

## MINNESOTA HEART ATTACK AND STROKE PREVENTION PROGRAM

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Plans are being formulated to combine the interests, expertise and facilities of existing Minnesota institutions to affect mass changes in health behavior related to major chronic diseases in Minnesota communities.

### Long term objectives:

To reduce premature disability and death from coronary heart attacks and brain strokes in total communities of Minnesota.

### Short term goals:

To develop and test health education and communication strategies to achieve reduction of risk characteristics for heart attack and stroke.

### Past work on this subject:

- The University of Minnesota and its School of Public Health have played central roles in development of information indicating that populations and individuals differ greatly in future risk of "fatty artery" diseases, i.e., heart attack and stroke. Healthy individuals can be discriminated who actually have 10 to 20-fold different future risk of a vascular event within a given period. Differences between populations within and without the U.S., have been demonstrated on the order of 10-fold in incidence of heart attacks. Multiple risk characteristics and health behaviors are associated with these differences in risk. Some factors are powerfully and probably causally related to cardiovascular disease, including habitual eating patterns, blood fat levels, cigarette smoking habit, and blood pressure levels, in whole populations. These factors are probably centrally involved in the very large cultural differences in cardiovascular disease incidence, based on congruent evidence between clinical, laboratory and population studies. Logical basic mechanisms exist for the direct causal role of smoking, blood pressure and blood lipids in fatty artery diseases.



Evidence is accumulating that health behavior, and these risk characteristics, can be modified significantly by personal counseling and by mass health education. In addition, secular changes occur in these factors among the people, from economic and other, unknown influences.

The University of Minnesota <sup>now</sup> participates in each of the major mass preventive cardiovascular trials, comparable in scope to the mass polio trials of 20 years ago. These current trials will soon determine whether blood fat lowering, blood pressure lowering and the simultaneous reduction of multiple risk factors, will affect the actual coronary disease rates in groups of high risk individuals in Minnesota. Preliminary results from these studies should be available in 1977 or 1978 and will greatly influence the next logical phase, ie. carefully evaluated community programs involving <sup>a</sup> health message and motivation.

Two studies are now underway which are directed at mass change in health behavior related to cardiovascular risk, one, the Stanford Three Community Study, the other the North Karelia project in Finland. Each explores the potential for <sup>its</sup> mass behavioral change and impact on cardiovascular risk characteristics. The North Karelia study is of adequate size to determine possible effects on cardiovascular disease incidence. The Stanford Study compares the change over time in risk characteristics between a control community sampled by screening at annual intervals and experience in two experimental communities, one of which receives mass media communications of health messages, and one the same message <sup>program</sup> plus a multiple risk factor reduction/in 200 "high risk" families. From this community study it is now evident that health behavior can be significantly changed by the health message, and that combined effects of mass communications and counselling may be more effective than the mass media alone. Many details about methodology and the influence of health education are revealed by this systematic, controlled community comparison. North Karelia, in contrast, involves all existing medical facilities in an entire state, including public health nurses,



hospital hypertension and lipid clinics and women's organizations as well as changes in available foods and food processing and other community-wide innovations.

Proposed Minnesota Project:

It is proposed that several Minnesota communities, outside the Twin Cities, be involved in a careful and stepwise development and testing of health education strategies designed to influence health behavior and risk characteristics. The eating, exercise and smoking behaviors primarily targetted would be safe, simple and hygienic. The first phase of the Minnesota Project would assemble the community resources and available health education materials, strategies, and personnel. The next would apply and test the results of such strategies to influence health behavior in entire communities. More promising and cost effective approaches found would be adopted subsequently for larger scale, more definitive studies on the ability of such mass interventions, in communities of adequate size, to effect changes in actual frequency of disability and disease, and at what cost.

Uniqueness of the Minnesota Project:

Minnesota could be the first major community effort to begin anywhere, after the Stanford and Karelia Projects. It would have the following potential for unique contributions to knowledge, to health services, and to disease prevention at a community level.

1. The creation of a statewide program, involvement of the existing medical system including physicians, departments of health, and allied health personnel.
2. Involvement of a highly developed communications industry with academic support in communications.
3. Involvement of a strong and enlightened food industry in providing appropriate food choices and innovative marketing techniques.

4. Involvement of highly interested and motivated school systems in attacking risk factors and unhealthy habits at school age.
5. Involvement of statewide resources in physical education to influence activity and eating patterns, and mass weight control.
6. Coordination through the University of Minnesota Schools of Public Health and Medicine.
7. Involvement of existing state community structures, legislators, and opinion molders.
8. Development of a unique and effective statewide disability morbidity/mortality survey.
9. Testing of different intervention modalities including comparisons between large vs. small communities, etc.
10. Involvement of trainees in allied health sciences, medical students, graduate and post-graduate public health personnel in a community-centered project, involving multiple professional disciplines.
11. Testing of innovative strategies for the sequential staging of projects in cooperative communities, with improved efficiency and evaluation of effects.
12. Development and testing of retail marketing techniques which influence health behavior.
13. Involvement of the University of Minnesota Institute of Agriculture and agricultural extension services in communications, provision of food choices.
14. Involvement of volunteer health agencies including Minnesota Heart Association, the American Cancer Society, the Lung and Tuberculosis Association, the Diabetes and Kidney Foundations.



Staging of the Minnesota Project:

Year 1. Organization, discussion seminars between multiple disciplines, assignment of working groups to develop strategies and methods and to design the project.

Year 2. Pre-testing of methods, development of definitive protocols; initiation of the first phase of the program into limited communities.

Phase 3. Analysis of results in the first communities and initiation of programs in other communities.

Phase 4. Extended community intervention and on-going comparative analyses.

Phase 5. Termination of active community interventions, analysis of results on health and disease experience and the formulation of public health recommendations for the state, based on results.

Each stage would be approximately one year in duration. Funding might combine a Minnesota state legislative special, funding under the National Health Education Act, and other federal sources including the National Heart, Lung, and Blood Institute, and National Cancer Institute.