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Improving the management of chronic disease

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examples discourage community support for research. The rationale of medical research cannot be justified if the population in which the research was carried out does not benefit from the results of the research.[4] In this regard, the investigators need to clarify the usefulness of the rHEV vaccine in preventing and controlling disease in the native population of Nepal.

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THE AUTHORS REPLY: Our research established that the rHEV vaccine provides highly effective protection and generated a hypothesis that hepatitis E, an underrecognized disease, is so burdensome in places where it is endemic that vaccination could be cost-effective. Nevertheless, since the vaccine is being developed for the developing world, access will define its impact on health.

Basu and Lurie question whether volunteers in our trial were coerced because they were soldiers. We note that the trial began after a decade of capacity building and documenting the high risk of hepatitis E in Nepalese civilians and in the military. Our trial was responsive to a national health need and adhered to international guidelines for informed consent. The trial was approved by ethics review panels in Nepal and the United States and was monitored by independent experts. In particular, we took measures to remove the influence of military commanders over participation by their subordinates. Of more than 40,000 soldiers who were informed about the trial, only 5323 gave informed consent to be screened; of 3023 soldiers with the lowest screening levels of antibody, only 1885 agreed to undergo randomization. The high proportion that declined to participate in the study at each stage of enrollment belies coercion.

GlaxoSmithKline, along with U.S. government agencies, has supported rHEV vaccine research, because the company recognized the value of developing vaccines and medicines against diseases in the developing world — efforts it has undertaken for more than 20 years. Bhattarai asks about access to the vaccine after the trial. We affirm that GlaxoSmithKline embraces the principle of distributive justice and is committed to continue development of the rHEV vaccine so that it can be available in Nepal. Nevertheless, since control of infectious diseases is a global public good, we call for international financing for the introduction of the rHEV vaccine through partnerships similar to those developed for rotavirus and pneumococcal conjugate vaccines.

We emphasize that GlaxoSmithKline is seeking public-sector partners who also are committed to the long and challenging endeavor to add the rHEV vaccine to immunization programs in high-risk countries. Despite competing public health priorities, we remain optimistic that the 95% protective efficacy of the rHEV vaccine can attract support. Adoption of rHEV vaccination programs in Nepal would be a fitting outcome for our trial's volunteers and our many colleagues who since 1987 have examined options to identify and control hepatitis E.

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Improving the Management of Chronic Disease

TO THE EDITOR: The Special Article by Landon and colleagues (March 1 issue)[1] on improving the management of chronic disease at community health centers illustrates the importance of identifying appropriate outcomes when measuring the effectiveness of interventions to improve processes of care. Establishing a more realistic schedule than that used in this study for assessing the effect of

the program might have yielded a different picture. Sufficient time needs to be allowed for the measurement of clinical outcomes, particularly regarding outcomes of patients with chronic disease. Process interventions to improve outcomes in chronic disease have been shown to be associated with an increase in health care utilization during the first year. This increase often reflects preexisting needs of the patient that had not been met; it is often not until the second year that a measurable decrease in health care utilization is noted.[2] Physicians and others working to establish evidence-based interventions in the community can identify appropriate outcomes by partnering with families, community stakeholders, and local institutions. Implementation designs that incorporate the collection of locally meaningful outcomes data into realistic, community-sensitive timetables have been reported to result in effective and sustainable programs.[3]

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TO THE EDITOR: The examination by Landon et al. of the quality of care at community health centers adds to an impressive literature; although this study covered too short a period to capture health outcomes, earlier research has documented such effects. The authors do not report on the broader policy context of this work, however. Health centers face a staggering increase in the number of uninsured patients. Yet not only has the Bush administration eliminated all funding for quality-improvement collaboratives, but its proposals for the fiscal year 2008 budget call for deep reductions in Medicaid (the most important source of funding for health centers) and seek no appropriations for either quality improvement or health-information technology. Moreover, the administration has recently begun to withhold access to data on health center performance that were previously public under the Uniform Data System and that provide important information on the deep challenges confronting health centers and their communities.

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TO THE EDITOR: If the outcome is not improved, it is illogical to conclude that the process is improved. All that has been demonstrated is that doctors and nurses are able to jump through the hoops mandated by expert committees. When "hierarchical regression models" and other elements of scientific sophistication are removed, one is left stating that the operation was a success but the patient still died. Landon et al. cite numerous articles in the medical literature of this same genre.

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TO THE EDITOR: Landon et al. find that a quality-improvement program was better for improving care processes for patients with asthma, diabetes, and hypertension than for improving intermediate outcomes. The Translating Research into Action for Diabetes study has reported similar findings.[1] According to that study, across 67 physician groups, variation in the intensity of disease management of diabetes was strongly associated with variation in care processes but not in intermediate outcomes. Scores for process-based quality were unrelated to scores for intermediate outcomes.[2] Disease management reduced disparities related to race or ethnic group in processes but not in intermediate outcomes.[3]

If process measures are easier to affect than are outcomes, we should perhaps focus on processes for measuring, providing feedback, and providing incentives — but only those processes that have already been rigorously linked to improved outcomes.[4] Rates of testing (e.g., for low-density lipoprotein cholesterol) and other unproven process measures may be easy to improve but offer little clinical benefit. Conversely, evidence-based processes, such as aspirin use or smoking cessation programs, have obvious value for patients. Finally, intermediate outcomes are improving over time, despite our inability to relate the changes to spe-

cific interventions. A better understanding of what is driving these improvements is needed.

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THE AUTHORS REPLY: Both Sadof and Rosenbaum suggest that we might have observed improvements in intermediate outcomes, given more time. Conceptually, we agree that, to the extent that outcomes of care are directly related to process interventions, more time than the period of our study might be needed to observe meaningful improvements in clinical outcomes such as mortality or the incidence of acute myocardial infarction. There is no reason to expect, however, that the intermediate outcomes we assessed (e.g., control of glycated hemoglobin and control of hypertension) would require such a lag. In addition, as we state, the 1-year postintervention assessment period began 1 year after the completion of the intervention, a timing consistent with that suggested by Sadof.

Smolkin argues that improvements in the processes of care are meaningless if they are not accompanied by improvements in outcomes. With the exception of asthma, the intermediate outcomes we assessed examine the control of important risk factors. Given the required time frame and sample size, we could not assess clinical outcomes such as the incidence of cardiovascular disease or mortality, but we would expect that these outcomes would ultimately be affected by improvements in the processes of care. Moreover, many of the process measures we examined are strongly linked to these meaningful clinical outcomes (e.g., daily aspirin use) but are not directly related to the intermediate outcomes we assessed. Selby and colleagues studied the association between various care-management techniques and the quality of care of patients with diabetes and reported results similar to ours.[1] We agree with their suggestion that quality-improvement efforts should focus on evidence-based processes of care that have been rigorously linked to important clinical outcomes.

Finally, Rosenbaum provides important information on the broad policy context and the challenges facing community health centers. We agree that such centers are an important cornerstone of efforts to provide a safety net for millions of Americans and that every effort should be made to provide adequate funding to meet the needs of the underserved populations they care for.

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Amiodarone for Atrial Fibrillation

TO THE EDITOR: In his review article on amiodarone for atrial fibrillation, Zimetbaum (March 1 issue)[1] did not mention that there are two forms of amiodarone-induced thyrotoxicosis (AIT) — an important distinction that has a major influence on subsequent management. In type I AIT, patients usually have preexisting thyroid abnormalities, such as nodular goiter, an autonomous thyroid nodule, or latent Graves' disease. This syndrome is thought to be due to the Jod–Basedow phenomenon. In type II AIT, the thyroid gland is normal, and thyrotoxicosis results from subacute destructive thyroiditis with the release of preformed thyroid hormone. The uptake of radioactive iodine is