Summary of Proceedings

United States-Japan Conference on Aging

November 11 - 14, 1985

East-West Population Institute
EAST-WEST CENTER, Honolulu, Hawaii

March 1986
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In December 1983 the East-West Center, the University of Hawaii, and community agencies in Honolulu collaborated with the Organizing Committee in Japan to initiate the first U.S.-Japan Conference on Aging. This conference stressed the need for multi-disciplinary studies of aging among Japanese populations in Hawaii, Japan, and the mainland United States. A summary of the proceedings of this conference was published by the East-West Center in May 1984.

The Organizing Committee in Japan continued the exchange and held the second conference in Tokyo on October 20-25, 1984, inviting participants from the mainland United States and Hawaii. In addition there were open forums for the public, with presentations by Japanese and U.S. researchers in Tokyo and Osaka. A summary of proceedings of this second conference was published in March 1985 by the Nihon University Population Research Institute.

The 1984 meeting in Japan recommended establishment of three task forces in priority areas for research and action: (1) osteoporosis, (2) Alzheimer's disease and related disorders, and (3) global concepts on health and aging. Task force committee members from Japan and the United States were designated, and during the planning year there were exchanges of ideas among the members through their chairmen and by the Coordinating Committee in Hawaii and Japan. In this third conference, the task forces were joined by additional invited participants to further their mutual efforts for collaborative research on aging.
In addition to the scientific sessions, an open forum at the Kuakini Medical Center was scheduled in conjunction with the year long observation in 1985 of the 100th anniversary of Japanese migration to Hawaii.

These Proceedings consist of abstracts of the requested papers, technical reports of the three working groups, and abstracts of additional presentations made during the meetings, including those made at the Kuakini Medical Center Public Forum.

Support for this conference came from the East-West Population Institute, the University of Hawaii Foundation, the Hawaii State Executive Office of Aging, the Atherton Family Foundation, and Mr. Masayuki Tokioka (Chairman of the Board, National Mortgage & Finance Co., Ltd. of Honolulu, Hawaii). U.S. public agencies were represented by the Administration on Aging, the National Institute of Mental Health, and the National Institute on Aging. Acknowledgment also should be made to the rapporteurs, coordinators, and others who helped with the completion of this Summary of Proceedings.*

From Japan, Dr. Akira Koizumi of the University of Tokyo led the group in planning and participation. This group will organize and support the forthcoming September 1986 conference in Japan.

*Anyone interested in receiving a copy of the main papers presented should send a request to the East-West Population Institute.
AGENDA

Monday, November 11

5:00 - 7:00 p.m. KUAKINI RECEPTION* Kuakini Medical Center

Patsy Saiki, President, Japanese Women's Society
Participants and Guests, Coordinating Committee, and Invited Guests

7:00 - 9:00 p.m. KUAKINI MEDICAL CENTER PUBLIC FORUM Kuakini Medical Center Auditorium
"Aging in Japan, Hawaii and the U.S. Mainland"

Opening Remarks

Satoru Izutsu, Chairman
Masaichi Tasaka, President, Kuakini Medical Center
Richard K.C. Lee - Introduction

Presentations

Population Aging Issues in Japan - Toshio Kuroda
Issues on Population Aging in the U.S. - Philip Hauser

Panel

Recent Findings of the Honolulu Heart Program - Dwayne Reed
Cancer and Aging in Hawaii - Abraham Nomura
Osteoporosis Research in Hawaii - Richard Wasnich
The Japanese Well-Elderly: 88 Years and Over - Satoru Izutsu

*By invitation
Tuesday, November 12

8:30 - 9:00 a.m. OPENING REMARKS  
John A. Burns Hall (Auditorium)

Satoru Iizutsu - Chairman

Lee-Jay Cho, Director, East-West Population Institute

Terence A. Rogers, Dean, School of Medicine

Richard K.C. Lee, Chairman, Hawaii Coordinating Committee

Akira Koizumi, Japan Coordinating Committee

9:00 - 10:30 a.m. STATUS AND PRIORITIES

Research Priorities on Aging in Japan  
- Shuichi Hatano

Research Priorities on Aging in U.S.  
- James E. Birren

Socio-Cultural Research on Aging in Japan  
- Daisaku Maeda

10:30 - 11:00 a.m. Arrangements - Betty Gordon

Coffee  
John A. Burns Hall (ground floor lobby)

11:00 a.m. - 12:30 p.m. GLOBAL CONCEPTS ON HEALTH AND AGING

Established Populations for Epidemiologic Studies of the Elderly - Joan Cornoni-Huntley

Research Priorities in Gerontology in Japan  
- Shuichi Hatano, Nobuo Maeda and Toshiharu Fujita

12:30 - 1:30 p.m. Lunch
Tuesday, November 12 (cont'd)

1:30 - 2:30 p.m. OSTEOPOROSIS

Osteoporosis Research in the U.S.—Priorities and Directions - Richard Wasnich

Osteoporosis Research in Japan - Itsuzo Shigematsu and Hajime Orimo

2:30 - 3:00 p.m. Photo Session

3:00 - 4:30 p.m. ALZHEIMER'S DISEASE AND RELATED DISORDERS

Epidemiologic Research on Dementia in the U.S. and Japan: Issues and Opportunities - Lon White

Research on Alzheimer's Disease and Related Disorders in Japan - Kazuo Hasegawa

Wednesday, November 13

8:30 a.m. - 4:30 p.m. TASK FORCE MEETINGS

Alzheimer's Disease and Related Disorders

Co-chairmen: Lon White and Kazuo Hasegawa

Osteoporosis

Co-chairmen: Richard Wasnich and Itsuzo Shigematsu

Global Concepts on Health and Aging

Co-chairmen: Joan Cornoni-Huntley and Shuichi Hatano

Thursday, November 14

9:00 - 12:00 noon TASK FORCE MEETINGS

Alzheimer's Disease and Related Disorders

Co-chairmen: Lon White and Kazuo Hasegawa
Thursday, November 14 (cont'd)

Osteoporosis

Co-chairmen: Richard Wasnich and Itsuzo Shigematsu

Global Concepts on Health and Aging

Co-chairmen: Joan Cornoni-Huntley and Shuichi Hatano

12:00 noon    Lunch

2:00 - 4:00 p.m.    FINAL REPORTS

Denis Evans, Richard Wasnich, and Lon White

Satoru Izutsu - Chairman

Richard K.C. Lee - Chairman, Hawaii Coordinating Committee

4:00 - 6:00 p.m.    RECEPTION

Jefferson Hall (garden level)

Wailana Room
The purpose of this paper is to describe the priorities for research on aging in the United States. The process of development of public policy is also described together with historical information. Current research priorities on aging have their origin in the intellectual climate in the life sciences in the late 1930s, when it was realized that infectious diseases were declining as major causes of death and were being replaced by chronic diseases. Added to this was a major improvement in life expectancy.

In 1941 the Surgeon General of the U.S. Public Health Service appointed a National Advisory Committee to deal with matters of aging. One of its first actions was to convene a conference in May 1941 on mental health in later maturity. The publication of the proceedings of that conference provides the first document on the evolution of research priorities in the field of aging for the United States.

Subsequent events include a National Conference on Aging in 1951 and the White House Conference in 1961, 1971, and 1981. These conferences were a mixture of scientists, professional workers in aging, and citizens with leadership roles and interests in the subject matter. The conferences of 1951, 1961, and 1971 recommended the establishment of
a National Institute devoted to research on aging (NIA) within the National Institutes of Health.

In 1980 the NIA appointed a panel of scientists to prepare a National Plan for Research on Aging that was completed in 1981. This plan made priority recommendations for a wide range of research on aging, from molecular to societal. In addition, the Secretary of the HHS appointed an inter-agency commission to make recommendations on research, treatment, and care of Alzheimer's patients. Alzheimer's disease remains a high priority research area, with five major university-based Alzheimer's Disease Research Centers being supported in the last two years. Both the NIA and the NIMH support research on Alzheimer's disease, ranging from studies into the etiology and treatment of the disorder to the behavioral manifestations and the social consequences for patients and caregivers.

The tensions surrounding the 1981 White House Conference on Aging indicate that issues of aging have become mainstream concerns not only to the public, but to legislators and public administrators as well. Ideological differences were perhaps exacerbated because the 1981 conference was planned under one national administration and carried out under another. While only a small portion of the National Conferences has been devoted to research and research training priorities, these matters have been regarded seriously. These areas may be influenced by political ideology with current mood favoring research on biomedical aspects of aging with lower emphasis placed on social and behavioral aspects. Several studies of the evolution of public policy in aging
have been carried out, with one study recommending that special effort be made to secure a bi-partisan approach. Recent studies have documented the activity in research on aging at universities, examining the doctoral dissertation titles and abstracts done in the area of aging research. What is lacking is the training of enough new researchers to explore the many diverse issues and processes in aging. Current research also lacks the kind of integrative or multidisciplinary approach required to take into account the great diversity in the process of aging. Here one senses a need for conceptual or theoretical innovation.

The White House Conference of 1981 recommended that 2 percent of the national expenditures on problems of the aged be spent on both basic and applied research on aging, in order to reduce the future economic drain for services by making them more efficient as well as more humane. Current expenditures for research are far below such a level.

CLINICAL RESEARCH ON ALZHEIMER'S DISEASE AND RELATED DISORDERS IN JAPAN

Kazuo Hasegawa, M.D.

Abstract

Among the numerous biological research studies on Alzheimer's disease, several have stimulated academic interest and offer hope for the development of new strategies to counter this devastating disorder. Neurochemical studies indicate that Alzheimer's disease is a primary
degenerative nerve cell disorder that specifically impairs the functioning of neocortical cholinergic neurons. The author emphasizes the importance of clinical research, with particular regard to early diagnosis of the disease, development of an assessment schedule for drug evaluation, and epidemiological studies.

Several recent epidemiological surveys in Japan indicate the low prevalence of Alzheimer's disease compared with European and other countries. This raises the question whether the Japanese population might be exposed to fewer risk factors than Western populations. The question might be answered by an epidemiological survey on age-related dementia with an internationally acceptable protocol to be applied to Japanese ancestry populations in Japan, Hawaii, California, and/or other areas. The result of such a comparative epidemiological study would be to clarify the clinical features, patterns of distribution, and some possible risk factors of Alzheimer's disease.

RESEARCH PRIORITIES IN GERONTOLOGY IN JAPAN
Shuichi Hatano, M.D.

Abstract

The health status of Japanese elderly in three contrasting areas was studied through interviews. Many of the interview questions were similar to those used in a WHO cooperative study. Altogether 3,580 subjects responded (response rate 90.4%).

Japanese elderly were found to be healthier than those in other
countries. They reported little difficulty in conversation, working, living with the family, and participating in clubs. They expressed feelings of loneliness, but were generally content.

When younger, they found more meaning to life through activities and external interests such as work, social involvement, or hobbies, but as they grew older and began to contemplate "a peaceful ending of the day" human relationships such as friendship and watching grandchildren grow up assumed greater importance. The former were associated with morale and satisfaction, and the latter with satisfaction only. These mental health indicators were strongly associated with subjective assessment of health and social activities. Subjective health was related to various diseases, headed by heart diseases. Geographical variation was also noted. Factors such as these may be considered in planning health policy.

Not only mortality but also activities of daily living (ADL) were found to be strongly correlated with age and with history of stroke. Measures to prevent stroke and possibly rehabilitate stroke victims would be the most effective way of maintaining ADL in Japan.

ISSUES IN POPULATION AGING IN THE UNITED STATES

Dr. Philip M. Hauser

Abstract

Population aging and the extension of life are relatively new phenomena which are by-products of the transition from a rural, agrarian
society to an urban, industrial, mass society. A remarkable increase is underway in the "young" old (65-74), "medium" old (75-84), and "old" old (85 and over) that requires personal and societal adjustments. Key aging issues include adequate money flow, maintenance of health changes in living arrangements, continuation of life and friendship relationships, effective use of leisure time, concern with the future, and retention of earlier status. Resolution of these issues is hampered by the political disagreement on the role of government in general and, specifically, in respect of old age problems.

POPULATION AGING ISSUES IN JAPAN

Dr. Toshio Kuroda

Abstract

The objectives of this paper are to point out unique, drastic aspects of population aging of Japan, to suggest the seriousness of the impact of population aging on social and economic conditions, and to explore measures to cope with difficulties caused by an aging population.

Topics covered include introductory remarks on population aging, multiplicity of population aging, social and economic implications of population aging, and suggested policies.

A basic and necessary condition to solve problems in an aging society is concern from both the public and private sectors about aging and its serious effects. Fortunately this concern is now quite
prevalent among government planners, business enterprises, and private individuals. In view of the considerable extension of average life expectancy at birth as well as the remarkable improvement of mortality rates at older ages, some new policies, including an extension of retirement age to 70 years, are suggested. In spite of the many gloomy aspects of aging, a bright society with a better quality of life under stationary population conditions may reasonably be anticipated.

SOCIO-CULTURAL RESEARCH ON AGING IN JAPAN

Dr. Daisaku Maeda

Abstract

About half of this paper consists of an extensive list of books and papers on the subject of research on aging in Japan. It deals with major studies carried out since 1981 and published in professional journals before the end of 1985, as well as on-going studies for which interim reports have been presented and government surveys which were not reported in professional journals or at congresses, and does not take up theoretical papers which are not based on data collected through surveys in which the author(s) was/were directly engaged.

The paper points out that national surveys of the income of individual older persons are non-existent. It discusses work and retirement, family and living arrangements (including preferred living arrangements), support and care, and health-related socio-cultural research carried out through several nationwide government surveys
indicating that the health of Japanese old people is still improving steadily even though average life expectancy in Japan is already among the highest in the world. It calls attention to the fact that there are a great number of "bedfast" old in Japan. The multi-disciplinary longitudinal study of the effect of medical and socio-cultural factors on the health of old people, known as the "Koganei" study, is discussed. Also discussed is the problem of mentally disturbed old people, which is becoming more and more important in Japan with the increase in number of the very old. Another important topic—as indicated by the increasing number of papers on the subject—is the rapidly increasing cost of health services for the elderly.

The paper also deals with social services and social work, including general fact-finding surveys, users of social services, social service programs and social work methods, and with the emerging fields of social gerontological research, including subjective well being, housing, and death and dying.

OSTEOPOROSIS RESEARCH IN JAPAN
Dr. Itsuzo Shigematsu

Abstract

The frequency of osteoporosis is estimated to be increasing in Japan with its rapidly aging population. This paper briefly describes the present status and future prospects of osteoporosis research in Japan.
The diagnosis of osteoporosis has usually been made by x-ray examination of the spine, but recently photon absorptiometry and quantitative computer tomography are being used for the evaluation of bone mineral content. Many etiological studies are also being made, but it appears that the lower intake of calcium in Japan might have a major effect on bone metabolism. Further study is needed in this respect.

Plans are being developed at the Radiation Effects Research Foundation for a study of osteoporosis in which attention will be given to such factors as age, sex, nutrition, physical activity, and radiation exposure.
Report of the Task Force on

ALZHEIMER'S DISEASE AND RELATED DISORDERS

Chairpersons: U.S., Lon White, M.D.; Japan, Kazuo Hasegawa, M.D.

The task force, led by Dr. Hasegawa and Dr. White, met all day on Wednesday, November 13, and half day on Thursday in discussions of research on dementia in Japan and the U.S. During the course of these discussions, the following scientific presentations were made:

Dr. Homma — presented a report of research on genetic and chromosomal factors in dementia. An increase in aneuploidy, hyperdiploidy, and other signs of the diminished genetic stability which may occur in both normal aging and dementia was discussed.

Dr. Imai — presented an analysis of data supporting the utility of focal computed tomography in discriminating between normal aging, depression, and mild dementia.

Dr. Kachaturian — discussed NIA-supported research on dementia, with emphasis on the importance of diagnostic criteria and methodology, international studies, and studies to investigate possible causes and risk factors.
Dr. Teng — discussed the elements to be considered in choosing neuropsychological tests for the detection and evaluation of cognitive impairment in dementia.

Dr. Miller — discussed the importance of neuropathological observations in dementia research, and proposed a possible approach to the use of pathological endpoints in epidemiological investigations.

Dr. Cohen — discussed different research approaches; noted that research on the family and on care issues offers both immediate and long-term benefits; and noted the opportunities for research in these aspects of dementia in Japan and the U.S.

In addition, Dr. Denis Evans, a member of the global issues task force, described the study on dementia in East Boston, of which he is the principal investigator.

The remainder of the task force meeting was dedicated to the definition of four general recommendations, each accompanied by specific comments.

RECOMMENDATIONS AND COMMENTS

I. We recommend that efforts be made to maintain and extend communication between scientists involved in research on aging and dementia in Japan and the U.S.

Specific comments

1. It is agreed that bibliographies of key papers and documents
related to dementia be created and exchanged. In the U.S., an effort will be made to translate the most important of these from Japanese into English, and to make these translations available to all interested persons. Assistance will be provided by the task force members from Japan to identify which papers should be translated.

2. It was agreed that exchange of scientists for periods varying from 2 months to 2-3 years should be encouraged, and that mechanisms would be sought to allow such exchange. This would include exchange to and from the NIH, as well as to and from university centers of dementia research in the U.S.

GENERAL RECOMMENDATION II

We recommend the establishment of long-term, population-based, comparative and co-operative studies on dementia among Japanese-ancestry populations in the U.S. (Hawaii and/or the continental states) and Japan.

Specific comments

1. These studies of dementia should be aimed at improving our understanding of causes, patterns and determinants of progression, prevention, treatment, and alternative ways of providing care for patients and their families.

2. Representatives from the U.S. agree to formulate a plan to initiate and provide support for a series of studies to culminate in the establishment of the population studies as
recommended. This plan will be prepared and submitted to the appropriate office at the National Institutes of Health to be considered for funding.

3. The most essential objectives of the proposed series of studies will be to:

- test the hypothesis that residence in the U.S. is associated with an increased risk of Alzheimer's disease in persons of Japanese ancestry;
- test the hypothesis that culturally and socially different patterns of home and institutional care for the demented elderly in Japan and the U.S. are associated with different degrees of social and family burden;
- provide information to estimate the age-specific prevalence and incidence curves for Alzheimer's disease and vascular dementia in populations of Japanese ancestry persons living in Japan and the U.S.;
- describe the correlates, predictors, and patterns of progression of Alzheimer's disease and vascular dementia in these same populations; and
- describe relationships of the clinical diagnoses, clinical features, and progression with the neuropathological changes seen at autopsy.

4. These studies must be designed to allow comparison with similar studies of European-ancestry populations in the United States.
GENERAL RECOMMENDATION III

We recommend, as an essential first step leading to these comparative population studies, the development of instruments and methodologies to arrive at comparably accurate and valid diagnoses of dementia, for assessment of levels of cognitive impairment, and for measurement of the severity of disease.

Specific comments

1. In the U.S., we will attempt to define the essential components of a two-stage case identification and assessment process. These components would include: (a) methods for enumeration, sample frame identification, and study recruitment; (b) methods and instruments for screening and measurement of levels of functioning which are broadly acceptable, brief, acceptably efficient, and minimally sensitive to culture and language differences; (c) instruments and methods for the collection of information regarding the demographic, personal, health, and social characteristics of subjects; and (d) instruments and methods for the clinical evaluation (= phase two) of selected subjects to identify and classify cases of dementia.

2. When initial development has been accomplished, the instruments and methods will be pretested in Japan and the U.S.

GENERAL RECOMMENDATION IV

We recommend that work begin immediately to develop a screening and initial assessment instrument to identify demented subjects in
population studies, and that these be tested as extensively as possible in the U.S. and Japan during the next year.

Specific comments

1. Task force members have agreed to identify the tentative composition of this instrument and to confirm its composition by consultation with other experts in Japan and the U.S.

2. When the composition of the instrument is agreed upon, the component instruments will be brought together, a composite form will be created, and it will be submitted to Dr. Hasegawa in Japan for review, approval, and translation.

3. When the translation is complete, testing will begin in Japan, California, and Hawaii to compare it with other criteria, and to study the instrument's internal consistency and construct validity.

Report of the Task Force on
GLOBAL CONCEPTS OF HEALTH AND AGING

Chairpersons: U.S., Dr. Joan Cornoni-Huntley; Japan, Dr. Shuichi Hatano

The first issue approached by the task force was deciding which area within the broad designation "Global Concepts of Health and Aging" was most appropriate for joint research activities between Japan and U.S. investigators. Agreement was reached that the highest priority should be given to identifying predictors of institutionalization and other forms of loss of independence among the elderly populations of
both countries.

This decision was reached with the understanding that the full design of a joint research effort in this area was a challenging task which would require considerable time and effort. Agreement has been reached within the task force on the issues to be studied and the most important data needed to address them. Agreement has also been reached in certain specific areas, and a mechanism to continue the development of the joint undertaking is proposed. Social and cultural differences between the U.S. and Japan and differences in the way medical care is organized and delivered must be recognized in the development and use of data collection instruments. The existence of these social and cultural differences, however, also provides the potential for substantial insight into the issues of interest.

Design of a Joint Research Effort Concerning Predictors of Institutionalization and Other Forms of Loss of Independent Living in the Elderly

1. Overall Concepts to Be Studied and General Design of the Effort

In aging populations, certain individuals progress from health to increasing disability leading to increasing dependence on support mechanisms within the community and then to removal from the community to a hospital, nursing home, or other long-term care institution as informal and formal community support mechanisms become inadequate. Our understanding of this process, especially the determinants of
utilization of support mechanisms and institutionalization is limited, however.

The major concepts of interest as exposures in this proposed joint effort include age, sex, living arrangement, social supports, and levels of disability. The major outcomes of interest are utilization of community support mechanisms, hospitilization experience, and long-term care institutional experience.

A joint Japan-U.S. research effort might be constructed in several ways. On the surface, the easiest approach appears to be parallel cross-sectional studies, but such studies have substantial disadvantages, including the difficulty of inferring causality from cross-sectional relationships and substantial uncertainty as to whether differing cross-sectional relationships observed in different countries represent real differences or only the effects of variation in the administration of instruments or the interpretation of questions by the respondents. There was strong agreement among task force members that parallel longitudinal studies were greatly preferable, and that efforts should be focused in this direction. Comparisons between such parallel longitudinal studies will be of interest so long as the concepts are similar and issues of interest are approached in a similar fashion. If resources permit, closer coordination between studies, including cross-training of interviewers and other personnel, would increase the value of the data still more.

The unique advantages of a Hawaii setting were recognized by the task force. Japan and the U.S. differ both with respect to culture and
medical care delivery systems. The inclusion of a cohort of ethnic Japanese-Americans living in Hawaii, having a Japanese heritage but a U.S. system of medical care, would enhance the ability to distinguish differences in outcome due to cultural factors from those due to delivery of medical care. Therefore, an approach using three study cohorts: one in Japan, one in the mainland U.S., and one in Hawaii, is proposed.

2. Translation of the Concepts into Specific Data Elements
   a. Measures of Loss of Independent Living

   A useful classification of types of loss of independent living might be divided as follows:

   Informal Community Supports — These are usually provided by family and friends. In Japan, there appears to be a strong tendency for care of an elder to be the responsibility of a single child or other relative.

   Formal Community Supports — These include transportation services, preparation and delivery of meals, housekeeping services, and comprehensive home medical care programs. These formal community supports are growing rapidly in both countries and appear to be much more common in the U.S. than in Japan at the present time.

   Hospitalization — There appears to be a prominent difference in delivery of this aspect of medical care between Japan and the U.S., with hospitals being the usual site of longer-term care, for months or even years, in Japan, while hospital stays are much shorter in the U.S.
Long-Term Care — Again prominent Japan-U.S. differences are noted, with nursing homes being common in the U.S. but very uncommon in Japan. A recent feature of health care in Japan is the development of Chukan Shisetu, facilities with limited health care services intended to be intermediate between nursing homes and hospitals. These facilities may reduce hospitalizations for many elderly persons.

Ascertainment of hospitalization and institutionalization experience will likely need to be obtained from follow-up interviews of participants. At the present time, it does not seem achievable to obtain individual identifying information linked to hospital experience from comprehensive independent data sources in both countries.

b. Disability

For the purposes of the proposed study, disability measurements may be divided into measures of physical function and measures of instrumental disability. The task force concluded that more uniformity between countries could be achieved for the measures of physical function, and that, even within this area, Japan-U.S. differences must be carefully considered. The measures of physical function thought to be most useful may be classified as follows:
Certain Measures of Impaired Physical Function

<table>
<thead>
<tr>
<th>KATZ ADL</th>
<th>Rossow-Braslau</th>
<th>Nagi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Items thought</td>
<td>1. Walking</td>
<td>1. Walking about 1/2 mile</td>
</tr>
<tr>
<td>to be</td>
<td>2. Grooming</td>
<td>2. Walking up/down stairs</td>
</tr>
<tr>
<td>reasonably</td>
<td>3. Eating</td>
<td></td>
</tr>
<tr>
<td>similar in</td>
<td>4. Dressing</td>
<td></td>
</tr>
<tr>
<td>Japan and U.S.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Items thought</td>
<td>1. Bathing</td>
<td>1. Heavy Housework</td>
</tr>
<tr>
<td>to have large differences</td>
<td>2. Toileting</td>
<td></td>
</tr>
<tr>
<td>in the amount of activity</td>
<td>3. Bed-Chair</td>
<td></td>
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<tr>
<td>required between Japan and the U.S.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The activities denoted by measurements of instrumental function were thought to show great variation between Japan and the U.S., so that analyses considering these variables might not be comparable between countries.

Other important measures of functional ability include vision, hearing, urinary incontinence, and fecal incontinence. In general, it was thought the comparable measures could be used in both countries for these.
c. Social Support

Certain elements of the social situation were thought to be possibly important modifiers of the relation between level of disability and utilization of medical care. These elements include:

- Household composition;
- Relationship of the caretaker to the elder and the other responsibilities of the caretaker including outside work or other dependents, age of the caretaker;
- Housing including housing type, number of rooms, floor of the building, whether a toilet is on the same floor;
- Number of children;
- Number of other close relatives; and
- Number of friends other than children and relatives.

Social relationships among elders in Hawaii may require special consideration. Some Japanese immigrants to Hawaii, having left most or all blood relatives in Japan, may have developed equally close ties with friends ("calabash relatives") in Hawaii.

d. Other Data Elements

Measures of insurance coverage suitable for each location should be included because of the effect on availability of medical care.

Other possible measures to be considered include: measures of socioeconomic status (income, occupation, educational level), measures
of life satisfaction and other positive aspects of health, indices of depression or decreased morale, measures of attitude toward death, and measures of cognitive impairment. The task force did not reach a firm decision on whether these latter items should be included. In many cases, the decision will be difficult and will depend on the attitude of local investigators, availability of funding, and burden on the respondents. It is anticipated that resolution of these remaining items will be reached at subsequent meetings.

3. Choice of Study Cohorts

In the mainland United States, the most appropriate cohort appears to be all or some portion of the four cohorts forming the Established Populations for Epidemiologic Studies of the Elderly project, sponsored by the National Institute on Aging. Use of these cohorts will require obtaining the agreement of all of the principal investigators; this has not yet been done. Funding difficulties are not expected to be prominent, since the additional resources required will be fairly small.

In Hawaii, the most appropriate cohort appears to be some subset of the groups identified for the Japan-Hawaii Cancer study and Honolulu Heart study, with the inclusion of female relatives. Difficulties to be overcome include the purely male composition of the originally identified group. In addition, substantial new funding is required and has not yet been identified or secured.

In Japan, a number of cross-sectional studies which could be converted to longitudinal studies exist, as well as several smaller
longitudinal studies. Choice among those several possibilities is not yet clear and will require continuing discussion among the Japan investigators as well as the entire task force. Funding difficulties may be anticipated also, but it is expected that reasonable progress in both of these areas may be made in the coming year.

4. Mechanisms for Continuing the Development of the Research Effort

Fuller exchange of information between Japan and U.S. investigators will be necessary for the continued development of a successful joint effort. Three components were identified as most important. First is the identification of the most relevant articles in the Japanese literature and the translation of these articles into English. Dr. Daisaku Maeda of the Tokyo Metropolitan Institute of Gerontology will lead the effort to identify appropriate publications. Dr. Joan Cornoni-Huntley will attempt to identify mechanisms within the U.S. National Institutes of Health and National Library of Medicine to fund and accomplish the translation. Second is the exchange of information not usually included in research reports but extremely useful in the design of a joint effort, including data collection instruments and manuals of procedure. Dr. D. Maeda and Dr. Cornoni-Huntley will coordinate the efforts in Japan and the U.S. respectively. The third component is the exchange of scholars between Japan and the U.S., which would greatly enhance the opportunity for a successful joint effort. It is anticipated that existing mechanisms can be used to accomplish this goal.
5. Task Force Recommendations

1. The task force recommends that a joint Japan-U.S. research effort to identify predictors of institutionalization and other forms of loss of independent living in elderly populations be undertaken. The study should be longitudinal and include cohorts in Japan and the mainland U.S., and among Japanese-Americans in Hawaii.

2. The task force recommends fuller exchange of information between Japanese and U.S. investigators in this field. Specifically:
   (a) relevant Japanese language literature should be identified and translated into English with National Institutes of Health and National Library of Medicine support, if possible;
   (b) information not usually included in final research reports including questionnaires and manuals of procedure should be fully exchanged; and (c) exchange of scholars in this area between Japan and the U.S. should be undertaken using existing mechanisms of support.

3. The task force recommends that a meeting to consider progress on these issues be held in approximately one year. This meeting should include formal presentations of interim results from the Established Populations for Epidemiologic Studies of the Elderly cohorts in the United States, presentation of material regarding the suitability and availability of a cohort of Japanese-Americans in Hawaii, and presentation of material permitting the choice of an appropriate cohort in Japan.
I. Introduction

The Task Force on Osteoporosis has reviewed research data already available in the U.S. and Japan that could be used for descriptive epidemiologic comparisons. Based upon these data, the needs for additional information and data have been identified and specific hypotheses have been developed. Methodologic considerations have been discussed at some length and the use of common methods has been strongly recommended. However, this would not preclude the pursuit of some independent research goals based upon local needs and resources. Based upon known resources available, some specific collaborative research plans have been outlined.

Importance: Osteoporosis is recognized by the task force as a major public health problem in developed countries that is further exacerbated by aging of the population. The medical, social, and economic costs of the disease are enormous. The potential prevention of the disease is hampered by inadequate knowledge, particularly about risk factors and risk predictors. Longitudinal cohort studies are recognized as the most powerful tool for answering these questions. However, the expense and logistics of such studies necessarily limit their size and numbers. Therefore, the ability to pool data from both countries has
substantial potential for answering important research questions which cannot be addressed in either country alone. The opportunity to perform these studies in a Japanese-American cohort is unique, and the task force strongly recommends that this opportunity not be missed. The additional possibility of simultaneously studying a cohort of 10,000 predominantly Caucasian individuals on the U.S. mainland could substantially increase the power of the study.

II. Review of data already available

A. Data collected by the Kuakini Osteoporosis Study; KOS (interval = 2 years, Population = Japanese in Hawaii age 30 - 85; 1700 females, 1400 males)

1. Spine xrays
   a) Radiologist grading
   b) Dimension measurements - very objective

*2. Bone mineral measurements
   a) Distal radius (~ 30 - 50% trabecular, non-weightbearing)
   b) Proximal radius (~ 95% cortical, non-weightbearing)
   c) Os calcis (~ 95% trabecular, weightbearing)
   d) Lumbar spine (~ 40 - 60% trabecular, weightbearing)
   e) Hip (~ 50 - 70% cortical, weightbearing)

* Unique: individual bone loss rates are already available on this large population
3. Interview

a) Medication survey and diet supplements (can share
dictionary with multicenter group)

b) Fracture history; causes and sites
c) Diagnosed chronic diseases
d) Reproductive history
e) Diet survey

f) Physical activity: current exercises and occupation,
   plus Framingham Study instrument (1981)
g) Family history of osteoporosis

h) History of back pain

i) Smoking and drinking (1981)
j) Grip strength

k) Blood pressure

l) Skinfold thickness

m) Frequency and consequences of falls

n) Calcium absorption and vitamin D metabolites (subset)

4. Serum stored at -70°C

B. Data collected by RERF (Radiation Effects Research Foundation)

Population: A cohort of 20,000 A-bomb survivors with a 1:2 M/F ratio and a 2-year examination interval since 1958.

Approximately 9,000 were examined at the latest cycle. Age 40+ in all as of 1985

(An asterisk [*] indicates unique data not available on other populations)
1. Spine x-rays
   a) Radiologist's grading

2. Interview
   a) Height, weight
   b) Blood pressure
   c) History of hip fractures
   d) Medications
   e) Chronic diseases
   f) Reproductive history
   g) Diet survey (at a previous exam)
   h) Routine physical examination. Physiological markers of aging (visual acuity, skin elasticity, etc.) during a previous cycle
   i) Physical activity: Current exercises and occupation
   j) Smoking and drinking

3. Blood
   a) Stored serum is available on many subjects, but need permission to use it
   b) Routine analyses: hematology and serum total cholesterol, for all. Other markers for selected persons

4. Radiation exposure (from A-bomb)

C. Data from National Health Survey - JAPAN

1. National Nutrition Survey providing dietary intake of nutrients
2. National Health Survey and National Patients' Survey providing fracture epidemiology

D. Data collected by Dr. H. Orimo (Population: Japanese in Japan, 50% female, all ages)

1. BMC of proximal radius
2. Age, height, weight
3. Xrays
   (a) Spine xray: diagnose fracture
   (b) Hand xray: microdensitometry
4. Serum markers: subset
   Vitamin D metabolites

E. Instruments currently being used which need to be standardized:
   (Note: all instruments will be exchanged by the three studies for comparison and standardization of responses.)

1. Radiologist's grading of xrays (spine and hip)*
2. Interview
   a) Collection of medication and diet supplement data – should be detailed
   b) Reproductive history – definition of onset and completion of menopause
   c) Fractures: Causes and sites
   d) Dietary survey: Calcium-rich foods
   e) Physical activity instrument
   f) Frequency and consequences of falls
3. Bone mineral measurements
   a) Exchange bone phantoms to evaluate inter-site variability and/or differences

* Have a subset of films from all studies read by a single observer to determine correlation for grading x-rays between studies

III. Standardization of Methodologies

A. Radiographs:
   1) Use of both thoracic and lumbar lateral spine views recommended for both Honolulu and Hiroshima cohorts
   2) A cross-check of grading systems would be desirable, by exchanging films on a representative subsample
   3) Measurements of vertebral dimensions could be standardized by sharing of digitizing software currently in use in Honolulu; a cross-check of operator performance could also be made on exchanged films

B. Photon absorption and CT methods have been reviewed from two perspectives:
   1) Those techniques that have research and potential clinical utility as predictors of fracture risk, and
   2) Procedures which would be feasible for determination of longitudinal bone loss rates. The primary requirements for each research use have been discussed

For purposes of fracture risk prediction on a wide scale, the
requirements are:

a) Accuracy and precision

b) Relationship to fracture incidence

c) Feasibility and practicality - Cost

   Safety (radiation exposure)

   Time

For purposes of loss rate determinations, the overriding requirement is high precision, and a secondary requirement is feasibility. Additionally, the sites chosen for measurement should reflect the relative cortical and trabecular effects of multiple agents, including physical activity, estrogen deficiency, and drug use (particularly estrogen use and thiazide use.)

Since precision is the overriding requirement for longitudinal studies, the data was reviewed for the available technologies. The radiographic methods, including metacarpal cortical thickness, Singh index, and spine xrays may have some potential as predictors of fracture risk, although probably not early predictors. The precision (coefficient of variation) of photon absorptiometric measurements are in the following range:

a) Proximal radius and os calcis, 1.07 to 1.16%

b) Distal radius, 1.02%

c) Lumbar spine (DPA), 1.77% cross-sectionally, but up to 5% longitudinally

d) CT of spine, 3.4 to 11.0%
The Honolulu Study (KQS) is currently measuring four sites: proximal radius, distal radius, lumbar spine, and os calcis; addition of hip measurements is projected. The task force recommends use of similar technology for measurement of the extremities in the RERF cohort. The multi-center trial on the U.S. mainland will employ the same distal radius BMC measurement site as the KOS study, in addition to the Singh index on hip x-rays. To the extent feasible, it is considered desirable to standardize the extremity BMC measurements for this cohort also.

**Standardization of Methodology**

In addition, the following methods will need to be standardized between studies:

"Core" interview items

a) Sites and causes of fractures (use Kuakini instrument?)

b) Frequency and consequences of falls (use Dr. Cummings instrument?)

c) Activities of daily living (ADL) (use Philadelphia Geriatric Center instruments?)

d) Dementia - recall after distraction; trail-making, etc.

e) Medication and dietary supplement dictionaries (use Kuakini data)

f) Reproductive history; definition of menopause

g) Physical activity
IV. Information needs and questions to be addressed

A. Except for hip fracture incidence figures based upon hospital records, reliable fracture incidence figures are not available in either country. Hip fracture figures are available in the U.S., and comparable data from Japan is needed. These may be available on a nationwide basis; if not, such data is available on the RERF cohort. Question: is there any difference in hip fracture incidence between Japan and the U.S.?

B. Additions to the questionnaires of each study would permit collection of data relating to functional disability and mental status. Question: With regard to hip fracture, are there significant morbidity and mortality differences between the U.S. and Japan, and particularly between the Japanese in Hawaii and those in Japan?

C. Reliable prevalence figures for osteomalacia are not available in either country. Since the diagnosis is ultimately dependent upon bone biopsy, this issue cannot be addressed in an epidemiologic study. However, both the Hawaii and U.S. mainland cohorts will be characterized for 25(OH)D₃ and 1,25(OH)D₃ levels in a subset. It is recommended that the two laboratories performing these assays be cross-checked with blinded samples, and that specimens be analyzed in a single batch. The season will be noted when U.S. mainland and Japanese samples are drawn. The use of thiazides will also be
noted. Approximately 100 subjects from Hawaii and Hiroshima will have vitamin D levels measured; an estimated 300 U.S. mainland subjects will have these measurements. The possibility of similar measurements in the RERF cohort is desirable, so that at least any relative differences between the two countries could be addressed.

D. The three studies have a potential enrollment of nearly 16,000 individuals. Thus, potential risk factors and risk predictors could be evaluated not only for overall fracture risk (at all skeletal sites), but also for site-specific fracture risk with particular emphasis upon wrist, hip, and spine fractures.

Questions:

a) Can fracture risk at any or all sites be predicted with BMC measurements?

b) Can fracture risk be predicted by any risk factors, either alone or in combination? These risk factors include bone loss rates (Honolulu), physiologic aging score (Hiroshima), propensity to fall (U.S. mainland), and multiple additional variables including initial BMC.

E. The U.S. mainland study will establish a serum bank for future retrospective studies of biochemical variables that might be related to fracture risk. A similar serum bank is proposed for
Hawaii, pending funding. A particular aim of the Hawaii serum bank is the retrospective evaluation of biochemical mediators of bone loss, which can be related to individual bone loss rates at multiple skeletal sites. To the extent feasible, a similar bank in Hiroshima would be of value, recognizing the particular inherent limitations and constraints of this cohort.

F. A simple comparison of age-adjusted BMC means between Japan and Hawaii is already in progress and can be expanded with the addition of the RERF cohort. If the apparent differences persist after appropriate adjustment for body size, the potential effects of estrogen and thiazide use will be investigated. Estrogen use in postmenopausal women is reportedly uncommon in Japan, but is increasing in the U.S. A potent factor such as this could account for differences in population means for women. If any BMC differences persist after adjustment for drug use, new hypotheses regarding dietary and cultural factors could be tested.

G. Peak bone mass is probably a strong determinant of ultimate fracture risk. Peak bone mass represents a composite of multiple events during childhood and adolescence. What is the effect of radiation exposure upon skeletal maturation? Is the age at exposure of importance? Are there identifiable endocrine or menstrual disorders, related to radiation
exposure, that have interfered with attainment of mature bone mass? Is there a higher prevalence of osteoporosis among the exposed? Or are the survivors more resistant to radiation and thus less susceptible to osteoporosis?

H. Is prior vertebral fracture a risk factor or predictor for subsequent hip fracture? Vertebral fracture incidence figures are already available for both the Hawaii and Hiroshima cohorts and hip fracture incidence is being monitored. These data will also be obtained for the U.S. mainland study. However, pooling of data from the three groups may be needed to generate sufficient numbers of hip fractures to test this hypothesis.

V. Research Plan

It is anticipated that new data collection in Hiroshima and on the U.S. mainland will commence in July, 1986, to coincide with the sixth cycle of the Kuakini Osteoporosis Study in Honolulu. All questionnaires and data sheets will be shared and all attempts made to maximally standardize procedures. The Hawaii group will assume responsibility for coordinating these efforts. The following investigators have been designated as the key contact persons at each institution:

Hiroshima: Dr. Yutaka Hosoda
Alternates: Dr. H. Sasaki or Dr. S. Fujiwara

San Francisco: Dr. Steven Cummings
Alternate: Dr. Michael Nevitt

Honolulu: Dr. Richard Wasnich
Alternates: Dr. Philip Ross or Dr. Katsuhiko Yano.
Abstract

The Honolulu Heart Program (HHP) is a prospective epidemiologic investigation of coronary heart disease (CHD), hypertension, and stroke among men of Japanese ancestry who were born from 1900 through 1919 and were living in Hawaii in 1965. The study began in 1965 as part of a tripartite study comparing the frequency of CHD and stroke and related factors among Japanese male populations in three geographic regions—Japan, Hawaii, and California. It has confirmed the reported gradient in CHD and stroke mortality, prevalence, and incidence among these Japanese men.

Parallel studies of autopsy findings and population characteristics have supported the hypothesis that migrant Japanese men have a higher risk of CHD and a lower risk of stroke than indigenous Japanese men because of westernization of their lifestyles and environmental changes through migration. Also, a long term follow-up of the 8,006 men who participated in the initial examination of HHP has provided valuable data on the incidence of cardiovascular disease and on biologic, lifestyle, and psychosocial factors possibly related to the etiology of CHD, hypertension, and stroke.
These studies have also been expanded to uncover the characteristics which predict freedom from the major chronic diseases. Of more than 30 variables examined in multivariate analyses, those of blood pressure, obesity, cigarette smoking, alcohol consumption, serum glucose, uric acid, and triglyceride were inversely associated with staying healthy; on the other hand, forced vital capacity and being born in Japan were directly associated with good health. Of the nine variables, blood pressure was the strongest discriminator between healthy status and all categories of disease, while cigarette smoking and alcohol consumption were the next most important factors.

CANCER AND AGING IN HAWAII
Dr. Abraham Nomura

Abstract

The people in Hawaii enjoy about the longest life expectancy in the world. Hawaii residents who have lived to age 65 can expect to live almost 20 years longer. This is encouraging and reinforces the hope that many will live long, productive lives. In order to accomplish this, further reduction is needed of the frequent causes of mortality among the elderly in Hawaii. Among men of all ethnic groups in Hawaii who died between the ages of 65 to 84, 36% succumbed to heart disease, 27% to cancer, 8% to stroke, and 29% to all other causes. In the cohort study population of Japanese men at Kuakini Medical Center, cancer is
the main cause of death among subjects who have died between the ages of 65-84. Thirty-six per cent died from cancer, 21% from heart disease, 10% from stroke, and 33% from all other causes. Lung cancer accounted for 23% of the deaths due to cancer, stomach cancer 18%, large bowel cancer 17%, and all other cancers 42%.

It is not surprising that lung cancer is the leading cause of death due to cancer. The 5-year relative survival rate from this cancer is poor among Japanese men. It is 12% for lung cancer compared with 25% for stomach cancer, 51% for rectal cancer and 61% for colon cancer. Because cigarette smoking is strongly associated with lung cancer, the benefits of not smoking cigarettes are very obvious.

Since the cancer cohort study began at Kuakini Medical Center in 1971, it has made a number of observations with regard to the identification of risk factors related to different cancers. Some of the observations are presented here. Elderly subjects who have a high body mass index (over 20 pounds overweight) have a colon cancer risk that is 3.5 times greater than others who have a low to average body mass index. Pre-diagnostic serum beta-carotene levels are lower in lung cancer cases than in normal subjects even after taking cigarette smoking into account. Foods rich in beta-carotene include the green-yellow vegetables and yellow-orange fruits, such as carrots, broccoli, and cantaloupe. Persons who consume the alcohol equivalent of more than three beers a day have three times the risk of developing rectal cancer than subjects who do not drink alcohol. These data suggest that to
extend longevity by reducing cancer risk, it would be helpful to avoid obesity and alcohol and to increase the intake of beta-carotene.

OSTEOPOROSIS RESEARCH IN HAWAII

Dr. Richard Wasnich

Abstract

Fracture incidence and prevalence have been compared to multiple known or suspected risk factors and other variables in a longitudinal study of 1400 men and 1200 women. Weak positive associations of bone mineral content (BMC) have been found with exercise, milk, calcium, and vitamin D. Both estrogen and thiazide use have strong positive associations with BMC and comparable relationships with fracture prevalence; the effects of the two drugs appears additive, and only 16% as many fractures were observed in this group as compared to the control group. Preliminary analyses of fracture incidence at all skeletal sites indicate a significant relationship to BMC, with the os calcis BMC measurement showing a significant, monotonic relationship to both spine and nonspine fractures. Because of its ease of measurement and low cost, os calcis BMC deserves further evaluation in prospective studies of fracture incidence. The potential ability to predict fracture risk prospectively would be very useful in the planning of objective and rational osteoporosis prevention programs, and could have substantial impact upon future health care costs related to osteoporosis.
THE JAPANESE WELL-ELDERLY: 88 YEARS AND OVER

Dr. Satoru Izutsu

Abstract

Background

This is a preliminary report of a study on the Japanese elderly in Hawaii. 1985 is the hundredth anniversary of the coming of the first Japanese contract laborers to Hawaii — the Kanyaku Imin. To celebrate, the Governor of Hawaii, George Ariyoshi, sent out a call in the fall of 1984 to have all those who are 88 and over to come forth so that he might recognize them as having contributed to the building of the state of Hawaii. He received 1,025 names. The registration included names, date of birth, addresses, and phone numbers.

On Oahu, 625 people registered. Of these, 200 who are not in institutions were randomly selected. A problem faced almost immediately after we sent out bilingual letters and a self-addressed card to invite them to participate in the study was that out of every five, at least two had either died or had become too ill. To date, 63 have been interviewed. It takes little over an hour to administer a full questionnaire. Fifty-seven have been roughly analyzed, and the following are our findings to date.

Interviewers

The interviewers were a bilingual social work instructor from the University of Hawaii and three bilingual graduate students. To increase reliability, the interviewers met the participants in pairs so that
there would be uniformity. All of the interviewees seemed to enjoy the interviews. Forty-four percent required no assistance, but for the majority there was a family member present and at times the family member and the interviewee got into arguments about accuracy of dates and other details.

Averages

The average age of the interviewees was 91.4 years, education was 6.5 years, age at immigration to Hawaii was 18.5 years, mean year of arrival was 1912, and number of years in Hawaii was 72. The average age of death of their fathers was 69.3 years and of their mothers, 71.5. Each had an average 1.1 siblings who lived beyond 80. The mean number of children of subjects was five, 13 grandchildren, and 11 great grandchildren, with a total average of 29 descendents. The average height was 62 inches for the men and 57 inches for the women; average weight 109 pounds for the men and 100 pounds for the women. The number of hours spent watching T.V. every day was 2.6 hours. The number of hours that they dozed off to sleep during the day was 1.2 hours. The number of hours they slept at night was 8.2 hours. They quit working fulltime at 67.3 years of age. One-third of the interviewees were men and two-thirds were women. Eighty-four percent received some type of public funding such as social security payments.

Occupational Background and Language

One-half were unskilled. Not all remained on the plantations as laborers. Ninety-eight percent retained fluency in speaking Japanese.
Half of the people interviewed could not read or write Japanese. Only 3 1/2 percent spoke English fluently. Eighty-two percent spoke English seldom or not at all.

Birth Order

Usually, the eldest son did not come to Hawaii. Fifty-five percent were older siblings, 14 percent were middle siblings, and 30 percent were younger siblings.

Marital Status

All were or had been married. Zero percent were divorced or separated, 80 percent widowed, 20 percent lived with their spouses, 88 percent believed in being married only once, 20 percent owned the homes in which they lived, and 54 percent lived with relatives.

Caregivers

Eighty percent were relatives, 79 percent of the 80 percent of caregivers were women, 18 percent were spouses.

Alcohol Consumption

Eighty-two percent drank very little or not at all. Of these, 62 percent were males and 95 percent were females. Before the age of 60, 50 percent of the males and 97 percent of the females drank very little or no alcohol.

Smoking

Ninety percent of the males and 97 percent of the females do not smoke. But, before the age of 60, only 24 percent of the males did not smoke, and 94 percent of the females did not smoke.
Predictors of Performance on the Hasegawa Scale

The best predictors were reading and writing English, mobility, orbit of activity, and education, but completely opposite was amount of sleep. Test scores were generally inversely related to age and the amount of time spent sleeping or lying down. On the Hasegawa Scale of 34 possible points, in Japan the males scored 20.2 and the females scored 12; and in Hawaii, the males scored 19.1 and the females scored 20.1. A speculation is that some very smart and/or aggressive women came from Japan to Hawaii.

Hearing - No problem for 33 percent of the males and 61 percent of the females.

Belonging to Ethnic Organizations - Eighty-two percent, evenly distributed between the sexes, belonged to Japanese organizations. Sixty-three percent never attended Japanese celebrations, and eleven percent often attended Japanese celebrations.

Never Used Wheelchair - Eighty-nine percent.

Never Used Cane or Walker - Fifty-eight percent.

Burden to the Family - None: Twelve percent.

Very little: Sixty-one percent.

Moderate: Nineteen percent.

Great deal: Seven percent.

In conclusion, these are just brief preliminary data concerning the 88+ year-old pioneer emigrants from Japan to Hawaii. Co-investigator Dr. Charles Rose has coined the term "geriatric astronauts" to describe them because they are a very select group of survivors. If we can
discover the factors that have kept them well and long-lived, more of us may in future reach the heights that they have attained.

ALZHEIMER'S DISEASE AND RELATED DISORDERS

Additional Notes from Discussions by Dr. Abraham Nomura

Dementia is a tragic disease not only in terms of its effects on individuals, but also in terms of its high frequency. It is estimated that there are now more than two million Americans with moderate to severe dementia, with approximately 8.5% of people 65 years of age or older being affected.

Dementia can be defined as a global deterioration in intellectual function with progressive impairment of memory, learning, judgment, speech, and orientation. It is very important to identify subjects with reversible dementia, since it can be effectively treated. Depression, drug intoxication, thyroid disease, anemia, and nutritional disorders are some of the conditions which can lead to reversible dementia.

Organic dementia in the U.S. can be classified into the following categories: Alzheimer's disease, 50-60%; vascular dementia, 20-30%; mixed Alzheimer's disease and vascular dementia, 2-10%; and other, 10-15%. The prevalence of all types of dementia can be roughly approximated by starting with 1% at age 60 and then doubling at each 5-year age interval. That is, it would be approximately 2% at 65, 4% at age 70, etc.

From available data, it is estimated that the prevalence of organic
dementia is 4.7% among subjects age 65 or older in Japan, whereas the U.S. prevalence rate accepted by most American investigators is approximately 8.5%. It is difficult, however, to make a direct comparison of these rates. The criteria for defining a case of dementia, especially in terms of disease severity, may be different between the two countries. Guidelines for the separation of a case of Alzheimer's disease from vascular dementia may also be different. Another possible explanation of differences between Japan and the U.S. centers on selection bias. If the existence of dementia affects the likelihood of participation in a study in different ways between two population groups, then the difference in disease prevalence is not really due to the biology of disease, but to study selection factors. It should also be considered that Alzheimer's disease and vascular dementia may occur with similar incidence in Japan and the U.S., but differential survival patterns can obscure the similarity.

In assessing research priorities, the issue of greatest importance is to identify causes and pathogenetic mechanisms. The next priority is to have strategies for prevention, and the lowest priority is to formulate effective treatment modalities against dementia. An important consideration in this regard is the development of efficient methods for early diagnosis.

The mission of the task force is to foster collaborative efforts between the U.S. and Japan in conducting studies of dementia. The first task is to identify the major research questions. The next task is to address study objectives by formulating standardized methods of
measurement which can be used for cross-national studies. In order to do this, specific and comparable research instruments need to be developed. Finally, the task force needs to make specific recommendations about studies that can be done within the available resources.

Much has been learned since the first U.S.-Japan Conference on Aging. There are now opportunities to learn more about the basic biology and pathogenesis of dementia. Hopefully, there will be further coordination of joint efforts in this direction.

GLOBAL ASPECTS OF AGING

Additional Notes from Discussions by Dr. Satoru Izutsu

Dr. Cornoni-Huntley reported that the National Institute on Aging was established in 1975 to meet the urgent need for new knowledge on the aging process and the needs and problems of older people. The NIA research programs are concerned with identifying new ways of improving the quality of life of older Americans. Estimates of the extent of health problems of the elderly are greatly needed. There are few data available to meet these needs. Estimates of prevalence, incidence, and severity of problems are needed, as well as the identification of associated factors which may be predictive of probability of future needs. It is necessary to have in-depth studies of representative samples of an entire community of elderly. These studies should be prospective and should emphasize standardized methodology.
Knowledge of associated factors influencing the health status of the elderly is limited. To extend the knowledge, in 1980 the National Institute on Aging initiated a project entitled "An Established Population for Epidemiologic Studies of the Elderly." The results of this project are expected to be to identify and describe the distribution of conditions, problems, and health status among the elderly, and identify the risk factors that predict changes in the health status and problems of the elderly.

Populations of elderly are being studied in four locations: Durham, North Carolina; East Boston, Massachusetts; Washington Counties, Iowa; and New Haven, Connecticut. The study was designed to acquire longitudinal data over a five year period. The baseline survey consisted of a section common to all three centers, including identical questions on physical, social, and cognitive functioning.

The value of this project lies in the longitudinal design, which will allow for the analyses aimed at identifying risk factors of disease, disabilities, impairments, and institutionalization. Information being generated by these studies will provide an improved knowledge base for understanding the needs and health care utilization patterns of the elderly.

Dr. Shuichi Hatano reported that a longitudinal study on health promotion and maintenance among the elderly was also being undertaken in Japan. It is based on the fact that a growing proportion of elderly are healthy. The ideas are similar to those presented by Dr. Huntley.
Dr. Toshiharu Fujita reported on a study of relatively healthy elderly Japanese. The study has three aspects: subjective well-being, subjective health, and ADL (Activities of Daily Living). Three contrasting geographical areas were selected: Shinagawa-ku in the south central part of Tokyo; Shimizu City, a medium-sized rural township on the Pacific coast; and Tottori Prefecture, a rural area along the Japan sea.

Factors affecting subjective well-being appear to include morale, which includes feelings of anxiety about starting something new, feelings of uselessness, and becoming tired easily; life satisfaction, which includes satisfaction with life now and in the past, feelings of being respected, and loneliness; subjective health; social interaction; and ADL, which increases in difficulty for the disabled elderly, who become more dependent on their families. Age and a history of stroke were identified as playing key roles in determining the level of dependency.

Mr. Nobuo Maeda discussed the reasons why elderly Japanese stay longer in hospitals, compared to elderly Americans. One concern is that in Japan, hospitals may be seen by the elderly (and especially the very old) as a place to die. It may be that primary health care, including ambulatory care, should be provided for the frail elderly in their own community.
OSTEOPOROSIS

Additional Notes from Discussions by Dr. Richard Wasnich

Since osteoporosis is generally considered to be preventable, but not reversible, the NIH Consensus Development Conference on osteoporosis recommended "studies to develop accurate, safe, and inexpensive methods for determining the levels of risk for osteoporosis in an individual." The term "risk" is widely misunderstood and mis-used. Therefore an understanding of basic epidemiological principles is needed. The importance of assessing future fracture risk by means of prospective fracture incidence data was contrasted with the fallacy of looking at past fracture risk with fracture prevalence data. It is also important to distinguish between risk factors and risk predictors. Data from the Kuakini Osteoporosis Study indicates that all known risk factors combined, including body size, age, estrogen and thiazide use, could only account for approximately 35% of an individual's bone mass. So although these risk factors do correlate with bone mass, it would not be possible to predict an individual's bone mass from clinical and demographic information alone. On the other hand, bone mineral content relates strongly to fracture incidence and can therefore serve as a risk predictor in an individual. The KOS data, based upon BMC measurements at multiple skeletal sites, showed that ability to predict risk depended more upon the skeletal site chosen than on the measurement technique used. For all incident fractures combined (both spine and non-spine), the os calcis BMC yielded the best results.
Dr. Hajime Orimo reported that the prevalence of osteoporosis in Japan in 1985 is estimated at 4.3 million, predominantly women. The pathogenesis of senile osteoporosis is multifactorial, but fundamentally involves an imbalance between bone formation and resorption. The bone mineral content (BMC) of the mid-radius was measured in 961 native Japanese women, and compared to the comparable measurement among Japanese-American women in the Kuakini Osteoporosis Study (KOS) in Hawaii. The KOS subjects have 15-18% more bone mass than the age-matched native Japanese. If these differences persist after body size adjustment and comparison of standards, it would indicate significant, non-genetic influences upon skeletal mass.

In a separate study of 201 men and 206 women in nursing homes, metacarpal cortical density (MCI) was compared to multiple variables. A significant negative correlation exists between serum alkaline phosphatase and MCI in both males and females. A positive correlation between MCI and milk intake was also observed; physical activity and MCI also correlated positively in females only.
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THE EAST-WEST CENTER is a public, nonprofit educational institution with an international board of governors. Some 2,000 research fellows, graduate students, and professionals in business and government each year work with the Center’s international staff in cooperative study, training, and research. They examine major issues related to population, resources and development, the environment, culture, and communication in Asia, the Pacific, and the United States. The Center was established in 1960 by the United States Congress, which provides principal funding. Support also comes from more than 20 Asian and Pacific governments, as well as private agencies and corporations.

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