad prognosis, with a higher risk of stroke, ischemic heart disease, vascular dementia, and vascular death.

"Our findings challenge the strong, but unfounded, convictions that non-focal TNAs are harmless

Conclusion: Compared with persons without TNA, patients with focal TNA (TIA) had a higher risk of stroke. Patient with non-focal TNA had a higher risk of stroke and dementia. Patients with mixed TNA had a higher risk of stroke, dementia, ischemic heart disease, and vascular death.

This new expansion of brain- ischemic attacks may take getting used to; TIA is now included in TNA, and TNA includes both focal and non-focal symptoms. We may end up keeping the term TIA and simply adding the terms non-focal TIA and mixed TIA to the list. It may be difficult for us to change our terminology to a new term (TNA). I see no harm in continuing to use the term TIA if we fully understand there are several types of transient brain ischemia.

I suspect the majority of non-focal symptoms would <u>not</u> be secondary to brain ischemia. Would it be appropriate for primary care clinicians to immediately raise red flags and hasten the patient through extensive study, anxiety, and inconvenience? I believe the answer should be individualized, and should depend on individual (informed) preference.

When an elderly patient presents with vague symptoms suggestive of a non-focal TNA, I believe this would open an excellent opportunity for primary care clinicians to immediately review cardiovascular risk factors with the patient. Immediate treatment as with a TIA might be started (anticoagulation; aspirin and others), BP control, lipid control. Then go on to more extensive study on a non-emergency basis if the informed patients agrees.

ABSTRACTS DECEMBER 2007

"Medical Professionalism In The United States Is In A Crisis."

[12-1] MEDICAL PROFESSIONALISM IN A COMMERCIALIZED HEALTH CARE MARKET.

What is a profession? What role does it play in modern society?

A profession is highly specialized and grounded in a body of knowledge and skills. It is given special status in the labor force. Its members are certified through a formal educational program controlled by the profession. Qualified members are granted exclusive jurisdiction and a sheltered position in the labor market. Professionals have an ideology that assigns a higher priority to doing useful and needed work than to economic rewards. The ideology focuses more on the quality and social benefits of work than its profitability. [1]

This editorialist comments:

Medical professionalism in the United States is in a crisis, just as serious as the crisis facing the health care system." "Medical professionalism cannot survive in the current commercialized health care market.

Medical work is totally unsuited for control by the market, or by government, and therefore the practice of medicine can be considered properly only as a profession.

The "soul" of the profession is eroding even while its scientific and technical authority grows stronger.

Ironically, medical science and technology are flourishing even as the moral foundations of the medical profession lose their influence on the behavior of physicians.

Ideology (the most important part of medical professionalism) is now at risk. The ethical foundations of medicine are endangered. This includes the commitment of physicians to put the needs of patients ahead of personal gain; to deal with patients honestly, competently, and compassionately, and to avoid conflicts of interest that could undermine public trust in the altruism of medicine.

The undermining of professional values is an inevitable result of change in the scientific, economic, legal, and social environment in which medicine is now being practiced. Growing commercialism is contributing to a decline in professionalism. Health care is a 2-trillion dollar a year industry largely shaped by the entry and growth of private investor-owned businesses that sell health insurance and deliver medical care with the primary concern of maximizing income.

In no other health care system in the world do investors and business considerations play such an important role. In no other country are the organizations that provide medical care so driven by income and profit-generating considerations. This has played a major part in eroding the ethical commitments of physicians. Many physicians now accept the view that medical practice is in essence a business. In business, increased profit is the primary goal.

Medical professionalism requires that physicians give even greater primacy to the medical needs of patients, and to the public health of the society in which their patients live.

The current focus on money-making, and the seductions of financial rewards have changed the climate of US medical practice at the expense of professional altruism and the moral commitment to patients.

The growth of technology and specialization is attracting more physicians into specialties and away from primary care. Specialization is not necessarily incompatible with ethical professional practice, but it often reduces the opportunities for personal interaction between physician and patient. This weakens the bond between physician and patient. Specialists may focus on the narrow medical problem exclusively, and be unmindful of their professional obligations to the whole person they are serving.

Physicians should not accept the industrialization of medical care, but should work instead toward major reforms that will restore the health care system to its proper role as a social service that society provides to all.

JAMA December 12, 2007; 298: 2668-70 "Commentary" by Arnold S Relman, Harvard Medical School, Boston Mass.

1 Friedson E. *Professionalism: The Third Logic* University of Chicago Press, 2001

Comments by the editor of *Practical Pointers*:

I believe the editorialist grossly overstates his case. Indeed, I felt somewhat incensed.

Do physicians put personal gain above patient needs?

Do physicians deal with patients dishonestly?

Are physicians incompetent?

Do they lack compassion?

Do they focus on money making at the expense of altruism and commitment to patients?

Do they consider medical practice to be essentially a business?

I do not think so!

And what about all the other professional healthcare workers?

I do not believe that the primary motive of physicians is to make money. Certainly an adequate income is needed to pay off student debt, provide a safe and comfortable home, educate children, and save for retirement. Most physicians (but not all) do make more income than average. Do they not deserve to, considering the years of expense and work to achieve a medical license? Has not our capitalistic system always rewarded those who work hard and achieve?

Solo practitioners and physicians in small groups are perforce business persons. They have to generate enough income to cover operating expenses, hire competent help, and to pay for continuing education. Has not medical work been always market driven to some extent? In a capitalistic system, medicine remains partially a market-driven business.

I do not believe that physicians place monetary interests ahead of patients' welfare. Admittedly, many physicians do not have much opportunity to develop an empathetic attachment with patients (radiologists, pathologists, anesthesiologists, surgeons who provide short-term service). It takes time to develop an empathetic connection. But, is not the development and application of the high skills of our surgical teams to cure or alleviate disease in itself an exceptionally high expression of

caring? Fortunately, primary care clinicians do have greater opportunity to connect with patients. I believe most do indeed develop such a relationship with their patients over time. This is one of the greatest rewards of primary care practice.

"A doctor's most precious commodity is time." Primary care clinicians should receive their just compensation; They must be able to spend more time with individual patients.

Consider:

The hours physicians and other volunteers work to provide pro-bono work in free clinics all over the country is enormous. Uwe Reinhardt (*BMJ November 17, 2007; 335: 1020*) argues that the availability of this "safety net"—emergency department care, services of residents in training who work prodigiously to aid patients (with low pay), free clinics, and discounted or forgiven costs of office calls and hospitalizations to those with limited incomes and inadequate or no insurance, has relieved pressure on the nation's political leaders to provide basic health insurance to all citizen.

Over the years the A.M.A. has consistently opposed "socialized medicine".

What about physicians who work for the federal, state, city, and county governments? Those serving in the military? The FDA? As medical missionaries? In Hospice and palliative care. Are they getting rich? Do they lack compassion?

There is a paradox. Some complain about the medical profession in general, but if you ask them if they like their own doctors (primary care or specialists) they almost always reply that they like them very much, trust them, and believe they are giving good care.

Admittedly, many of us have been subject to conflicts of interest, tempted in part by the marketing departments of pharmaceutical companies. Some physicians derive financial benefits from speciality hospitals, surgical day clinics, and by referring patients to screening and diagnostic services in which they have a financial interest.

Our healthcare system is inefficient, fragmented, wasteful, and inconsistent. Health care and access varies widely geographically. We do have s system of de-facto rationing. Costs are driving many out of the market. But, many receive unnecessary care. Among some populations some services are overutilized. Medicalization is rampant. If you are sad or grieved, you need a pill; if you are tense and anxious, you need a pill. If you had a sore throat of bronchitis in the past and were "cured" by antibiotics, you demand them if the symptoms recur.

Given the scarcity and expense of many applications of modern medicine and surgery, I believe fair and equal distribution of *all* services on a *timely* basis to *everyone* is impossible. Trying to do so would reduce us to a lowest common denominator of service. We would have to delay or forego many of the most advanced and most expensive diagnostic applications and treatments now available, as well as those to be made available in the future.

The country can afford only so much. "Social justice" is limited. "Market justice" ("Social Darwinism"?) will prevail to some extent. It is an innate human quality. There is nothing intrinsically wrong with it. However, it may be abused. "Market justice" derives from principles on individualism, self interest, personal effort, and voluntary behavior. "Social justice" requires allocation of goods and services according to individual needs. Social justice in health care requires universal coverage and ensured access to care. Physicians and hospitals have been straddling the gap between market justice and social justice.

This does not in any way preclude development of a more equitable distribution of medical services.

We must trade some autonomy for security. All Americans need a medical home for ongoing, continuous, comprehensive, and coordinated care. And protection from catastrophic health care costs.

Much of medical care resides in risk prevention. Citizens must be made more responsible for their own health. This depends on maintaining healthy lifestyles. Those who do not maintain healthy lifestyles are responsible for much of the costs of medical care in the US today. Would it ever be possible to increase the costs of diagnostic and therapeutic applications to non-compliant patients who do not begin healthy lifestyles and maintain them? Would it be ethical? Patients must do more for themselves. Leading patients to this end is one of the most challenging applications of primary care.

"Care giving is recognition of what it is to be a suffering human being."

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In Adults Over Age 60, Low Fitness Predicted Higher Risk Of All-Cause Mortality, Independent Of BMI Or Abdominal Adiposity.

[12-2] CARDIORESPIRATORY FITNESS AND ADIPOSITY AS MORTALITY PREDICTORS IN OLDER AMERICANS

About 1/3 of Americans are obese.

Levels of physical activity and functional aerobic capacity steadily decline with age. Obesity tends to increase with age.

The vast majority of US adults do not engage in regular physical activity. A high percentage of adults have levels of functional capacity that are low enough to increase risk of death..

Prospective studies provide convincing evidence that obesity and physical inactivity each can produce excess mortality risk in middle-aged adults.

Cardiorespiratory fitness ("fitness") is an objective reproducible measure that reflects the functional consequences of recent physical activity habits, disease status, and genetics.

This study determined the association between fitness, adiposity, and mortality in older adults.

Conclusion: Fitness was a significant predictor of mortality, independent of overall or abdominal adiposity.

STUDY

1. Followed a cohort of over 2600 adults over age 60 (mean age = 64; 80% men). All completed a baseline health examination during 1979-2001.
2. At baseline: 46% were overweight (BMI 25-29); 12% obese (BMI 30-35); a few grossly obese (BMI over 35)
3. Fitness was assessed by a maximal exercise test. Adiposity was assessed by body mass index (**BMI**), and waist circumference.
4. Defined low fitness as the lowest fifth of the sex-specific distribution of maximal treadmill exercise test duration. (Total test time correlates highly with directly measured maximal oxygen uptake.) The test end-point was volitional exhaustion, or termination for medical reasons.

5. Grouped fitness into a binary variable: low fitness = the lowest 20% of treadmill time; all others were classified as physically fit. (Other studies in elderly participants have shown that low fitness is, by this definition, an independent predictor of morbidity and mortality.)
6. Subjects were excluded if they were unable to achieve at least 80% of their age-predicted maximal heart rate (220 minus age in years).
7. Main outcome measure: All-cause mortality through 2003. Mean follow-up = 12 years.

RESULTS

1. During over 31 000 person-years of follow-up, there were 450 deaths.
2 Fitness:
   A. Exercise duration (in minutes) for men for fifths of fitness categories: (approximate means)

      < 8 9 11 15 > 16

   B. All-cause death rates per 1000 person-years according to fitness quintiles measured in treadmill time (approximate mean min):

Minutes	<9	10	12	16	>18
Deaths	33	17	13	12	8

      (In most instances, death rates for those with higher fitness were less than half of rates for the unfit.)
3. BMI:
   A. Adjusted all-cause death rates per 1000 person-years across BMI groups: (approximate means)

< 18-24	25-29	30-34	>35
14	13	18	32

   B. After multiple adjustments for possible confounding factors, hazard ratios of mortality across incremental quintiles of BMI

BMI	18-25	25-30	30-35	> 35
	1.00	0.9	1.1	2

   C. The “J” shaped relationship between BMI and mortality remained after adjustment for fitness and possible confounders.
5. Waist circumference:
   A. All-cause death rates per 1000 person-years according to waist circumference:

      Normal (< 88 cm for women; <102 cm for men) 13

      Abnormal (> 88 cm and > 102 cm) 18

DISCUSSION

1. Fitness had a strong inverse association with mortality. In most instances, death rates for those with higher fitness were less than half of rates for the unfit.
2. Both BMI and waist circumference were associated with mortality risk.

3. “Our primary finding is that both fitness and BMI were strong and independent predictors of all-cause mortality in adults 60 years or older.”
4. Previous findings demonstrated that lower levels of fitness are strongly associated with higher risk of all-cause mortality and cardiovascular disease mortality in younger men.
5. Higher levels of fitness were inversely related to all-cause mortality in both normal weight and overweight BMI subgroups, and in those with normal waist circumference and in those with abdominal obesity.
6. Individuals who were obese (with a BMI 30-35) and those with abdominal obesity had a lower risk of all-cause mortality than did unfit normal weight or lean individuals.
7. There was a “J” shaped association between mortality and BMI—rate for 1000 person-years was the lowest in the overweight group (BMI 25-30) and highest in the very obese group (BMI > 35). This is consistent with previous reports that find no evidence of increased mortality risk in mildly overweight persons over age 65 after adjusting for self-reported physical activity.
8. In unfit persons, the mortality was “J” shaped. The lowest risk was in those with BMI 25-30, and was higher in those with BMI 30-35 and in those with BMI 18-25. “This supports the hypothesis that moderate or high fitness levels favorably influence mortality risk across categories of body composition. ” Normal weight individuals had greater longevity only if they were physically fit. Obese individuals who were fit did not have increased mortality.
9. In older populations, waist circumference has been a better indication of mortality than BMI.
10. “Our results support the hypothesis that higher levels of fitness can reduce the risk of premature death.” “We found that fitness is a strong predictor of overall death among older adults, independent of body composition and other mortality risk factors.”
11. Since the study had only one baseline assessment of fitness and adiposity, the authors could not examine whether changes in either of these variables occurring during follow-up may have influenced study results.

CONCLUSION

In adults over age 60, low fitness predicted higher risk of all-cause mortality, independent of overall or abdominal adiposity.

“Fit individuals had greater longevity than unfit individuals regardless of their body composition.”

“It maybe possible to reduce all-cause death rates among older adults, including those who are obese by promoting regular physical activity.” Walking 30 minutes a day will keep most individuals out of the low-fitness category.

“Clinicians should consider the importance of preserving functional capacity by recommending regular physical activity for older individuals, normal weight and overweight alike.”

JAMA December 5, 2007; 298: 2507-16 Original investigation, first author Xuemei Sui, University of South Carolina, Columbia

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Individualism Is The Key.

[12-3] RATE CONTROL IN PERMANENT ATRIAL FIBRILLATION

Rate-control drugs aim to reduce heart rate at rest and during exercise, without causing excessive nocturnal bradycardia. The ultimate aim is to improve symptoms and exercise tolerance, and to prevent cardiomyopathy induced by tachycardia.

In June 2006, NICE (The UK National Institute for Health and Clinical Excellence) published new guidelines for control of heart rate in patients with chronic AF. As preferred initial monotherapy, they recommend that beta-blockers or rate-limiting calcium antagonists should be used instead of digoxin.

The American Heart Association and others also revised guidelines recommending beta-blockers or calcium-blockers alone to control heart rate.

Overall, use of digoxin has declined.

This literature review comments on the pro and con evidence underlying this fundamental change in practice.

Digoxin:

Has long been used for rate control. It acts primarily by a vagotonic influence on the atrio -ventricular node. It also has a positive inotropic effect.

Beta-blockers: [1]

In patients with AF, beta-blockers have heterogeneous effects on heart rate, depending on their specificity for the beta-receptor and how much concomitant beta-agonist activity they possess.

In 10 studies of beta-blockers alone, beta-blocker was better than digoxin in controlling heart rate at rest.

Beta-blockers improved rate-control during exercise in 4 studies. In six studies, beta-blockers alone did not improve heart rate during exercise.

One large study reported no significant difference between beta-blockers alone and digoxin alone in adequately controlling heart rate at rest and at exercise.

Several studies reported better rate control during rest and during exercise with use of digoxin + beta-blocker than with digoxin alone. However, the effect of the combination on exercise tolerance was not consistent.

Other adverse effects of beta-blockers were reported.

Two studies reported worsening of symptoms of heart failure on withdrawal of digoxin in patients with heart failure.

Calcium blockers:[2]

Diltiazem (Generic; *Cardizem*) was evaluated in 5 studies. It was better than digoxin at controlling heart rate during exercise, but not at rest. No improvement was seen in exercise capacity.

Eleven studies assessed combined diltiazem + digoxin. Most reported improved rate control at rest and exercise when compared with digoxin alone. Two reported improved exercise tolerance.

A few studies reported worsening of heart failure when digoxin was discontinued.

Verapamil (Generic; *Covera*), used alone vs digoxin alone, improved heart rate during exercise as compared with digoxin in 3 studies. And improved exercise tolerance when used alone in 2 of 3 studies.

Combined digoxin + verapamil provided better rate control at rest and during exercise than digoxin alone. Exercise tolerance was improved in some studies, unchanged in others.

Concomitant use of both drugs increases digoxin concentrations.

Limitations of use of verapamil and diltiazem include their negative inotropic effects and dose-related adverse effects.

The editorialists' summary opinion:

1) Little evidence exists that monotherapy with beta-blockers or calcium blockers improves exercise tolerance in patients with chronic AF.

2) There is clear evidence that when beta-blockers are used alone, exercise capacity may worsen, especially in patients with history of heart failure.

3) Little evidence exists that monotherapy with beta-blockers or calcium-blockers improves heart rate at rest or during exercise as compared with digoxin alone.

4) Beneficial effects on heart rate variability, together with improved exercise tolerance have been shown only with combined digoxin + beta-blocker, or combined digoxin + calcium blocker.

5) "We believe that the combination of digoxin and a beta-blocker, or digoxin and a calcium blocker, should be recommended as first line management. We emphasize, it is safest to start treatment with digoxin first."

BMJ November 24, 2007; 335: 1057-58 Editorial, first author Theodora Nikolaidou, Royal Hallamshire Hospital, Sheffield, UK

1 Beta-blockers with no intrinsic symapthomimetic activity are preferred: metoprolol; atenolol. They increase A-V nodal conduction time.

2 Rate limiting calcium blockers include: varapamil (Generic; *Covera*) and diltiazem (Generic; *Cardizem*). They increase a-v node refractory period without significant effect of the sinus node.

3 All generic drugs listed in this article are available at some pharmacies for $4 for a month's supply. Go to GOOGLE -- $4 PRESCRIPTIONS.

NICE replied to the article (BMJ December 8, 2007; 335: 1169-70 letter, first author Gregory YH Lip):

NICE has provided clear recommendations on rate control. “We recommend beta-blockers or rate-limiting calcium antagonists as initial therapy in all patients. We do not exclude digoxin, although it probably less good overall as monotherapy, but useful in sedentary patients.” If monotherapy fails, we recommend combined beta-blocker and digoxin, or calcium antagonist and digoxin to control rate during normal activities, and rate-limiting calcium antagonists and digoxin during both normal activities and exercise.

NICE guidelines do not contraindicate digoxin, but the limited evidence suggests that beta-blockers and rate-limiting calcium antagonists are better for rate control per se. Digoxin may be useful for comorbidities (such as heart failure). Combination therapy is often used.

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“We Need A Comprehensive National Strategy To Deal With The Problem”

[12-4] CHILDHOOD BODY-MASS INDEX AND RISK OF CORONARY HEART DISEASE IN ADULTHOOD

The worldwide epidemic of childhood obesity is progressing at an alarming rate. Risk factors for coronary heart disease (**CHD**) are already identifiable in overweight children: hypertension, dyslipidemia, and impaired glucose tolerance.

This study investigated the association between BMI in childhood and CHD in adulthood.

Conclusion: Higher BMI in childhood is associated with increased risk of CHD in adulthood.

STUDY

1. Followed a cohort of children (n = over 276 000) in Denmark. All underwent mandatory annual health examinations at school.
2. Determined the association between BMI in childhood (ages 7 through 13), and CHD in adulthood (25 years and older). Follow-up began at age 25.

RESULTS

1. In over 5 million person-years of follow-up, over 11 000 men and over 4000 women received a diagnosis of CHD or died of CHD as adults.
2. The risk of any CHD event (fatal of non-fatal) among adults was positively associated with BMI at ages 7 to 13 years for boys, and at 10 to 13 years for girls. The associations increased linearly as age increased.
3. The risk of any CHD event in adulthood increased significantly for each increase in BMI z score[1] at each age from 7 to 13,
4. Adjusted hazard ratio for risk of a CHD event in adulthood increased linearly for boys for each 1-unit increase in z score: Hazard ratio

    7-year old 1. 05

10-year old	1.11
13-year old	1.17

Increased risk was also linear for girls, but less pronounced.

5. A 13-year old boy who weighs 11 kg more than average will have an estimated 33% increase in the probability of a CHD event before age 60.

DISCUSSION

1. "In this large population-based cohort study . . .we found that higher childhood BMI values elevated the risk of having a CHD event in adulthood."
2. Each 1-unit increase in BMI z score, at every age from 7 to 13 years in boys, and from 10 to 13 years in girls, significantly increased the risk of an event.
3. The association became stronger with increasing age during this period of childhood. Increasing BMIs at age 7 were associated with small increase in adult CHD. By age 13 risks increased considerably.
4. The investigators speculate that body size in late childhood is more proximal in time to adult body size. Increases in BMI z scores at these older ages could reflect a greater accumulation of fat, in particular intraabdominal fat, which increases the risk of CHD.
5. Currently, children are typically classified as being at risk only if their BMI values are above cut points such as the 85th and 95th percentile. "Our results do not support this approach. The linearity of the associations we identified between childhood BMI and adult CHD implies that even a surprisingly small amount of weight gain will increase risk of CHD."
6. Risk factors for CHD (hypertension, dyslipidemia, impaired glucose tolerance, and vascular abnormalities) are already present in overweight children. Higher weight is associated with these factors.
7. Contemporary children are heavier then their counterparts from the past. In the US, there is no sign that increases in childhood obesity are slowing down.
8. Since the magnitude of the risk was moderate for 7-year olds, and increased dramatically by the age 13, there is a possibility that intervention during this period could reduce risk of future CHD.

CONCLUSION

Higher BMI during childhood is associated with an increased risk of CHD in adulthood. Risk increases with age of the child, and with the greater increases in BMI.

NEJM December 6, 2007; 357: 2329-37 Original investigation, first author Jennifer L Baker, Institute foe Preventive Medicine, Center for Health and Society, Copenhagen, Denmark.

1 The z score was determined by calculating the standard deviation from the mean of the BMI distribution in each age group in the reference population (1955-60). At this time, BMIs of children were lower.

Then determined the mean BMI for each age group in the current study group.

Then determined the difference between the two in terms of the standard deviation of the original group.

A z score of 1 = a difference of one standard deviation.

An editorial in this issue of NEJM (pp 2325-27 by David S Ludwig, Children's Hospital, Boston Mass. comments and expands on this article. He paints a gloomy picture.

Today, about 1 in 3 adolescents is overweight or obese.

Complications of severe obesity in children include: fatty liver; high BP; gastro-esophageal reflux; orthopedic problems; marked insulin resistance; dyslipidemia; emotional problems related to the weight; sleep apnea; and type 2 diabetes. Adolescents with diabetes will be at high risk of amputations, kidney failure, and premature death. Fatty liver may progress to hepatitis and cirrhosis.

Obesity in childhood increases the risk of coronary heart disease.

Obese children tend to be socially isolated, and have high rates of disordered eating, anxiety, and depression. As they become adults they are less likely to complete college and more likely to live in poverty.

The risk of dying by middle age is already 2 to 3 times higher among obese girls than those of normal weight. The editorialist has predicted that pediatric obesity may shorter life expectancy by 2 to 5 years—an effect equal to that of all cancers combined.

If we don't take steps to reverse course, the children of each successive generation seem destined to be fatter and sicker than their parents.

We need a comprehensive national strategy to deal with the problem.

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HbAic As A Screening Test?

[2-5] SCREENING FOR DIABETES AND PRE-DIABETES

The recent Health Technology Assessment report (UK) challenges primary care to be more pro-active in the detection and treatment of both diabetes and pre-diabetes. With the increasing prevalence of obesity and consequent type-2 diabetes (**DM-2**), there is potential to reduce cardiovascular disease, especially with cheap generic drugs.

"We welcome the attention given to pre-diabetes (impaired glucose tolerance and impaired fasting glucose)."

Impaired glucose tolerance increases the risk of cardiovascular disease by about 60%; impaired fasting glucose by about 30%.

For every person with DM-2 there are 4 with pre-diabetes.

Progression to DM-2 can be prevented or slowed by diet, exercise, and several drugs that are used to treat diabetes.

Screening (testing asymptomatic patients) for, and treating, impaired glucose tolerance would be cost effective, particularly when life-style interventions are used.

Screening has been inhibited by uncertainty about which test to use. There is no perfect screening test. A fasting plasma glucose will detect diabetes and impaired fasting glucose. It will miss impaired glucose tolerance. A random plasma glucose test lacks sensitivity and specificity. A glucose tolerance test is a burden.

Glycosylated hemoglobin (HbA1c) is not part of the formal diagnostic criteria for impaired glucose tolerance, impaired fasting glucose, or diabetes.

Increasing concentrations of blood glucose (measured by fasting glucose or HbA1c), starting well below the diabetes range are linearly related to cardiovascular disease, microvascular outcomes and death.

The author of the Assessment Report suggest that more people would be tested and identified at risk if HbA1c was used rather than glucose tests. He suggests a cut-off HbA1c of 5.9% to identify most pre-diabetes. The gain from this more convenient test and consequent increased uptake by patients could outweigh any disadvantages of the test.

He suggests that screening be in two stages: 1) Selection of persons at increased risk (age, BMI, waist circumference, hypertension, ethnic origin, socially disadvantaged groups, family history, and dyslipidemia; 2) blood test such as HbA1c.

Primary care providers need a strong message that the detection and treatment of pre-diabetes is in their domain of activity.

Lancet December 8, 2007; 370: 1888-89 "Comment" first author Tim Kenealy, University of Auckland, New Zealand.

To access the Health Technology Assessment on screening: www.hta.ac.uk/fullmono/mon1117.pdf

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Screening—Applying A Test In Asymptomatic Patients for CAS Is A No-No

[12-6] SCREENINGS FOR CAROTID ARTERY STENOSIS: U. S. Preventive Services Task Force Recommendations.

The USPSTF examined the evidence on the natural history of CAS; systematic reviews of the accuracy of screening tests; observational studies of the harms of screening; treatment of asymptomatic CAS; and randomized, controlled trials of benefits of treatment with carotid endarterectomy.

Good evidence indicates that, although stroke is a leading cause of death and disability, a relatively small proportion of all disabling, unheralded strokes is caused by CAS. Benefits of surgery would be low in asymptomatic patients.

All screening (ultrasound) and confirmatory tests (angiography) in the general population have false positive results. False positive screens could result in many unnecessary surgeries.

Both testing and treatment with endarterectomy can cause harm. Serious harms of screening (death, stroke, myocardial infarction) outweigh any potential benefit that surgery may have in preventing stroke.

Recommendation: Do *not* screen *asymptomatic* patients for CAS with ultrasound or other screening tests. This is a grade D recommendation. Screening asymptomatic patients for CAS has no net benefit. Harms outweigh benefits.

This does not preclude screening for other risk factors (dyslipidemia, hypertension, impaired glucose tolerance, smoking, heart disease).

Annals Int Med December 18, 2007; 147: 854-870 "Clinical Guidelines" from USPSTF, Rockville Maryland

USPSTF makes recommendations about preventive care services for patients without recognized signs or symptoms of the target disorder. The reports are by Agency for Healthcare Research and Quality. They are independent of the U.S. government. www.preventiveservices.ahrq.gov

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Relatively Few Serious Adverse Drug Events Among Older Patients Were Caused By Beers Criteria Medications. Most Were Due To 1) Anticoagulants, 2) Anti-Diabetes Medications, and 3) Digoxin and Other Narrow Therapeutic Agents.

[12-7] MEDICATION USE LEADING TO EMERGENCY DEPARTMENT VISITS FOR ADVERSE DRUG EVENTS IN OLDER ADULTS.

Adverse drug events (**ADEs**) cause morbidity, mortality, and large economic costs. They are common in the elderly, regardless of whether they live in the community, reside in long-term care, or are hospitalized.

ADEs that lead to emergency department (**ED**) visits are clinically significant.

Most physicians recognize that prescribing to older patients requires special consideration. Few physicians are familiar with the most commonly used measure of medication-appropriateness for older patients—the Beers criteria.[1] These criteria are consensus-based. They list medications identified as potentially inappropriate for use in older adults. They have been updated in 2003 to apply to all persons age 65 and older, and include medications judged to be ineffective or to pose unnecessarily high risk

Prescriptions rates of Beers criteria medications have become widely used as a measure of quality of care in research studies, and in long-term care facilities.

Population–based data on the effect of adverse events from potentially inappropriate medications are sparse and do not compare the risks for adverse events from Beers criteria medications against those of other medications.

This study used nationally representative public heath surveillance data to estimate the number of ED visits for ADEs involving Beers criteria drugs, and compared the number with that of ADEs involving other drugs.

Conclusion: Compared with other medications, Beers criteria medications caused low numbers and few risks for ED visits for adverse events.

STUDY

1. National estimates of ED visits for ADEs were based on data from 58 hospitals participating in the National Electronic Injury Surveillance System, a nationally representative sample of hospitals in the US. All hospitals had a 24-hour ED.
2. Coders at each hospital reported clinical diagnosis, and medications implicated in adverse events.
3. Defined any adverse drug effect as an incident ED visit by a patient age 65 or over in 2004-2005. The treating physician explicitly attributed the event to the use of the drug.
4. Adverse effects included allergic reactions (immunologically mediated); undesirable pharmacologic or idiosyncratic effects at recommended doses; unintentional overdoses (toxic effects linked to excess dose or impaired excretion); or secondary effects (falls and choking). Cases of intentional self-inflicted harm were not included.
5. Defined an adverse drug event from Beers criteria medications as a visit in which the medication from the Beers list was implicated.
6. The investigators also estimated how often these medications were prescribed in outpatient visits during this period.

RESULTS

1. Over 4400 ADEs were reported from an estimated 177 000 ED visits. (About 2.5% of visits).
2. Of the 4400, only 3.6% involved Beers criteria medications categorized as always potentially inappropriate. An additional 5% involved medications categorized as potentially inappropriate under certain circumstances.
3. Compared with visits for adverse drug events due to other medications, visits for Beers criteria medications were more likely to have 2 medications implicated.
4. Among the medications the Beers criteria considered to be always potentially inappropriate, more than half of the ED visits were for anticholinergics, antihistamines, nitrofurantoin (the majority allergic reactions), or propoxyphene.
5. Digoxin was the most commonly prescribed drug among medications the Beers criteria considered to be potentially inappropriate under certain circumstances. A dose of digoxin over 0.125 mg/d was considered unacceptable in the majority of cases.
6. Of the 14 medications implicated in 1% or more of estimated ED visits for adverse drug events, digoxin was the only medication included in the Beers criteria. Nine of the 10 commonly implicated medications were categorized in 3 classes;
    1) Anticoagulants [warfarin 17%], or antiplatelet agents aspirin, and clopidogrel.
    2) Antidiabetes agents [insulin 13%], metformin, glyburide, glipizide.
    3) Narrow therapeutic index agents [digoxin 3%], phenytoin.

    (Together these 3 classes accounted for about half of all ED visits for ADEs. Most ADEs were

dose-related. ED visits for adverse events due to insulin, warfarin, and digoxin were 35 times greater than for medications considered to be always potentially inappropriate by the Beers criteria.)

7. Twenty five % to 95% of patients seen in the ED for these ADEs due to these 3 classes of drugs required hospitalization. (Because of bleeding, and hypoglycemia resulting in loss of consciousness or seizure; and for various reasons for digoxin.)
8. At least one medication considered to be always potentially inappropriate was prescribed in an estimated 10% of outpatient office visits during this time. Insulin, warfarin and digoxin were prescribed 2.6% of the time. All types of oral anticoagulants or antiplatelet agents, antidiabetes agents, and narrow therapeutic index agents were prescribed in 9%.

DISCUSSION

1. Relatively few ED visits for ADEs among older patients were caused by Beers criteria medications considered to be always potentially inappropriate, even though these drugs were prescribed frequently to outpatients
2. Fewer than 10% of ED visits for ADEs were attributable to Beers criteria medications. Nine out of ten visits were due to the 3 classes of drugs indicated above. (These medications are so important therapeutically, they should not be labeled as "inappropriate" for use in older patients.)
3. Although allergic reaction are certainly adverse drug events, they are rarely the basis for categorizing medication as potentially inappropriate.
4. These data suggest there may be considerable opportunity to reduce adverse events in older people through interventions that improve the use of anticoagulants, antidiabetes agents, and narrow therapeutic index medications.
5. The investigators state that consideration of only ED visits was a limitation of the study. Also that it was limited to elderly patients

CONCLUSION

Compared with other medications, Beers criteria medications caused low numbers of, and few risks for, ED visits for adverse drug events. Performance interventions targeting warfarin, insulin, and digoxin use could prevent more ED visits for adverse events.

Annals Int Med December 4, 2007; 147: 755-65 Original investigation, first author Daniel S Budnitz, CDC, Atlanta, GA.

The investigation was funded by the CDC and The FDA

1 See page 757 for a list of drugs included in the Beers criteria Also available of GOOGLE. Go to BEERS CRITERIA. There are 41 medications or medication classes listed as potentially inappropriate under any circumstances ("always potentially inappropriate"); 7 as potentially inappropriate when used in certain doses, frequencies, or duration ("potentially inappropriate in certain circumstances")

"An Estimated 12% Of All Types Of Type 2 Diabetes In The United States May Be Attributable To Smoking"

[12-8] ACTIVE SMOKING AND THE RISK OF TYPE 2 DIABETES: A Systematic Review and Meta-analysis

Observational studies have suggested an association between active smoking and incidence of type 2 diabetes (**DM2**).

This study (a systematic review with meta-analysis of prospective cohort studies) assessed the association.

Conclusion: Active smoking is associated with increased risk of DM2.

STUDY

1. Literature search included studies if they reported fasting glucose, impaired glucose tolerance, or DM2 in relation to active smoking status at baseline, had a cohort design, and excluded subjects with DM2 at baseline.
2. The preferred reference group was "never smokers".
3. Outcome variable = presence to DM2, impaired fasting glucose, or glucose intolerance. The criteria used in studies included the WHO 1985 criteria (fasting glucose 140 mg/dL and above); and the WHO 1999 criteria (fasting glucose 126 and above).

RESULTS

1. The final analysis included 25 studies (over 1 million study participants; over 45 000 incident cases of DM2).
2. Among the 25 selected studies, all except one found an association between active smoking and DM2.
3. The pooled relative risk estimated from these studies (DM2 in active smokers vs never smokers) = 1.5 [1]
4. Stronger associations between smoking and DM2 were reported in studies that were adjusted for 8 or more confounding factors. Also for subjects who were older, and were overweight or obese.
5. There was a suggested dose-response relationship between smoking and DM2 (heavy smokers RR = 1.6; lighter smokers RR = 1.2).

DISCUSSION

1. "There is an extensive body of literature reporting on the association between active cigarette smoking and the incidence of diabetes."
2. "We conclude that the relevant question should no longer be whether this association exists, but rather whether this established association is causal." Observational studies cannot prove causality.
3. There is theoretical biological plausibility for causality. Some studies, but not all, report that smoking may lead to insulin resistance or inadequate compensatory insulin secretion responses. Smoking has a clinically significant effect on both oral and intravenous glucose tolerance tests.
4. Smoking is often associated with other unhealthy behaviors that favor weight gain—lack of physical activity, poor fruit and vegetable intake, and high alcohol intake. There is evidence that smokers (especially heavy smokers) tend to have higher BMIs than lighter smokers and some non-smokers. Smokers tend to gain weight

during attempts to quit. They often relapse, but maintain the weight gain. Smokers also have a greater risk of abdominal fat accumulation compared with non-smokers.

5. "We believe there is no need for further cohort studies to test this hypothesis. There is a need for studies that include detailed measurements and adjustment for potential confounding factors such as socioeconomic status, education, and exercise, with a goal of establishing whether the association with smoking is causal."

JAMA December 12, 2007; 298: 2654-64 original investigation, first author Carole Willi, University of Lausanne, Switzerland.

1 Articles often report relative risks which may look impressive. When absolute risks are calculated (often from data hidden in the study, or not appearing at all) the results are much less impressive. For example, from the largest study (n = > 700 000 subjects), I calculated the incidence of DM2 over 13 years in the smoking group vs the never-smoking group to be 3.8% vs 3.1%. Absolute difference = 0.7%; NNT to harm = 143.

An editorial in this issue of JAMA (pp 2675-76) first author Eric I Ding, Harvard School of Public Health, Boston , Mass., comments and expands on this article:

It is important to try to quantify the burden of diabetes attributable to smoking. The estimates by the article, and by the conventional population-attributable risk formula, an estimated 12% of all types of type 2 diabetes in the United States may be attributable to smoking.

Recommendations for type 2 diabetes prevention should incorporate smoking avoidance accompanied by lifestyle modification. Although a frequent concern of smoking cessation is subsequent weight gain, moderately increasing exercise can largely minimize the approximately 2 kg weight gain associated with stopping smoking.

The public health issues of smoking, exercise, and obesity are inextricably intertwined.

Major population prevention of type 2 diabetes is achievable via avoidance of smoking, and modification of lifestyle factors through a combination of weight control, regular physical activity, moderate alcohol intake, and proper diet. An estimated 91% of all type 2 diabetes is preventable by smoking prevention and lifestyle modifications.

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Neither An Antibiotic Nor A Topical Steroid Alone, Or In Combination, Was Effective

[12-9] ANTIBIOTICS AND TOPICAL NASAL STEROIDS FOR TREATMENT OF ACUTE MAXILLARY SINUSITIS: A Randomized Controlled Trial

Symptoms consistent with acute sinusitis are commonly encountered in primary care practice. They are due to a broad group of usually undefined etiologies at the time of original treatment decision.

Of the cases in which acute maxillary sinusitis is suspected on presentation, few are reliably confirmed by the physician.

Despite clinical uncertainty as to a bacterial cause of symptoms of acute sinusitis in everyday practice, almost all patients receive antibiotics. [1]

Widespread treatment with antibiotics adds to costs and risk of development of antibiotic resistance. The majority of patients receiving antibiotics attribute symptom resolution to the antibiotic.This is despite the likelihood that the resolution of symptoms in the great majority of patients will occur over the same time course, whether treated with or without antibiotics.

Intranasal steroids have anti-inflammatory as well as potential decongestant actions. It is reasonable to assume they will benefit acute sinusitis by improving osteal patency and facilitating drainage.

Studies and reviews of the benefit of both antibiotics and nasal steroids have been conflicting.

This trial assessed the effect of amoxicillin and topical budesonide [Rhinocort Aqua-AstraZeneca] in patients with acute maxillary sinusitis.

Conclusion: Neither drug, alone or in combination, was effective.

STUDY

1. Double-blind, randomized, placebo controlled trial followed 240 adults with acute non-recurrent sinusitis seen in primary care practices. Symptoms had been present on average for a week before the initial consultation.
2. All had 2 or more diagnostic criteria typical of bacterial sinusitis: purulent rhinorrhea with unilateral predominance; local pain with unilateral predominance; purulent rhinorrhea bilateral; presence of pus in the nasal cavity. No X-rays were obtained.
3. Randomized to:
   1) Amoxicillin 500 mg 3 times daily for 7 days + placebo inhalant, or
   2) Budesonide 200 ug of in each nostril once daily for 10 days + placebo antibiotic, or
   3) Both active drugs, or
   4) Double placebo.
4. Main outcome measure = proportion of patients cured at day 10, and duration and severity of symptoms using patients symptom diaries.

RESULTS

1. Proportion of patients with symptoms lasting 10 or more days (%):

Amoxicillin	29
No amoxicillin	34
Budesonide	31
No budesonide	31

   (Not statistically significant)

2. In the antibiotic vs placebo group, and the budesonide vs placebo group, median total symptom

severity scores declined similarly and linearly over 10 days until almost all 4 groups were without serious symptoms at 10 days.. (Figure 3 page 2494)

DISCUSSION

1. "Our more rigorous case definition of sinusitis is likely to mean that less well-defined cases of sinusitis treated routinely by physicians in primary care will show even less effect from taking antibiotics."
2. The lack of effectiveness may be because antibiotics do not typically penetrate into localized cavities.
3. Topical steroids may be more likely to benefit at an early stage of the natural history of the condition before more refractory stages develop, characterized by thick secretions, closure of the ostium, and severe inflammation with systemic features.
4. "Our main conclusions are that among patients with the typical features of acute bacterial sinusitis, neither an antibiotic nor a topical steroid alone or in combination , is effective in altering the symptom severity, the duration, or the natural history of the condition."

CONCLUSION

Neither oral amoxicillin nor topical budesonide alone or in combination was effective as treatment for acute bacterial sinusitis in the primary care setting.

JAMA December 5, 2007; 298: 2487-96 Original investigation, first author Ian G Williamson, University of Southampton, UK.

1 This leads to increasing "medicalization"–ie, patients will demand antibiotics if they have a recurrence of the disease, believing it led to cure in the past.

An editorial in this issue of JAMA (pp 2543-44) by Morten Lindback, University of Oslo, Norway, comments and expands on the article:

In the U.S., there is a discrepancy between patient's perceptions and the physician's diagnosis. "I have a sinus problem" is one of the most common reasons for clinical encounters.

Acute sinusitis is still one of the most common reasons for prescribing antibiotics.

International guidelines, however, support the lack of effectiveness of antibiotics for clinically diagnosed sinusitis

Antibiotic treatment for acute sinusitis corresponds with considerations regarding the limited benefit of antibiotics for sore throat and acute bronchitis. A number of studies have demonstrated a limited effect of antibiotics for these conditions, Guidelines recommend more conservative treatment.

The most common respiratory pathogens (pneumococcus, H influenzae, group A streptococci, and Moraxella) have developed resistant strains.

Most patients with purulent sinusitis recover without antibiotic treatment. But, some patients with sinusitis are more ill than others, with fever, malaise, and deteriorated general condition. These patients (although relatively uncommon in general practice) need antibiotics.

Delayed prescribing (giving the patient a prescription for the antibiotic with directions not to fill it unless symptoms get much worse within a few days, or do not improve within a week) has been effective in reducing antibiotic use. Many patients end up not filling the prescription.

"Cautious use of antibiotics in the general practice setting for patients with sinusitis is warranted."

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Patents with Non-Focal Attacks Are At Higher Risk of Stroke And Dementia

[12-10] TRANSIENT NEUROLOGICAL ATTACKS: INCIDENCE AND PROGNOSIS

Transient neurological attacks (**TNAs**) are attacks with temporary neurological symptoms (commonly 2 to 15 minutes; maximum 24 hours). This article considers 3 types of TNA: 1) Focal (otherwise termed transient ischemic attack—**TIA**); 2) Non-focal TNA; and 3) Mixed focal and non-focal TNA.

Transient ischemic attacks (TIAs; a subset of TNAs) are defined as temporary attacks with focal symptoms , attributed to dysfunction of one arterial territory of the brain.

The rest of TNAs (diffuse, non-localizing, cerebral symptoms) have been considered more benign. Some TNAs are indeed non-focal. For non-focal TNAs, a mixed variety of diagnoses is commonly applied.

The conventional diagnostic criteria for TIA are clear. It in uncertain how non-focal TNAs should be classified and treated.

Patients with typical focal TNAs (usually termed TIAs) have a high risk of major vascular disease.

Hardly any studies have challenged the assumption that non-focal TNAs have a benign clinical course.

This study assessed the incidence and prognosis of focal TNAs, non-focal TNAs, and mixed TNAs in a population based cohort.

Conclusion: Patients with non-focal TNAs, and especially those with mixed TNAs, had a higher risk of major vascular diseases and dementia than persons without TNA.

STUDY

1. This prospective population-based cohort study followed over 6000 community-dwelling residents of Rotterdam. All were over age 55 at baseline (1990-1993; mean age = 68; 2/3 women). At baseline, none had a history of stroke, myocardial infarction, or dementia.
2. After enrollment, all were continuously monitored for stroke, TNAs, ischemic heart disease, dementia, and death. All underwent cognitive screening at baseline.
3. TNAs were defined as attacks of sudden neurological symptoms that completely resolved within 24 hours:

   A. A focal TNA if only focal brain symptoms were reported: eg, hemiparesis, hemihypesthesia,

dysphasia/dysarthria, amaurosis fugax, hemianopsia, diplopia, or vertigo.

B. A non-focal TNA if only non-focal symptoms were reported.

Non-focal symptoms were defined as broadly as possible. Symptoms had to set in suddenly, and clear up within seconds to a maximum of 24 hours. They included one or more of: decreased consciousness, unconsciousness, confusion, amnesia, unsteadiness, nonrotatory dizziness, positive visual symptoms, paresthesias, and bilateral weakness.

C. Mixed if both were reported for one and the same attack.

RESULTS

1. During over 60 000 person-years, a TNA was diagnosed in 548 participants: 282 focal; 228 non-focal; and 38 mixed. The mean age at the time of a possible TNA was 79 years.
2. Incident rates per 1000 person-years; Focal = 5; non-focal TNA = 4; mixed = 0.6. Incidence strongly increased with age.
3. Age, systolic BP, total cholesterol were associated with increased risk.
4. Over 10 years of follow-up, compared with participants without a TNA, participants with a TNA had a higher risk of stroke, ischemic heart disease, vascular death, and dementia. Patients with mixed TNAs were at highest risk.
5. Compared with subjects without TNAs, over 10 years of follow-up,

Hazard ratios:	Ischemic Stroke`	Vascular dementia	Myocardial infarction
Focal TNA (TIA)	2.61		
Non-focal TNA	1.56	5.05	
Mixed	2.99	21.5	3.34

(The hazard ratios may look impressive. The actual incidence rates of non-focal TNA in subjects age 75-84 was 5 per 1000.person-years.)

6. 3.5% of those with focal TNA (T IA) had a stroke within 90 days.[1]

DISCUSSION

1. “In this large, prospective population-based study, TNAs with non-focal symptoms were almost as frequent as focal TNAs, and had an equally unfavorable overall subsequent clinical course.”
2. TNAs with combined focal and non-focal symptoms had a particularly bad prognosis, with a higher risk of stroke, ischemic heart disease, vascular dementia, and vascular death.
3. Non-focal symptoms may have been underreported.
4. Because non-focal TNAs present with a wide variety of symptoms, which are often ascribed to an equally wide variety of relatively harmless non-vascular conditions, they have not been studied as a group before.
5. “Our findings challenge the strong, but unfounded, convictions that non-focal TNAs are harmless.”

Non-focal TNAs are not only a risk factor for stroke, but also for dementia.

6. Patients with mixed TNAs were at an especially high risk for vascular dementia.

CONCLUSION:

Compared with persons without TNA, patients with focal TNA (TIA) had a higher risk of stroke. Patients with non-focal TNA had a higher risk of stroke and dementia. Patients with mixed TNA had a higher risk of stroke, dementia, ischemic heart disease, and vascular death.

JAMA December 26, 2008; 298: 2877-85 Original investigation, first author Michiel J Bos, Erasmus Medical Center, Rotterdam, Netherlands.

1 The authors comment that this % is much lower than that reported in other studies (about 10%). This may have been because most other studies recruited subjects from hospitals. The present study had direct access to general practitioners files.

An editorial in this issue (pp 2912-13 by S Claiborne Johnston, University of California, San Francisco, comments and expands on the study. He asks—"Is Transient Neurological Attack a useful concept?"

Ischemic stroke is relatively easy to diagnose with certainty. There is often disagreement about whether the patient has a TIA (focal TNA). The diagnosis depends on the recollections of the patient who, by definition, is an impaired observer. Other conditions may mimic TIA and may be indistinguishable from an actual ischemic event: eg, syncope, seizure, migraine, and conversion.

Accurate diagnosis of TIA is important because urgent evaluation is required. It generally requires an emergency department evaluation, and may justify hospitalization. Failure to get the diagnosis right may result in stroke. The older the patient, the higher the BP, the longer the duration of the spell, and the more evident the focal paralysis, the more likely the attack is a TIA.

But, if the diagnosis is suspected too frequently, the health care system may be stressed.

At present, most non-focal TNAs are treated as benign. For some etiologies such as transient global amnesia, the evidence supports this. For other events, there is no consistent evaluation, no guidelines for treatments, and no information on prognosis.

Given the risk of stroke in patients with non-focal TNA, detailed investigations may be considered: brain imaging, carotid imaging, lipid levels, glucose level, HbA1c, BP control. "Leaving the patient unstudied and with a vague diagnosis is more difficult to justify now that the worrisome prognosis of non-focal TNA had been demonstrated." However, aggressive interventions, such as hospitalization are probably not indicated for patients with non-focal TNA because the short-term risk of stroke and other events is relatively low.

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