ARIC Letter

The Atherosclerosis Risk in Communities (ARIC) Study

ARIC Letter to Physicians

Dear Colleague: we would like to take a few minutes of your time to thank you for your support to the ARIC study. Over the years, many of you practicing in this community have received occasional letters and questionnaires from the ARIC study related to this research. We are very grateful to you and your staff for answering our questions.

Briefly, ARIC is funded by the National Heart, Lung and Blood Institute, NIH with the aim of studying the causes and prevention of heart and vascular diseases. A cohort of approximately 4,000 residents of this community was examined in 1987-89 and has been in active follow-up since then, with repeated examinations. Since many of these ARIC cohort members are your patients you may have received our reports of their test results from ARIC's measurements for tests that are of potential value in the setting of clinical practice. Since ARIC provides neither diagnoses nor medical advice, all such reports are sent to the medical practitioner indicated by the study participant.

On occasion, one of your patients has authorized us to contact you to confirm a condition or diagnosis they report to us as part of this research. If that happens, a one-page questionnaire is sent to your office; thank you for your willingness to respond.

One distinctive feature of ARIC as a study is that in addition to a cohort under active follow-up, it also monitors community trends in heart disease hospitalizations and mortality.

Given ongoing changes in diagnostics and life-saving therapies, the accurate estimation of long term community trends requires standardized validation of the events we study. For this, we also get support from the practitioners in the community, as we approach you now and then with a questionnaire about a deceased resident of this community who was your patient. Your willingness to complement our data with information known to you about a patient's medical history is critical to our ability to validate heart disease outcomes.

With this letter we want to recognize your valuable input and contributions to research. We provide a brief overview of ARIC's two main study components, and enclose a copy of the current issue of the ARIC Newsletter sent to the members of the ARIC cohort. We hope that this will provide some context for the information about this study you get from your patients, and from us.

—The ARIC Investigators

The ARIC Study in this Community: a Brief History

As part of a national effort, a sample of approximately 4,000 residents of this community, aged 45-64 years was invited by ARIC for an extensive examination in 1987-89. Identical interviews and measurements were used at three other ARIC study centers in the U.S., and the full cohort of 15,792 men and women is under active follow-up since then. This includes four re-examinations of the full cohort, and annual phone interviews.

The ARIC study has contributed more than 1,000 publications to the scientific literature in diverse areas of clinical and population research. ARIC data also contributed to practice guidelines and policy statements, and to collaborations in research at the national and international levels.

The fourth re-examination of the ARIC cohort (ARIC exam visit 5) is currently underway. This exam is primarily focused on heart failure and cognitive function. Study measurements include echocardiography, psychometric testing, physical function, spirometry, a scan of the abdominal aorta, cerebral MRI, retinal fundus photography, arterial stiffness, and a number of blood chemistries. Most of these measurements are of research value only, but test results that are used in general clinical practice are assembled in a report for the medical practitioner designated by the study partic-

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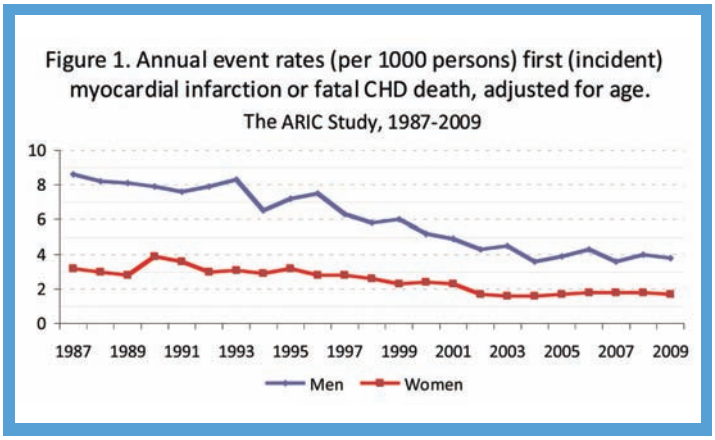
ipant. The ARIC study recommends to its cohort members to seek guidance and follow-up for their study results from their personal physician. At this time and through the fall of 2013, patients of yours who are participants in the ARIC study will receive study results that may come to your attention, either as part of a routinely schedule visit or as a consultation for one or more study result that according to current guidelines may require medical evaluation.

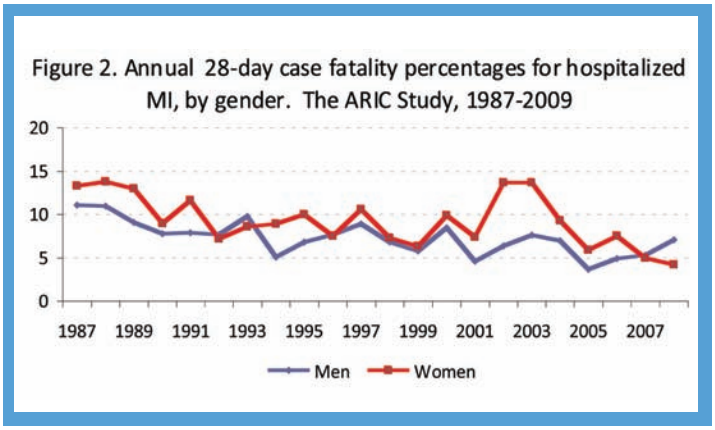
Thank you for enabling the important contributions to research your patients are making in the setting of the ARIC study. Please don't hesitate to contact a lead ARIC investigator in your area using the contact information shown in the enclosed newsletter. The ARIC investigators will be glad to respond to your comments or questions.

The Changing Community Burden of Heart Disease

Community practitioners play a critical role in advancing our understanding of trends in coronary heart disease (CHD) mortality, which is a major aim of the ARIC study. ARIC has both a cohort exam and a study that monitors community trends in mortality from CHD, hospitalized myocardial infarction (MI) and case fatality. Our sample of all events from the four ARIC study areas represents a combined population of 400,000 persons aged 35-74 years.

As part of this effort you may have been asked by ARIC to aid in validating an out-of-hospital death by completing a questionnaire about a patient's medical history. This information is critical to us, as these events are particularly difficult to validate and account for over half of all CHD deaths. Based on carefully validated data we learned that over the 22-year period from 1987 to 2008, the rate of out-of-hospital CHD death has declined an average 5.1% per year among men, and 4.1% per year among women. By way of comparison, in-hospital CHD death rates declined an average of 7.5% and 6.4% per year, respectively.





Another major aim of ARIC community surveillance is to monitor trends in first hospitalized MI and case fatality, to understand the main determinants of CHD mortality trends. **Figure 1** shows trends in age-adjusted rates of first hospitalized MI or CHD death for men and women in the four ARIC communities.

The rate of first MI or fatal CHD declined an average of 4.3% per year among men and 3.8% per year among women. An important note regarding these analyses is that through novel statistical analyses we account for improvements over time in the sensitivity and specificity of cardiac biomarkers used in the diagnosis of MI. This helps separate the true trend from artifact contributed by changes in diagnostic practice over time. ARIC data and those from other community-based surveillance studies in the U.S. support the conclusion that the past decade has seen a new era of impact from primary prevention.

As a practicing physician in the community you have a major impact on the survival of patients with MI, which can be seen from trends in case fatality. The 22-year trend in mortality at 28 days following a hospitalized MI in the ARIC communities is shown in **Figure 2**. This 28-day case fatality for a hospitalized MI fell on average 7.4% per year among men and 9.2% per year among women over this 22-year period. Together, these data indicate that both prevention of new events and efforts to successfully manage patients in the course of an MI are important determinants of the decline in CHD morality.

As a physician in community practice we are grateful for the time and dedication you contribute to the health of your patients, and to support ARIC's research on health trends in populations. Your contributions make a big difference and help move the prevention and treatment of heart disease forward.

The Atherosclerosis in Communities (ARIC) Study is supported by the NHLBI, NIH. For more information about results from ARIC community surveillance see the April 17, 2012 issue of Circulation (Rosamond W, Chambless L, Heiss G, Mosley T, Coresh J, Whitsel E, Wagenknecht L, Ni H, Folsom A. Twenty-two year trends in incidence of myocardial infarction, CHD mortality, and case-fatality in four US communities, 1987 to 2008. Circulation 2012;125:1848-1857.)