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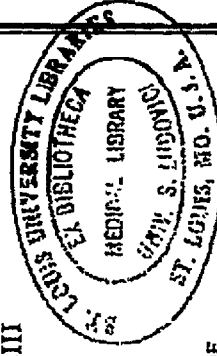
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TRANSACTIONS
of
The Association of
Life Insurance Medical Directors
of America
SEVENTY-EIGHTH ANNUAL MEETING

Samuel R. Moore, Jr., M. D.
Editor

VOL. LIII



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Transactions
of
The Association of
Life Insurance Medical Directors
of America

SEVENTY-EIGHTH ANNUAL MEETING

The Seventy-Eighth Annual Meeting of The Association of Life Insurance Medical Directors of America convened on Wednesday morning, October 15, 1969, in the Ballroom of the Chateau Frontenac, Quebec City, Quebec, Canada, President Francis A. L. Mathewson presiding.

PRESIDENT MATHEWSON:—Gentlemen, it gives me great pleasure to welcome you to Quebec City to this, the 78th Annual Meeting of the Association of Life Insurance Medical Directors.

I would like to depart from the traditional opening of this session on a sad note. As you know, I live in Winnipeg, and there has been a lot done on the local level here to make this meeting the success I'm sure it's going to be, and this fell clearly on the shoulders of Dr. Maurice Turcotte.

Dr. Turcotte died suddenly on the 23rd of June of this year, and I think it's appropriate to note his untimely death. Would you please be kind enough to stand and honor Dr. Turcotte. Thank you very much.

It's interesting to see how an organization grows and extends its interests beyond the confines of the shores of North America. I thought it would be of interest to the membership to recognize members who have come a great distance to attend this meeting. The secretary will read their names out and I'll ask them to stand and be recognized.

Dr. Humberto Alcocer, Medical Director of the Seguros America Banamex, Mexico.

This study was supported by the National Cancer Institute of Canada Research Grant and the Canadian National Health Research Grant No. 606-7-137.

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2. Choi, N. W.: Geographic and Ethnic Distribution of Lymphomas and Leukemia in Manitoba. *Proceedings of the 5th International Congress of Hygiene and Preventive Medicine*. Vol. II 97-98, 1968.
3. Choi, N. W., and Cadham, R. G.: Some Epidemiologic Aspects of Cerebrovascular Disease with Particular Reference to Diagnostic Groups and Origin of People in Manitoba. *Proceedings of the 5th International Congress of Hygiene and Preventive Medicine*. Vol. II, 11-12, 1968.

Dr. MATTHEWSON—Thank you very much, Dr. Choi. We will proceed to our final paper and if we have time, there will be some discussion at that moment. Our final paper is "Underdeveloped Areas in Cancer Research", and this is being given by Dr. Bob Cooke.

He received his Bachelor of Science at the University of Saskatchewan, graduated in Medicine from the University of Manitoba, is a Fellow of the Royal College of Surgeons of both England and Canada, is on the American Board of Surgery.

He took his post-graduate training in London and at the Memorial Center in New York. He is Assistant Professor of Anatomy and Associate Professor of Surgery at the University of Manitoba. Dr. Cooke.

UNDER-DEVELOPED AREAS IN CANCER RESEARCH

R. L. Cooke, M.D., F.R.C.S.
University of Manitoba, Winnipeg, Manitoba, Canada

Our title, "Under-developed Areas in Cancer Research" may be reworded—we have paid insufficient attention to preventive treatment. We have not fully utilized present-day technology in searching for and identifying host characteristics and environmental factors contributing to disease. Management or treatment of disease has three parts, preventive, curative and palliative treatment.

How well have we labored in preventive treatment of today's three major epidemics, cardiovascular disease, trauma and cancer? As regards cardiovascular disease we do think about keeping fit, keeping lean and eating and smoking less. Epidemiological studies are being done on hard water for healthy hearts, and recently lithium lack has been suggested as a cause of sudden heart death in soft water areas. As regards trauma, we are negligent to an unbelievable degree. For example, our automobiles have long had shock absorbers on their under surface to soften road bumps, but not hydraulic bumpers nor even any bumpers at all for collisions. In Britain the freight cars have had hydraulic bumpers for many, many years to protect coal or potatoes, or whatever the freight may be. We have nothing to protect ourselves and our passengers in our automobiles.

On the subject of cancer, what more can we do towards preventing this disease?

First, the size of our problem—and you all know it well. Figure 1 shows the deaths in the United States projected for 1969. Figure 2 shows some data for the last decade in Manitoba, the central province of Canada, with a population of one million people. You will see, in our province of Manitoba, that for cancer, a notifiable disease, the incidence has risen and the mortality is steady. Perhaps the rising incidence is due to better reporting, perhaps it is a true incidence, as for example, reflect-

References on request.

ing the increase in lung cancer. The mortality remains stubbornly constant, despite all the time and treasure, effort, energy and expertise, expended in research and treatment.

1969 U.S.A.

THE AMERICAN CANCER SOCIETY PREDICTS

325,000 AMERICANS WILL DIE OF CANCER
INCLUDING 9700 DEATHS FROM CERVIX CA.

(N.E.M.J. 281.11.602)

Figure 1

MANITOBA CANCER PER 100,000

	INCIDENCE	MORTALITY
1969	288.6	140.1
1961	297.2	138.3
1963	308.6	146.6
1965	313.1	145.2
1967	327.0	147.0

M C Fdn.

Figure 2

Some of us may have considered cancer due in the main to genetic factors, and so, difficult to prevent. Figures 3 and 4 from a paper by Professor Lynch of Creighton University, list some of the genetic cancers. You will agree that these constitute a minute fraction of the total problem.

AUTOSOMAL DOMINANT

NEVOID BASAL CELL SYNDROME
MULTIPLE NEUROFIBROMATOSIS
FAMILIAL POLYPOSIS COLI

GARDNER'S SYNDROME - CUTANEOUS CYSTS
OSTEOMAS
COLON POLYPS

TYLOSIS - KERATOSIS PALMARIS AND PLANTARIS,
AND ESOPHAGEAL CANCER

TUBEROUS SCLEROSIS

PHEOCHROMOCYTOMA AND MEDULLARY THYROID
CANCER

RETINOBLASTOMA

MULTIPLE ENDOCRINE ADENOMATOSIS
(Lynch Creighton U.)

Figure 3

Present evidence suggests that environmental causes may be responsible for about 80 per cent of cancers. In 1954, Steiner* of Chicago published a monograph based on 36,000 necropsies at the Los Angeles County Hospital. The group consisted of Caucasoids, Negroids and Mongoloids. He analyzed the incidence of various cancers in these groups and compared them to the incidences of the same cancers in the countries of their origins. He concluded that cancers thought to be racial in the genetic sense are, in fact, racial only in the cultural or environmental sense. The migrant loses the cancer patterns of his homeland, and he or his child acquires the cancer patterns of the new world. World-wide data have been published by Doll, Payne and Waterhouse*, reporting information from 32 cancer registries in 24 countries. They, too, showed the striking variations

AUTOSOMAL RECESSIVE

XERODERMA PIGMENTOSUM

FRECKLES

CORNEAL OPACITIES

SKIN CANCER

CHEDIAK-HIGASHI SYNDROME

DECREASED PIGMENTATION

NYSTAGMUS

MALIGNANT LYMPHOMA

(Lynch Creighton U.)

Figure 4

of organ site incidences of cancer from country to country. Higginson published a paper in 1967* and we quote, "There is growing recognition that these geographical variations may largely reflect environmental conditions—present day research in environmental carcinogens is largely directed towards analyzing these geographical differences and attempting to identify the possible individual environmental factors concerned for each site." Some examples of the different incidences of cancer are shown in Figures 5 and 6. The variations may be extreme. For example, primary liver cancer in Mozambique is five hundred times the incidence in the United States of America. In Japan cancer of the stomach, and in Taiwan, cancer of the nasopharynx, account for about half of all cancers in males. In the areas of highest incidence, cancer of the esophagus is two hundred times as common as it is in Western Europe and the United States.

CANCER RESEARCH

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DIFFERING CANCER MORBIDITY RATES

SITE	DIFFERING CANCER MORBIDITY RATES	
	HIGH	LOW
NASOPHARYNX	SINGAPORE CHINESE NATIVE HAWAIIANS	MOST COUNTRIES
ESOPHAGUS	PUERTO RICO JAMAICA BANTU JAPAN FRANCE SWITZERLAND	NORTH AMERICA
COLON	U.S.A. CANADA U.K.	AFRICA CHILE JAPAN
RECTUM	DENMARK U.S.A. U.K.	JAPAN COLOMBIA NIGERIA BANTU
LUNG	U.K. U.S.A.	BANTU NIGERIA UGANDA

(Practitioner. 198:1172. 612)

Figure 5

DIFFERING CANCER MORBIDITY RATES

SITE	DIFFERING CANCER MORBIDITY RATES	
	HIGH	LOW
BREAST	CANADA U.K.	JAPAN BANTU SINGAPORE CHINESE
CERVIX	COLOMBIA PUERTO RICO BANTU	U.K.
ENDOMETRIUM	U.S.A. DENMARK U.K.	JAPAN BANTU

(Practitioner. 198:1172. 612)

Figure 6

We can conclude from our present knowledge that a hypothetical population suffering the smallest observed incidence of cancer for each organ site, as abstracted from the world literature, would have only 20 per cent of the total cancer incidence presently suffered in Western Europe and North America. It follows that 80 per cent of our cancers are theoretically preventable.

Under the subject heading, "Carcinogens", we have accumulated considerable information since 1775, when Percival Pott described Chimney Sweeps' Cancer. It has taken about 150 years for the authorities to accept responsibility under Workmen's Compensation Acts for this kind of contact cancer. Now, today, we see great resistance again to accepting the danger of cigarettes, asbestos, and other known carcinogens. MacMahon* of Harvard states, "Tobacco in one form or another is responsible for more human cancer cases and deaths than any other known agent. Most clearly documented is the relationship of cigarette smoking to cancer of the lung, yet tobacco smoking is also probably causally related to cancers of the mouth and bladder." Figure 7 points out some of the tobacco cancers around the world. Other known carcinogens needing further study and regarding which we might do more to prevent cancer are listed in Figures 8, 9, 10 and 11. It is interesting to note that there is evidence that some of the organic chemicals administered to the mother may cause nephroblastoma or Wilms' tumor in the baby by the time of birth.

Despite the foregoing information, the greater number of cancers presently afflicting us have not yet been clearly related to personal characteristics, habits and environmental factors.

TOBACCO			
ORAL CANCER	INDIA	BEER NUT	
PALATE CANCER	INDIA	REVERSED CIGARS	
ANTRAL CANCER	SOUTHERN BANTU	SNUFF	
LUNG CANCER	NORTH AMERICA	CIGARETTES	
	EUROPE		

Figure 7

PHYSICAL CARCINOGENS

IONIZING RADIATION

U V R

SKIN

X-RADIATION

CONNECTIVE
TISSUE

BONE

MARROW

(Practitioner, 198:1187, 612)

Figure 8

PARASITIC CARCINOGENS

SCHISTOSOMA

HAEMATOBILUM

CLONORCHIS

SINENSIS

BLADDER

LIVER

(Practitioner, 198:1172, 612)

Figure 9

INORGANIC CHEMICAL CARCINOGENS

ARSENIC	SKIN
	LIVER
NICKEL	G.I. TRACT
	LUNG
CHROMIUM	SINUSES
	LARYNX
ASBESTOS	PLEURA
	PERITONEUM

(Practitioner. 198:1187.612)

Figure 10

What might we do to further study these matters? We suggest that some agency, organization or bureau establish Health Data Banks into which on-going data regarding disease incidence and mortality are fed. Simultaneously, all the personal characteristics of the individuals and all the environmental factors we can imagine relevant, would also be recorded. For example, the X Y Z Insurance Company now sells Sickness, Accident and Life Insurance to the doctors of the Manitoba Medical Association and, of course, to other groups. The X Y Z Insurance Company could establish a Health Data Bank for each of these groups and record an annual submission from each member, including health data, personal characteristics, habits, customs and environmental factors to accumulate a large quantity of information for analysis. What factors should be recorded? Just

ORGANIC CHEMICAL CARCINOGENS

BENZOL	MARROW
BETA NAPHTHYLAMINE	MARROW
COAL TAR	BLADDER
PITCH	KIDNEY
ANTHRACENE OIL	SKIN
LAMP BLACK	LUNG
PETROLEUM FUEL OIL	NASAL SINUS
DIESEL OIL	LARYNX
ISOPROPYL OIL	

(Practitioner. 198:1187. 621)

Figure 11

today, one would say: age, sex, weight, occupation, racial origin, residence—urban, suburban or rural, dietary habits, drinking habits, smoking habits, recreations, marital status, past illnesses, family history. A group of consultants consisting of Clinicians, Epidemiologists and Public Health authorities might study and establish an information sheet for in-put material. Consider for a moment the parallel of our money problems. At present we each submit a lengthy financial report annually, and the data processing centre in Ottawa or Washington, as the case may be, has a detailed complex record of the financial condition of each of us. Why should not the insuring agency, or the information agency that protects us from sickness and accident and insures our lives, have a comparable set-up regarding our health, our characteristics and our environment? It is interesting to consider

such data processing being done for the 1,000 well-fed, hard-working Manitoba doctors on the one hand, and on the other hand such data processing being done for our 3,500 Manitoban Hutterites. These interesting people are somewhat akin to the Amish of Lancaster County, Pennsylvania. The Hutterites live a communal, rural, agricultural life; they are well-fed, smoke very little, drink only some home-made wine, work outdoors, marry early, have large families, practice endogamy—that is, marry within their group. Do the doctors of Manitoba and the Hutterites of Manitoba have the same or different incidences and mortality from cancer of the lung, cancer of the stomach, cancer of the prostate? We do not know, but we could know.

Our present annual report of the Manitoba Cancer Foundation is similar to the reports of cancer centres throughout North America. We record incidence and mortality of cancer along with only four other items—the age, the sex, the residence—urban or rural, and the organ site. These limited data were enough when records were done by hand. Today there is practically no limit to the number of items which can be handled by computerized data processing. The computer can store, summarize, analyze, relate and immediately recall innumerable items. We suggest that we are failing to fully utilize the technology available to us.

The examination of disease and environment can be done from two aspects. We can start with a group or whole population of a county, city, state or country and going forward, record their disease incidence and mortality as well as their characteristics and environmental factors, and search for significant relationships. We can approach the problem from the other direction; a group of people suffering with a particular cancer in a particular organ site can be studied, their personal characteristics and their environmental factors can all be recorded and analyzed and significant points sought in which they differ from the general population. An example of this is an interesting piece of work done in Korea, where cancer of the stomach was observed to be common in rural farmers. By a careful country-wide study it was finally narrowed down to aflatoxin from the aspergillus flavus mould growing on the soybean leaves in the farmers' homes. The leaves were stored under the eaves, and in the damp and dark the mould grew

and the toxin accumulated. When the farmers' sons grew up and moved to the city they stopped eating mouldy soybean bread and they stopped getting stomach cancer. This paper was presented at the James Ewing Meeting last summer by Seel, Moon and Crane*.

We expect that health data banks would quickly reveal changes in disease incidence and mortality in the groups studied. We hope that helpful and harmful factors would come to light, probably revealing piece-meal bits of information and leading us on by serendipity to a fuller understanding of the pathogenesis of the disease.

A natural question one asks oneself is, why isn't all this the business of government? Our answer is that governments are presently pre-occupied with immediate difficult problems of war abroad and disorders at home. Our governments are trying to cope with protests and poverty, with inflation and integration, and we doubt that at this time of retrenchment they would be interested in embarking on such large, long-term projects as health data banks. Some time in the future, when private enterprise has established the value of health data banks and made a financial success of them, we expect that the governments would probably move in!

The next natural question is, why should one suggest that insurance companies embark on such a large project? It is not really insurance. One answers that you are presently providing group insurance, sickness, accident and health, to unions, to professional groups, to industries and fraternal orders, and so on. It seems a natural extension of this service that you should establish health data banks for these groups. You have the people, you have the tools and you have the know-how for such large scale data processing. Suppose you could say to a Union, "we will establish a health data bank for you, we will provide you with yearly reports on the incidence and mortality of cancer, of trauma, of cardiovascular disease in your membership, we will tell you how you compare to the population at large and to other groups in the country, we will tell you of any statistically significant relationships we can discover between your health and disease data on the one hand and your personal characteristics and your environmental factors on the other hand,

we hopefully predict that you can improve the health, and increase the longevity, of your members by using this information."

Perhaps if an individual receives such an annual print-out he might pay more attention to it, because he is paying for it. If on the other hand it came from some paternal government he would probably disregard it as unsolicited paternal advice!

In conclusion, we have presented evidence suggesting that 80 per cent of cancers are due to environmental factors and therefore theoretically preventable. The search for environmental factors, both harmful and helpful, has just begun. The digital computer enables us to accept and analyze innumerable items regarding disease incidence and mortality on the one hand, and habits, customs and environmental hazards on the other hand for each one of thousands of persons. With the speed of light we can reveal any positive or negative, statistically significant, correlations amongst all these data. The extent of our probe into the relationships between environment and disease is limited only by the wisdom and imagination of the programmers.

PRESIDENT MATHEWSON—Thank you, Dr. Cooke. Gentlemen, this has been a very stimulating session. We have had facts presented to us of the incidence of cancer and mortality rates, and then we were presented with the challenge that something still has to be done. I think the barb that Dr. Cooke used with respect to the insurance industry, producing data of the nature he suggested, is somewhat of a challenge to all companies.

I want to thank the speakers this morning for their very interesting and important contributions.

This, gentlemen, brings to a close our scientific sessions and we will now proceed to wind up the affairs of this year. I would like to call upon Dr. Brown to read the list of members deceased during the last twelve months. Dr. Brown.

DR. ARTHUR E. BROWN—Since our last meeting, the Association has received the following information about the deaths of these members:

PRESENT AT MEETING

Doctors Present:

A. B. Ainsley
J. O. Alden
D. A. Anderson
F. C. Anderson
K. W. Anderson
R. D. Atkinson
W. H. Atkinson
J. W. Ayers
L. Ayres
A. B. Ayers
F. N. Bailey
J. C. Baker
C. G. Barnett
C. M. Barrett
S. F. Bassett
H. C. Bates, Jr.
K. R. Baxter
W. Bayless
D. E. Bean
M. F. Bell
R. D. Benjamin
R. T. E. Bishop
F. A. Bisel
B. Boecher
W. R. Bradley
J. W. Brand
D. J. Brethaupt
H. J. Brekke
H. Brodsky
A. E. Brown
T. R. Brown
R. F. Buchan
D. E. Bulluck
J. A. Burke
C. A. Burkhart
R. A. Bush
A. W. Capon
S. B. Chennault
N. W. Choi
H. E. Christensen
A. H. Clagett
C. L. Clarke
E. Y. Clarke
W. A. Clark
W. S. Clough
H. A. Cochran, Jr.
W. F. X. Coffey
D. R. Cole
J. E. C. Cole
M. A. Conpton
F. R. Conpton
C. E. Cook
R. L. Cooke
R. H. Craig
S. J. Culter
J. P. Davis
Z. A. DeBeber
G. A. DeVeber
F. Dinkler
A. H. Dornum
J. P. Dorelian
L. T. Dorton
A. A. Dun
T. C. Dunlop
W. W. Eakin
L. H. Earle, Jr.
C. M. Eberhart
T. M. Edwards
I. C. Emmett
J. A. End
R. Engleman
P. S. Ensmacher
S. M. Euba
W. E. Evans, Jr.
K. A. Evelyn
P. M. L. Forstberg
G. E. Fort
R. E. Gaddy, Jr.
A. Goenick
C. D. Gossage
J. E. Grainger
C. H. Gray
J. R. Gudger
V. W. Guenter
I. M. Hall
E. J. Halliday
G. W. Halpenny
V. G. Hammond
R. G. Handford
J. R. Hanes
S. B. Harper
H. L. Haws
H. D. Hebb
M. Hefli
M. H. Henderson
R. E. Hennings
W. A. Henry
E. J. Herko
E. C. Hilmann, Jr.
C. H. Hollenberg
E. G. Howe
C. H. Huddleston
W. J. Hunzicker

J. R. Huston
J. M. Hutchinson, Jr.
J. J. Hutchinson
A. S. Irving
J. G. Irving
A. N. Jay
E. R. Johnston
N. Jones
O. L. Jordan
F. J. Kelferstein
R. F. Kemper
H. U. Kennedy
J. A. Kligour
O. C. Kimberell, Jr.
R. King
W. L. Kinsmaster
Y. Kojima
E. Langdon
P. H. Langner, Jr.
A. L. Larson
C. R. Lashley
S. T. Lauter
D. Lawson
M. J. LeDoux
H. E. Lehmann
J. J. Lempe
C. H. Lentz
W. R. Leutg, Jr.
J. C. Lindner
V. L. Love
E. S. McCleary
J. D. McGarry
F. J. McGuff
T. J. McGuff
E. W. McPherson
F. A. McVicker
R. C. Mackey
M. Magday
O. T. Malley
W. O. Martin
F. A. L. Mathe
R. M. Matlew
P. S. Metzger
H. E. Miller
Willard B. Mills
E. L. Mitchell
G. S. Modjeski
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J. F. Moran, Jr.
Y. L. Morn

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R. A. Nelson
F. J. Newirth
G. E. Nielsen
Y. Noguchi
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A. E. Parks
J. S. Pearson
R. A. Pearson
D. S. Pepper
A. J. Phillips
T. N. Pirkle
F. I. Pitkin
W. O. Pundy
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D. O. Schultz
R. C. Secor
T. S. Sexton
V. P. Simmons
G. A. Simpson
H. C. Simpson
J. C. Sinclair
R. B. Singer
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D. R. Smith
H. A. W. Smith
W. A. Soderman
G. N. Spears
F. L. Springer
C. W. Stevenson
R. B. Stetler
F. M. Stites
H. A. Tarrant
M. J. Taylor
R. C. Teall
L. S. Thompson, Jr.
J. W. Tice
J. W. Unger
H. E. Ungerleider
B. W. Vale
F. P. Valenzuela
A. L. Van Ness
K. B. Vaughan
A. J. Vinci
E. E. Vita

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B. L. Wales, Jr.
M. R. Walker
J. H. Walsh
W. D. Walters
K. E. Ward
F. A. Warner
J. M. Weber
N. L. West
G. M. Wheatley
C. W. Whitmore
E. B. Williams
R. H. Williams
J. S. Winder
R. G. Wood
D. H. Woodhouse
G. G. Young
Messrs.:
J. G. Brasseur
C. Z. Hanor
M. Kaplan
E. A. Lew
T. J. Lowas
H. H. Nichols
N. D. Setzinger
C. H. Trimley
J. R. Ward
J. C. Wilberding
C. A. Will
F. D. Wood
Mrs. E. Redo

LIST OF MEMBERS

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