RESEARCH COMMUNICATION

Contributions to Cancer Prevention of Non-Governmental Organizations 2. The Dawn of Cancer Control Activities: Comparison of Japan and the USA

Kunio Aoki

Introduction

Cancer research has a long and distinguished history and as we continue our work in ever expanding new fields, molecular or otherwise, it is perhaps worthwhile to take time out occasionally to ponder what lessons we can learn from the past. Many of the paradigms which are presently accorded respect in fact were hinted at by very early work and it is fitting that we take a look at how previous developments knit with the present status of cancer research in different areas of the world. For this purpose the present review focuses on Japan and the United States, in the hope of gleaning advantage from past experience in planning future programs.

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1. Early Cancer Control Efforts in Japan

a) Establishment of the Japanese Society for Cancer Research

At the turn of the century, in 1900, little attention was being paid to cancer prevention, partly because the majority of causes of death were infectious/parasitic diseases and illnesses related to under-nutrition. However, some physicians with responsibilities for cancer patient care had become interested in cancer mortality statistics, and it was reported that more than 20,000 cancer deaths were occurring nationwide annually, with a tendency for increase year by year. (Abe, 1907; Sato, 1907; Bureau of the Statistics of the Imperial Cabinet, 1943). In 1908, the Japanese Society for Cancer Research (JSCR) was launched in Tokyo (Provisionary committee document), albeit more as a response to outside pressures than due to any drive within the country. The society initially consisted of 161 physician members throughout Japan, and was primarily organized as a result of a request from Professor E.von Leiden (see Photo 1) (Vital Statistics Japan, 1900-1943), of Germany, who had founded the Cancer Research Institute, Berlin, in 1901. He recognized that cancer was a formidable enemy, at that time largely of unknown etiology and very difficult to detect before obvious symptoms, with no effective treatment except for surgical resection for those fortunate individuals diagnosed at an early stage. However, the fact that different cancers showed geographically uneven distributions did suggest some environmental causative factors, some of which might be avoidable. Therefore he emphasized that international collaboration for studying studying human cancer was essential and one of the most effective ways for resolving this knotty problem. Such collaboration would have to be promoted at the national level and thus he asked colleagues in Japan to join in this scheme, after organizing a cancer society in Japan (Opening Assembly and the Scientific Meeting of the International Society of the Study of Cancer

Photo 1. Dr E von Leyden

Emeritus President of Aichi Cancer Center, Emeritus Professor of Nagoya University, Japan

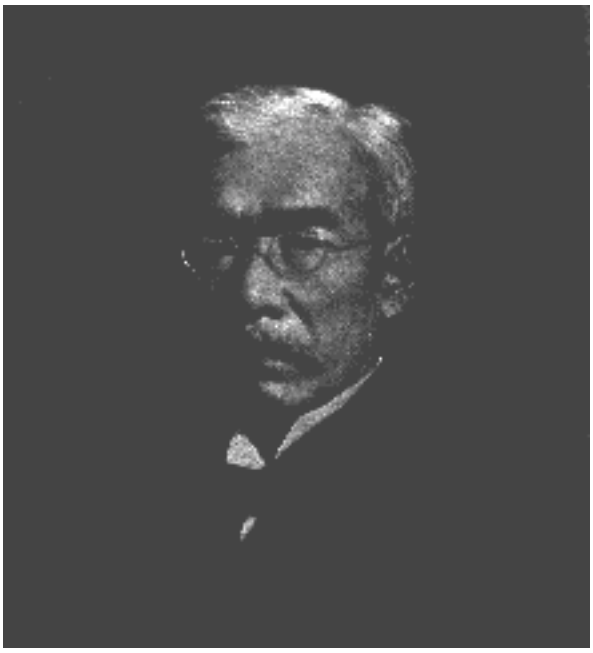

Photo 2. Dr Katsusaburo Yamagiwa

Figure 1. First Issue of the Journal Gann

(ISSC)).

Professors Shokichi Nagayo and Katsusaburo Yamagiwa (Photo 2), as well as a number of colleagues in Tokyo made up their mind to establish a society in line with Professor Leyden's request **(**Editorial Board of the Japanese Foundation for Cancer Research, 1989). The provisionary committee set up regulations and asked for the understanding and collaboration of physicians interested in oncology throughout Japan. The objectives of the society were, as follows: (Vital 1900-1943) to hold a scientific meeting annually, and to promote information exchange on cancer; (Sato, 1907) to collect cancer statistics; (Abe, 1907) to make policy decisions regarding the direction of cancer research; (Provisionary committee document) to educate the public and professionals about new developments and information relevant to the disease; (Opening Assembly and the Scientific Meeting of the International Society of the Study of Cancer (ISSC)) to raise funds from charitable individuals and bodies to promote research; and 6) to establish a cancer hospital and research institute. Most of these objectives were similar to those already established in European countries.

Professor Yamagiwa considered that publishing a cancer journal was central to this effort and in fact had already issued the Japanese Journal of Cancer Research, then entitled Gann (stone or cancer in Japanese) in 1907 (Figure 1), providing a grant for this purpose (Yamagiwa, 1908). The oldest continuing cancer publication, Revue des Maladiees Cancereuse,Paris in 1896, later Bulletin du Cancer and Zeitschrift for Krebsforschung, Jena in 1904 had only been established. He stated that while many respectable papers on cancer were appearing in the different Japanese medical journals, a focus was needed to facilitate their being read by those who wished to study cancer. This journal, Gann, later became the official journal of the JSCR.

At the opening ceremony of the meeting on April 2, 1908, Professor Tanemichi Aoyama (Photo 3) of Tokyo University, the first President of the JSCR, expressed reservations about being able to participate in very active international associations, because Japan was small and poor, not only in terms of the industrial economy but also in scientific achievements on cancer. However, the decision was finally made to join in the international scientific network. One strong reason for the positive response to the request of Professor Leyden was the fact that he and his colleagues had been very supportive of Japanese students living in Germany,

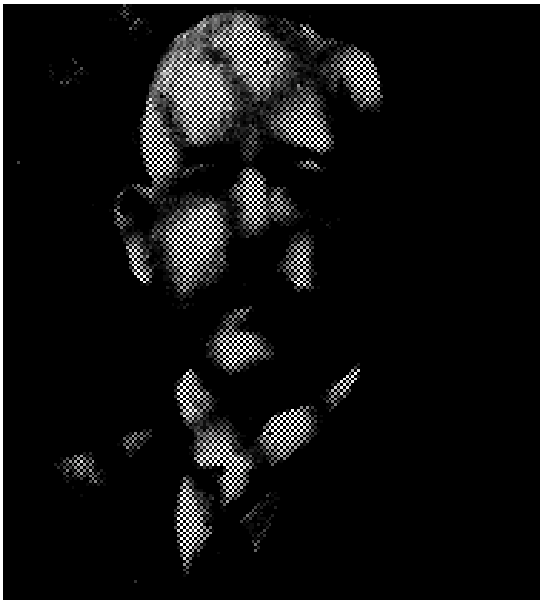

Photo 3. Dr Tanemichi Aoyama

and there was a wish to return this goodwill. Another factor was the change in the international situation of Japan after the victory in the Japan-Russia war, and there was a feeling that we had to do something to make an international contribution. At the time, many people realized that international respect and sympathy could better be obtained by achievement and involvement in cultural progress, rather than victory of war with its consumption of financial resources and human sacrifice.

After congratulatory addresses from Government authorities, Professor Shibasaburo Kitasato, reviewing recent progress in cancer research, including transplantable tumors in animals, emphasized the role of bacteriologists, like himself and his colleagues, in research on cancer etiology by studying relationships between processes of infection and onset of cancer. He also stressed the importance of financial support for research, citing the major success of the Ehrlich Institute in Frankfurt, Germany, after obtaining grants-in-aid from lay bodies. Baron Eiichi Shibuzawa, delivered the congratulatory address as a cancer patient who had an oral cancer healed by surgical operation in 1894 and with no relapse in the ensuing 14 years, an example of a curable cancer when caught at an early stage. He therefore expressed the hope that progress in cancer research may find ways to control any type of cancer. A sizable donation from the Government, and contributions from colleagues and civilians provided the first support for the Society.

The first scientific meeting of the JSCR was held immediately after the opening ceremony on April 3-4, 1908 at Tokyo University. Professor Katsusaburo Yamagiwa delivered a special lecture (1908), in which he emphasized that the best means for cancer prevention was to remove or avoid long standing inflammatory processes and to enhance immunological responses, after reviewing his established studies on cancer from the pathological point of view. He had already written in his book entitled Stomach cancer (Yamagiwa, 1905) that a close relationship was evident between cancer and chronic inflammation, which might be derived from inadequacies in the diet and other factors in daily life, some of which might be avoidable. It was a lecture with really keen insight at that time, because only now have laboratory and epidemiologic studies endorsed the role of lifestyle in carcinogenesis. Dr. Yu Fujigawa (1908) then provided a historical review of cancer, especially focusing on the term Gann **(**First Scientific Meeting of the JSCE, 1908). He was one of the first to concentrate attention on medical history in Japan and the outside world. He also introduced the history of epidemiology on this occasion. Other presentations, were "Cancer Statistics of Gynaecological Cancer" by Dr. Masanaka Kinoshita and "Comparative Pathology in Relation to Cancer" by Professor Akira Fujinami (Photo 4), a pathologist studying transplantable tumors and host factors in carcinogenesis and the first man to promote epidemiological studies on cancer based on the population in Japan (Yamagiwa, 1913)

The JSCR decided to become a member of the International Society for the Study of Cancer (ISSC) to be organized in Europe and send three delegates to the opening of this Association in Berlin, Germany, in May, 1908. The JSCR had nominated Marquis Taro Katsura, Prime Minister, as the Governor of the JSCR and Barons Eiichi Shibuzawa and Shinnpei Gotoh as the Vice-Governors, for authorization, raising research funds and promote cooperation to fight against cancer throughout the country.

Photo 4. Dr Akira Fujinami

Participation in the International Society for the Study of Cancer (ISSC)

The opening ceremony of the ISSC was held at the

Photo 5. Dr Vincent Czerny

Department of Pathology, University of Berlin on May 23, 1908 chaired by Professor Leyden, attended by delegates from 13 countries. Professor V Czerny (Photo 5) (Germany) was elected as a President and Profs. P Marie (France), J Fibiger (Denmark) and R Park (USA) as Vice-Presidents. Prof. T. Aoyama (Japan) was a Member of the Executive Committee, chaired by G. Meier (Germany). The policy of the ISSC (Aoki, 2000), was wholly reflected in the regulations of the JSCR. On their return the Japanese delegates reported the minutes of the ceremony and the summary of special lectures, such as 'On the Causes of Tumors' by Borrel, Paris, 'Cancer Statistics in Hungary' by Dringen of Budapest, 'Experimental Carcinogenesis' by Jensen, Copenhagen and 'New Aspects of the Irritation Theory of Cancer', by Bodvisocki, St. Petersburg.The meeting place was the memorable house of the late Prof. R Virchow with an exhibition of his impressive specimen-collection. The JSCR continuously contributed to the policy of the ISSC by providing Executive Committee members and participating in meetings. Prof. Yamagiwa joined in the Committee for Nomenculature of Tumors and made many proposals of terms that were adopted at that time (Yamagiwa, 1913) In 1922, the first scientific meeting of the ISSC after World War I was held, as the main thema was on Experimental Tar Cancer, commemorating Yamagiwa and Ichikawa's achievements and a great honor for Japan.

Experimental Research on Cause of Cancer

The JSCR early set up a Grant-in-Aid system for cancer research and gave prizes for the most distinguished achievements in cancer studies.. Most physicians thought it was essential to clarify the cause and pathogenesis of cancer, because otherwise no effective treatment and preventive measures could be developed. Many experimental investigations were conducted and the first JSCR Prize was given to A.Fujimami and K Inamoto for their study on 'Transplantable Fowl Tumors' in 1913, which was superior than in other countries, as this subject was one of the current topics. The second Prize, in 1914, was shared by H Tsutui for work on 'Experimental Tumors in Mice' and by S Mogi for findings on 'Penile Cancer'. The third was awarded to K Yamagiwa and K Ichikawa for research into 'Experimental Tar Cancer'(1915) This work was highly evaluated throughout the world and they also received many prizes from other countries. Their first success in producing cancer artificially in rabbits by repeated exposure to an external agent was an epoch-making step. The method was simple and reproducible, allowing any scientist to examine the processes involved in the shift from normal to abnormal cells, and finally to cancers. Furthermore, the irritation theory was experimentally verified and the work pioneered experimental studies on carcinogenesis and lead directly to isolation of carcinogenic substances, with major implications for prevention of cancer. Their lead was energetically followed by other researchers in Japan, and for example,in 1935, T Yoshida with R Sasaki (Sasaki and Yoshida, 1935) succeeded in producing liver cancer in rabbits treated with O-amidoazotoluol per orally. This proof of systemic carcinogenesis was another monumental achievement in experimental cancer studies. About 40 years had passed since Rehn pointed out a close relationship between aniline dyes and bladder cancer (Rehn, 1895)and now Japanese workers were at the forefront in experimental demonstration of the importance of individual chemicals in generation of neoplasia and well respected by the international scientific community. One anecdotal study deserves description here, given the prominence now given to tobacco as a medical disaster. In the early 1900s, T Chikamatsu (1918) produced stomach cancer in rabbits by treating them with tobacco tar for 400 days perorally. He also succeeded in producing skin cancer by painting tobacco tar using Yamagiwa's method. The paper was written in Japanese and therefore unfortunately remained buried since it was a very early pointer which clearly warranted more attention.

Cancer Statistics and Epidemiological Study

To collect and analyze exact cancer data is essential for research and prevention. However, it was not easy to routinely document cancer cases and also to achieve an international standard of diagnosis. The latter relies on both macroscopic and microscopic evidence, but this is difficult to regulate, so the data obtained are often non-uniform. The International Classification of Deaths (Singer and Underwood, 1962; Shimkin, 1977) was adopted in 1899 by many countries of the world, including Japan, but the classification of cancer was only into five large categories, which were not useful for research and clinical reference. Many physicians tried to analyze cancer data in hospitals in groups and in more detail, for example by organ. However, the data generated were not directly comparable,

If excluding diagnostic problems, because they were not even adjusted for the age distribution and population-based cancer statistics by site were lacking. From 1907, a start was made in this area (Nakari and Fujinami, 1908; Nakari,1913), with examination of all death certificates of the inhabitants from 1901 to 1904 by organ in the Kyoto region. They calculated a death rate of 7.9 per 10,000 as the annual average. These were the first relatively reliable population-based cancer mortality statistics in Japan, although they included some erroneous classifications on death certificates. They conducted an epidemiological study of cancer by visiting local villages and towns at that time, focusing on common lifestyle related factors in relation to cancer death rate. Suzuki (1918;1921) succeeded in conducting a study from 1905 to 1914, over 10 years, and revealed that cancer mortality rates ranged 6.1 to 14.0 per 10,000 among the villages of Kyoto and its vicinity with populations more than 2000. He concluded that cancer mortality varied greatly with the prevailing economic conditions and the predominant lifestyle. The areas where people liked rich foods including meat and alcohol drinking showed higher cancer mortality, while areas where people

consumed rice, vegetables and small amounts of fishes, with less meat, showed lower cancer mortality rates. A higher rate was observed among people who were accustomed to take very hot food and drink. Living in high and dry land was associated with a low mortality. Suzuki also analyzed the relationship between cancer mortality and population density, genetic background, sex, age, occupation, disease susceptibility, reproductive history including pregnancy, and childbirth but found no significant links. Similar epidemiological studies were then conducted in Aichi (Nomura, 1924), Gifu (Nomura and Yoshida, 1924), Shizuoka (Yoshida, 1926) and Yamanashi (Katada, 1926) prefectures by Fujinami's students, working at the Aichi Medical College, Nagoya, and voluminous reports ensued, containing very interesting results. For example, the findigs suggested a statistical association between the living environment and/or lifestyle habits and frequency of cancer deaths, and in Yamanashi prefecture, a close relationship between Schistosomiasis Japonica infestation and liver cancer was shown already in 1926. Prof. Fujinami expected to present the overall analyses of the data of the series of studies in 1934, but unfortunately he suddenly died and none of his colleagues were able to adequately continue his work. Of course the idea of epidemiology was derived from Europe but these early studies were equal in quality and quantity to those conducted anywhere else in the world at that time. They remained buried in the world, as only written in Japanese. As for cancer statistics, Mataro Nagayo (Photo 6), a pathologist, the first chairman of the Cancer Institute in 1934, had a great interest since 1920s and therefore conducted a nation-wide patient survey sending questionnaires to the major hospitals throughout Japan repeatedly in the 1929-32. It was not an easy task at that period, but finally he published

Photo 6. Dr Mataro Nagayo

Photo 7. Dr Koichi Ichikawa

a monograph entitled "Statistical Study on Cancer in Japan" collecting more than 20,000 cases of cancer patients, as a supplement to the journal Gann (Nagayo, 1933). Not all areas of the country were covered, but it might be said that he provided a practical indicator of prevalence of cancer across the nation. The distribution of cancer by site suggested marked differences in relative frequency compared with those of other countries. and he added cancer mortality statistics for 1915 to 1930 in all Japan, with a total of 1579 cancer cases autopsied at the Department of Pathology, Tokyo University in 1889-1914. These figures opened the eyes of many physicians and researchers to the necessity of future study. Nagayo deserves particular respect for his emphasis of the importance of cancer statistics and his conclusion that cancer occurrence was largely dependent on environmental factors, with genetic traits seeming to play minor roles, from his analyses.

Information Exchange

Gann (the Japanese Journal of Cancer Research) stimulated cancer study in Japan and provided a major forum for transfer of information to the members. News and instruction from the ISSC were printed in the journal after careful interpretation, and at the same time the high evaluation of Japanese studies encouraged not only researchers but also laymen sponsors. For example, Koichi Ichikawa (Photo 7), who had conducted research on experimental tar cancer, reported on the ISSC meetings at Lake Mohonk in 1926 (Ichikawa, 1926) and London in 1928 (Ichikawa, 1928), where the leading role of Japan in some areas of cancer research were recognized. However, he also found Japan to be poor in clinical facilities and public service activities as

compared with Europe. Nagayo (1929) similarly regretted the lack of any specialized cancer hospital in Japan as he reviewed the trends in cancer research and clinical matters in the advanced countries. His conclusions were as follows: (Vital, 1900-1943) While generation of cancer statistics was still immature in the world and difficult to compare internationally, a tendency for increase was apparent; (Sato, 1907) From various pieces of evidence, the causes of increase in cancer deaths were closely related to changes in daily life, including diet, alcohol consumption, medicaments and hazard in the working places, most of which were avoidable; (Abe, 1907) Regarding etiology, the so-called infection theory was no longer as tenable, with the irritation theory becoming dominant, endorsing many experimental studies initiated by Yamagiwa, the most important agents being not only chemical, but also mechanical, like heat or radiation, and sometimes biological like Schistosomiasis and other parasites; and (Provisionary committee document) There might be precancerous conditions preceding occurrence of cancer, so for treatment, early detection and prompt surgical operation were necessary to save life.

At the same time, radiotherapy had recently became promising for treatment of cervical and other cancers, and chemotherapy and immunotherapy were starting to attract more attention. All in all the progress in cancer research over the past 20years had been considerable, lighting the way to cancer control. The review by Nagayo can therefore be regarded as a very informative and instructive milestone.

Cancer Research Institute and Hospital in Japan

The JSCR became a Corporate Juridical Person in 1915,which was closed in 1933. In 1933 The JSCR was reestablished as the Foundation named as Japanese Foundation for Cancer Research for enlarging and promoting its activities. Economical recession in 1920s hindered to create new cancer hospital and research institute, except small scale of dispensary in the campus of Tokyo University **(**Editorial Board of the Japanese Foundation for Cancer Research, 1989). However ,the Cancer Research Institute and Hospital (see Photo 8) was finally established in 1934, in Nishi-Sugamo, Tokyo, due to the great efforts of various leading scientists and donations from the Imperial fund as well as Industries sealed the success of this early era in cancer control in Japan. The UICC also commenced its activities in the same year in France. Radium was also donated to this

Table 1. Early History of the Japanese Society for Cancer Research (later Japanese Foundation for Cancer Research)

1907	Professor E.v. Leyden asked Japan to join in the International Society for the Study of Cancer (ISSC) to be. K. Yamagiwa started to publish the Japanese Journal of Cancer Research (Gann) in Tokyo. Japanese Society for Cancer Research (JSCR) was founded on April 2. (President Tanemichi Aoyama, Vice-President Tadao Honda,. Members of Executive Committee; Eijiro Haga, Jun Hosono, Wasaburo Okada, Genjiro Kawakami, Shoukichi Nagayo, Katsusaburo Yamagiwa, Yu Fujigawa, Kiyoshi Shiga : plus 37 Counsellors The International Society for the Study of Cancer was established on May 22, Berlin (Chairman E von Leyden). JSCR became a member of the ISSC in 1908.
1908	Marquis Taro Katsura, Prime Minister, Nominated as the Governor of the JSCR and Barons Eiichi Shibuzawa and Shinpei Gohto as Vice-Governors
1909	Elected Shokichi. Nagayo as a Chairman of the JSCR. Dr. Kiyoshi. Shiga succeeded S.Nagayo the Second President of the JSCR.
1910	JSCR provided the Prize for the best scientific achievement in Japan.
1911	The first prize of the JSCR was given to Dr. Fujimami,A and Inamoto D. for the Study on “Transplantable Fowl Tumor”
1912	The grant-in-aid was offered to the excellent researches.
1915	Yamagiwa K and Ichikawa A succeeded to produce experimental tar tumor on rabbit ear. They got the JSCR prize and many prizes of the world. The JSCR was reorganized as a Corporate Juridical Person.
1918	The first tumor clinic set up at a corner of the Department of Dermatology, Tokyo University.
1924	Osaka branch clinic of the JSCR was set up.
1928	Dr. Mataro Nagayo was appointed as President of the JSCR.
1930	Hokkaido Anti-Cancer Association was established. Cancer education to the public was held at the occasion of the Industrial Safety and Sanitation Exhibition in Tokyo (“What is cancer?, cancer statistics and current treatments etc.)
1931	Cancer education to the public at the occasion of the Industrial Safety and Sanitation Exhibition in Osaka.
1933	The JSCR was closed and the Japanese Foundation for Cancer Research was established for extending and promoting anti-cancer activities of the JSCR.
1934	Cancer Institute and Hospital completed in Tokyo. Director of the Research Institute; Mataro Nagayo,MD, Director of Hospital; Ryukichi Inada,MD.
1935	Osaka Research Association for Cancer Treatment was established.

Photo 8. The Original Cancer Institute in 1934

hospital for therapeutic purposes from the volunteer enterprise which accelerated to increase the patients showed-up. Regarding provincial developments, Hokkaido Cancer Research Association was founded in 1930 and Osaka Research Association for Cancer Treatment in 1935 with the aim of achieving a modern cancer clinic and cancer prevention activities like the Cancer Institute in Tokyo.

Cancer Education for the Public

Regarding public education on cancer, despite the relative paucity of definite evidence relevant to prevention on cancer and the limited tools available for early detection of cancer, Ichikawa reported (1928) that cancer education to the public was very active in London. The British Cancer Association was thus making great efforts to positively inform people about cancer and its symptoms, how to find lesions at early stages and how to avoid hazardous factors, for example. W Nakahara (1929), later the chairman of the Cancer Institute, Tokyo, also greatly appreciated the importance of the 'Fight against Cancer' movement in the USA, featuring volunteer organizations which distributed information on cancer and its control, using the newspaper, radio and cinema media as well as leaflets.. A Cancer week seemed a very good idea. Professional education on cancer furthermore appeared very effective in the days of increasing cancer patients and Health Insurance companies thus became actively involved in cancer campaign and also supported analysis of cancer statistics. Nakahara was particularly impressed to see the collaboration of professionals with the public in the fight against cancer, something which was sorely lacking in Japan at that time. To highlight differences we should now turn to early developments in cancer control in the United States.

Table 2. Early Officials of the JSCR

President	Tanemichi Aoyama,MD	1908-1917
	Tadao Honda,MD	1918-1928
	Mataro Nagayo,MD	1928-1941
Vice-President	Tadao Honda,MD	1908-1918
	Keizou Dohi,MD	1918-1924
	Aihiko.sata,MD	1924-1929
	H.Shiota MD	1929-1941
	R.Inada,MD	1919-1950
Chairman	S Nagayo MD	1907-1909
	K Shiga MD	1910-1915
	M Nagayo MD	1915-1929
	T.Kimura MD	1929-1933
	M Nagayo MD	1933-1934

2. United States of America

In the early years of this century, the population of the USA continuously grew, with more than one million migrants from various countries accepted annually. Middle and older age groups joined with younger migrants and the cancer rates therefore gradually been increased, especially after the reduction of death due to infectious/parasitic diseases (US Bureau of the Census ,1976; Nikko Research Center (1982). As the 20th century unfolded, the tendency for increment in cancer deaths attracted attention not only of physicians but also of lay people, reflecting the nature of neoplasia as an often fatal illness with a miserable course.

In 1905, the President of American Medical Association (AMA) proposed a committee to examine the situation in detail. This convened and confirmed that the increase trend was correct and recommended that education on cancer be stressed, both for professionals and the general public (Ross, 1987).Most people, including physicians, at that time believed that diagnosis of cancer was a death sentence and any action was useless, so that the very word was taboo. However, some gynecologists in Europe had started to educate the public about detection of early stage cervical cancer, emphasizing that prompt treatment could save life. Surgeons and gynecologists in the USA also became convinced that cancer was curable based on their own experiences and in 1912, Dr. H C Taylor and his colleagues presented a paper documenting that radical abdominal surgery for cervical cancer could result in cure. The American Gynecological Society then set up a committee to collect data and make a plan for practical action until the next meeting (Shimkin, 1977; Ross, 1987).

In 1913, Dr. Clement Cleveland, a famous gynecologist in New York, requested that a committee consisted of physicians and laymen be formed to determine the best approach to the cancer problem. The outcome was a decision to found some national organization against cancer for the purpose of putting before the public the necessity of taking steps to reduce the number of deaths, but they only indicated this conclusion to the American Gynecological Association. The well know journalist, Samuel Hopkins Adams (1913) also contributed by writing san article in the Ladies' Home Journal entitled "What can we do about cancer", that was the challenge to the day of cancer phobia in the US on the same month of 1913. His article were that cancer usually develops from continued irritation, and if the irritation be removed, the cancer can be avoided, and that If the cancer is

detected at earlier stage, even if cancer onset is not averted, the patient can be probably healed by surgical operation, but not by other treatments. His impact was especially important in that it stimulated the public to overcome their fears and start talking about a taboo subject in lay language. While what he had written was not all endorsed by scientific evidence, it did honestly reflect the current medical knowledge. It was of great encouragement to for Drs. Taylor, Thomas Cullen and colleagues who were aiming at forming an anti-cancer society.

At the 38th Annual Meeting of the American Gynecological Society held on May 7,1913 at Washington decided to establish a society at the national level for cancer control, that is, the American Society for the Control of Cancer. On May 22, 1913, the Society was actually created at a meeting of ten doctors and five laymen. The purpose of the society was to disseminate knowledge concerning symptoms, treatment and prevention of cancer; to investigate conditions under which cancer is found; and to compile statistics with regard thereto. The AMA, the American Gynecological Society, the Congress of American Physicians and Surgeons, other medical societies, the Insurance companies, and lay people all supported the ASCC many becoming distinguished sponsors. Dr. Frederick L Hoffman (Photo 9) warned the members of American Gynecological Society on May 7,1913 that 'I am absolutely convinced that the cancer death rate is increasing and the larger recorded mortality is not primarily due to improved medical diagnosis and the more accurate methods of death certification', and addressed 10 recommendations for the Society to be, that is:

1. An American Society be organized for the study and prevention of cancer, primarily for the purpose of educating the public at large of the absolute necessity of operative treatment at the earliest indication of cancerous growth.
2. A thorough investigation into the geographical distribution of cancer be conducted throughout the Western Hemisphere, with special reference to localities and sections which persistently show a very high or a very low rate of cancer mortality.
3. A thoroughly qualified medical and statistical investigation into the cancer experience data of general and cancer hospitals be performed for a period of sufficient length to determine the precise results of medical and surgical treatment, with a due regard to the disease course, possible recurrence, or subsequent death of patients discharged as cured or materially improved.
4. Nation-wide agitation for a material improvement and required completeness of the official returns of deaths from cancer, with a due regard to the organs or parts affected, for the purpose of reducing the number and proportion of unclassified or undefined cancers, to the lowest possible minimum
5. The Division of Vital Statistics of the Census as well as all States and municipal boards health in charge of the registration, tabulation and analysis of vital statistics should be urged to redistribute deaths occurring in institutions according to the permanent or regular residence of the deceased. Only by means of such a correction could the true local incidence of cancer be established, as had been shown with admirable clearness by the investigation of Green, of Edinburgh.
6. A thoroughly scientific investigation, through the cooperation of the Census Office, the Bureau of Labor, the Bureau of Mines. Life Insurance Companies, etc., should be made into the occupational incidence of cancer, with regard to which there are strong reasons for believing that a wealth of useful information can be brought to light which is at present unavailable.
7. Since an erroneous diet is a probable causative factor in cancer occurrence, the nutrition of cancer patients should be investigated in conformity with the strictly scientific and conclusive methods of Professors Atwater and Chitttenden.
8. As an aid in the scientific study of cancer, and as a possible means of bringing about a more intelligent public understanding of the accepted facts of cancer occurrence, its nature and probable cure, the disease should be made reportable to the Board of Health in the same manner as other diseases which are recognized menaces to public health and welfare.
9. As a further aid, the Department of Agriculture should be requested to make a thorough study of the occurrence of cancer among domestic animals and plants known, or suspected, to be subject thereto, and such an investigation should as far as practicable, be coordinated to the work of the Bureau of Soils.
10. The immediate preparation and widest distribution of a concise outline of accepted cancer facts, showing the disease in all cases to be of local origin, that the chief danger to the patient lies in the tendency toward a rapid extension of cancerous growths, that the only certain

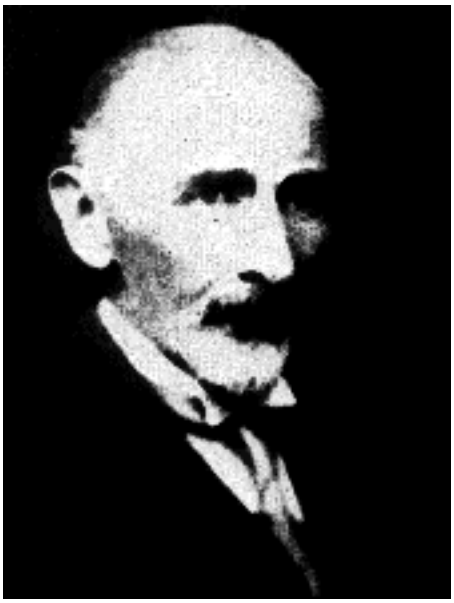

Photo 9. Dr Frederick L Hoffman

> remedy known to science is the complete surgical removal of the disease, and that when this is done outlook for a cure in the accepted meaning of the term is decidedly hopeful, but that contrary delay and neglect or refusal to submit to operative treatment are practically certain to result in fatality within a comparatively short period of time.

It should be noticed that he did not mention any experimental cancer research in this series of proposals. Dr. Hoffman was famous for statistics, especially cancer statistics, working at the Prudential Life Insurance Company. He published a monograph entitled "The Mortality from Cancer Throughout the World" in 1915 (Hoffman, 1915) (Photo 7), which was the first book of this kind, and succeeded in having the US Census Bureau prepare an analysis of cancer mortality in the registration area of the US for 1914, which became a model for adopting the ICD classification for the statistics. National Cancer Mortality Statistics were subsequently analyzed by Joseph W Schereschewsky (Photo 10), US Public Health Service in 1922 Shimkin, 1977).

The ASCC thus was jointly organized and run by both lay people and physicians and other professionals. The first President, Mr. George C Clark, was a layman and the Board of Directors had a fifty: one rate of lay and professional people, with a layperson also as the chairman. The committee's constitution was about the same, reflecting the fact that the subjects and works ranged from medical, economic, social, law to life events, and the services to the community were for children to the very old. Another reason might have been a relative indifference to cancer problems by many physicians. Effective and unbiased policies were generally adopted by the committee and the Society started to work under the slogan "Fight cancer with knowledge". No laboratory scientific research was planned by the Society, which only carried out epidemiological investigations of population behavior, life habits, and work exposure. The founders had clear ideas on how to control diseases in those days of poor knowledge in etiology and treatment pointing to the history of many useless and ineffective studies as an instruction as to what is the best way to control such a tenacious enemy until revolutionary weapons appeared. However, the Society did adopt scientific research as a program with the advent of new technologies, especially after 1945.

Photo 10. Dr Joseph W Schereschewsky

Avoided professional education on cancer, it focused on education of the public, especially women, encouraging people to participate in programs for early diagnosis of cancer. Many branches of the ASCC were established and in 1922 a national framework was created including 48 states. In 1919, Dr. Powers, President of the ASCC proposed three axioms for public education, that is,

1 Cancer is at first a local disease
2. With early recognition and prompt treatment, the patient's life can often be saved.
3. Through ignorance and delay, thousands of lives are needlessly sacrificed.

And also four danger signals were designated as follows;

1. Any lump, especially in the breast
2. Any irregular bleeding or discharge
3. Any sore that does not heal, particularly about the tongue, mouth, or lips
4. Persistent indigestion with loss of weight

These were simple and memorable warnings which were really epoch-making ideas for cancer education, still valid at the present. Powerful campaign started using mass media including radiobroadcast, new tool.

In 1922, the Society adopted a system of Field director whose work is to travel around from area to area educating the public and asking for the cooperation of physicians, like a missionary.To overcome financial problems, Mrs. Elsie Mead, a volunteer who later was appointed the Chairperson of the Finance Committee, started to raise funds adopting different levels of membership, that is, she recruited individual members with a 5 dollars donation per year and obtained about 7000 USD and also a further 15,000 USD from special members of the Society who gave 1000 USD per year. This was a marvelous contribution to the Society. The branch organizations of the ASCC created the same system and transferred some of the membership fees to the central office. Then state committees were established and promoted the Society's activities, with the assistance of famous physicians like Dr Mayo from Minnesota (Ross, 1987).

In 1923, Dr. George A. Soper, an epidemiologist, was appointed as new position of the Managing Director of the Society. He stressed more effective methods for people to motivate toward cancer control program through fear and proposed the agenda "Principles and Politics of the Society" in which he showed the direction of the activities. He was also very conscious for cancer statistics, as the exact data suggesting cancer control programs. He made efforts to strengthen the professional education on cancer, which aimed to get physician's help for fight against cancer including intensifying patient' care. There were several cancer clinics and hospitals in 1926, but relatively few compared to the more than 600 TB clinics and 100 heart clinics open at that time. To increase the number therefore became one of the big goals of the Society and, in 1926,legislation to promote cancer prevention and treatment was passed in some states and this greatly boosted establishment of new cancer clinics in the US. Nevertheless, it is recorded that there were only 27 grams of radium for 526 X-ray machines in the US in 1928, with about 125,000 cancer deaths registered in the whole country. To strengthen cancer prevention activities and further collaboration of the ASCC with the anti-cancer organizations in Europe, the Meeting of the International Society for the Study of Cancer was invited to Lake Mohonk in 1926 providing travel grant for the participants from other countries. This meeting was co-sponsored by the ASCC and other American Medical societies and allowed much knowledge of scientific advances and achievements in methods of prevention to be aired. It was adopted 15 items as declarations , including the necessity for an international cancer control organization (Shimkin, 1977).

In 1930, the new President, Dr. Clarence C Little (Ross, 1987) divided the US into 4 regions and hired physicians to put across the society's message of cancer control in each. The Society then started concentrating more on professional education, publishing and distributing knowledge for physicians and medical students. However in 1935, he noticed that the lay education was behind and restarted widespread and intensive campaign to the public. It was the most important activities in fron of the increasing cancer patients. The financial situation of the Society was not satisfactory for promoting the activites. It was the time to adopt new policy for raising fund for the Society. There was still the conflicts were the professionals and the policy of the Society which regarded the public education as most important, as the professionals considered as the research on cancer the priority.

Summary

It is clear, that whereas cancer control activities in Japan were started in 1908 by physicians and scientists, supported

Table 3. Early History of the American Society for the Control of Cancer

1905	Dr. Lewis McMurtry, President of American Medical Association, ordered to investigate the cancer problem in the USA.
	American College of Surgeon appointed Dr. John Cullen to investigate cancer problem.
1912	Dr. Howard C Taylor, Dr. Cullen et al suggested that women with early stage of cervical cancer can be saved by surgical operation at the Convention of the American Gynecological Association.
1913	A committee consisted of laymen and physicians with Dr. Clement Cleveland, famous Gynecologist,in New York, planned to establish a national cancer society which idea was indicated to the American Gynecological Association.
	Samuel Hopkins Adams, journalist, wrote an article entitled " What can we do about cancer" in the Ladies Home Journal.
	Dr. Frederick L Hoffman, Prudential Life Insurance Company, specialist of cancer statistics, stressed the increasing cancer mortality in the USA and addressed 10 recommendations for the American Society for the Control of Cancer to be on May 7th in 1913 at the American Gynecological Society Meeting.
	American Society for the Control of Cancer established on May 22, 1913.
1914	Mrs, Elsie Mead, Director of Finance committee succeeded in raising funds for the ASCC.
1915	Local chapters of the ASCC with the established physicians increased.
1919	Dr. Charles A.Powers, President of ASCC set three axioms and danger signals to the public.
1922	The ASCC made a framework of a national organizations integrating 48 States centers, Hawaii, Philippines and Canada(ten districts)
	National cancer week, campaign using mass-communication
	Dr. George A Soper, eidemiologist, was appointed the first Managing Director.
	He set the agenda for next ten years principles and policies, and stressed professional education and increase cancer treatment facilities, and also collection of exact information on cancer, mortality and morbidity.
1926	Massachusetts legislature to promote cancer prevention and cure of cancer
1929	Dr. Clarence C Little appointed as Managing Director
	He strengthening professional education and increase cancer clinics, and also
1932	restarted widespread and intense campaigns to inform the public about the prevention of cancer.

Table 4. Early Officials of the American Society for the Control of Cancer (ASCC)

Presidents	Mr. George C. Clark	1913-19
	Charles A Powers, MD	1919-22
	Howard C. Taylor, MD	1922-30
	Jonathan M. Wainwright, MD	1930-32
	George H. Bigelow, MD	1932-34

The Founders

James Ewing,MD, Howard C Taylor,MD, Thomas Cullen,MD, William E Studdiford, MD, Frank F Simpson, MD, George Brewer,MD, Joseph Bloodgood,MD, C.L.Gibson,MD, Clement Cleveland,MD, S. Pollitzer,MD Mr. John E Parsons, Mr. George C Clark(First President), Mr. James Speyer Mr. V. Everit Macy, Mr. Thomas M Debevoise(First Secretary)

by National government authorities and the finance world, in the US the initial impetus was from largely from volunteer physicians and the laymen without Governmental forces. This might have been derived from the fact of many years' experience in the United States of rapid development of a new high growth society. The major contribution by Japanese was in basic scientific studies, rather than clinical medicine and prevention fields, in contrast to the emphasis on education efforts for the public by the American Society until 1920s. How we can attain the most successful future course will be dependent on achieving the optimal marriage of these two approaches to control of the cancer problem.

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