WORLD HEALTH ORGANIZATION

INTERNATIONAL AGENCY
FOR RESEARCH ON CANCER

DEUTSCHES
KREBSFORSCHUNGSZENTRUM

DIRECTORY OF ON-GOING RESEARCH IN CANCER EPIDEMIOLOGY 1985

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INTERNATIONAL AGENCY FOR RESEARCH ON CANCER
LYON 1985

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This Directory is a joint effort of the International Agency for Research on Cancer (IARC), Lyon, France, and the German Cancer Research Center (DKFZ), Heidelberg, Federal Republic of Germany within the framework International Cancer Research Data Bank of the Office of International Affairs (OIA) of the National Cancer Institute (NCI), United States of America.
The OIA provides online databases: CANCEREXPRESS, CANCERLIT, CANCERPROJ, CLINPROT and PDQ (Physician's Data Query) and publications: Cancergrams, Cancer Treatment Reports and Cancer Treatment Symposia, in addition to partially supporting the Clearing-House for On-going Research in Cancer Epidemiology (Contract NO1-CO-55195). Further information can be obtained from the International Cancer Information Center, Office of International Affairs, Building 82, Room 103, National Cancer Institute, Bethesda, MD 20205, USA

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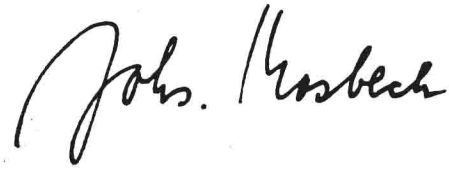
10th Anniversary Message

With this issue of the Annual Directory the Clearing-House for On-Going Research in Cancer Epidemiology celebrates its 10th Anniversary.
Those who have used the Directory over the past decade have seen the Clearing-House extend its coverage to include most of the world. The studies described vary from the simplest description of local cancer patterns to highly complex epidemiological investigations requiring the most advanced laboratory support. The large number of studies of occupational exposures reflects widespread concern about such problems. The past few years have also seen reports on intervention to control risk factors thereby testing the third of Koch's postulates. The Editors have undertaken periodic evaluation of the use made of the Directory and have pointed out gaps in the sites and hypotheses bing examined as well as recording the problems being studied and the methods used.
For epidemiologists working in the field of cancer the Clearing-House and its Annual Directory have proved an invaluable means of keeping their fingers on the pulse of their discipline.



J. Mosbech

President
International
Epidemiological Association

PREFACE

The Clearing-House for On-going Research in Cancer Epidemiology has now been in operation for 10 years. The wide distribution and use of the 10 annual directories published to date fully justify its existence and bear witness that the aims of the Clearing-House have been achieved, namely, to act as a central registry from which epidemiologists and others can obtain information on current work, to facilitate direct contacts between research workers and avoid unnecessary duplication of work.

The Directory provides a global overview of the volume and direction of epidemiological cancer research. While the sum total of work underway remains fairly constant, an expansion of epidemiological effort is noted in many countries. Further, many studies are technically becoming more sophisticated. The regular increase in the number of epidemiological studies on environmental and industrial exposures has now slowed down, while a new area of interest has emerged: Intervention.

A new feature of the 1985 Directory is the inclusion of projects in the field of mutation epidemiology, which, it is hoped, will enhance the value of the Clearing-House. This is being done in collaboration with the International Commission for Protection against Environmental Mutagens and Carcinogens (ICPEMC).

The possible role of modifiers of carcinogenesis is receiving growing attention. The number of epidemiological studies on promotors in human cancer is however still small. Similarly, investigation of factors considered to be protective such as certain vitamins, which has engendered, studies in several countries, deserves intensified effort. Epidemiological studies planned and carried out jointly with research laboratories or making use of laboratory methods, as, for example, the possibility of identifying individuals exposed to hazardous chemicals by analysis of fluids and excreta, deserve expansion.

Collections of biological materials may be valuable for epidemiological research. The inclusion of a listing of such banks and their holdings in the Directory will again strengthen the usefulness of the Clearing-House.

Despite the wide recognition of the value of epidemiology the sums of money devoted to this area of cancer research are with few exceptions trivial as the analysis of such expenditures contained in this anniversary issue indicates all too cleary.

It is to be hoped that this Directory will be helpful in drawing the attention of investigators to areas which need more intensified effort.

Dr L. Tomatis

Director
International Agency for
Research on Cancer (IARC)

Prof H. zur Hausen

Scientific Director
Deutsches Krebsforschungs-
zentrum (DKFZ)

INTRODUCTION

The concept of a clearing-house for on-going research arose in several centres at much the same time. The International Agency for Research on Cancer (IARC), Lyon, France, decided to create a Clearing-House for Cancer Epidemiology of the type so successfully established for Smoking and Health. Realizing that such a venture would require the collaboration of a group experienced in handling literature abstracts on a computerised basis, the Agency approached the German Cancer Research Center (Deutsches Krebsforschungszentrum - DKFZ), Heidelberg, Federal Republic of Germany, which had acquired considerable expertise in this area.

The Clearing-House for On-going Research in Cancer Epidemiology was established in 1974, partially supported through a contract with the International Cancer Research Data Bank (ICRDB) of the National Cancer Institute of the USA. The ICRDB promotes wide dissemination of research information. To ensure maximum availability projects provided to the Clearing-House are forwarded to the ICRDB. These descriptions are entered into an online database called CANCERPROJ, which contains approximately 20,000 active projects. CANCERPROJ is available through the MEDLARS System of the National Library of Medicine of the USA.

Mailing List

Addresses of potential collaborators continue to be extracted from listings provided by the Excerpta Medica Foundation and the ASCA Service of the Institute for Scientific Information (ISI). The CANCERNET system is screened in Heidelberg. Extensive use is also made of the CANCERLIT and MEDLINE/TOXLINE systems, other ICRDB Program resources, and of the annual reports of research institutes and councils and lists of participants of meetings and members of associations.

Coding of Addresses

Addresses extracted from the sources mentioned above are coded and entered into the computer in Lyon. Incomplete addresses are completed when possible, using the resources of the IARC Library. An address tape is transferred to Heidelberg where the new addresses are added to the current address file.

Response from Contributors

An invitation to contribute to the Clearing-House is sent to scientists in English, French, German, Italian, Russian or Spanish, accompanied by a questionnaire and a sample completed questionnaire to indicate the general nature of the information required.

For the 1985 Directory 2,450 persons received invitations to contribute. Some 261 completely new projects were reported; 55 of the investigators contacted were kind enough to inform us that they are not at present or no longer working in the field of cancer epidemiology, and their names have been removed from the mailing list. A further 55 persons had no project to report. The 1985 Directory thus contains 1229 projects reported from 66 countries. The data reported on are being collected in 88 countries.

Readers may be interested to know that the Directory seems to be tending to a "steady-state" in that the number of new projects has decreased in the last years and more or less equals the number of deleted projects (Fig. 1). Possible reasons for this are: a) more or less total coverage of the epidemiological community willing to collaborate, b) greater complexity of many of the epidemiological studies now being initiated, often resulting in an extension of the study period, or c) fewer studies being initiated because of lack of funding in much of the world (see section: Funds Allocated to Cancer Epidemiology). The table below shows the number of projects included in each Directory, the number and percentage of completely new studies, the number of countries in which the study is carried out and the number of countries in which the data are being collected.

Year	Projects	New Projects (%)	Participating Countries	Data Origin (Countries)
1976	622	622 (100.0)	55	65
1977	908	467 (51.4)	61	69
1978	1025	341 (33.3)	63	70
1979	1092	295 (27.0)	66	74
1980	1261	353 (28.0)	69	78
1981	1313	299 (22.8)	70	80
1982	1247	275 (22.1)	64	74
1983	1302	256 (19.7)	67	80
1984	1213	200 (16.5)	61	80
1985	1229	261 (21.2)	66	88

While many countries have increased their contribution through out the years, that of others have remained unchanged or even decreased. USA and UK are still by far the largest contributors (Fig. 2).

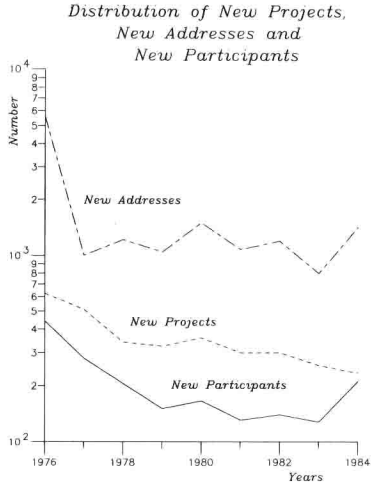


Figure 1

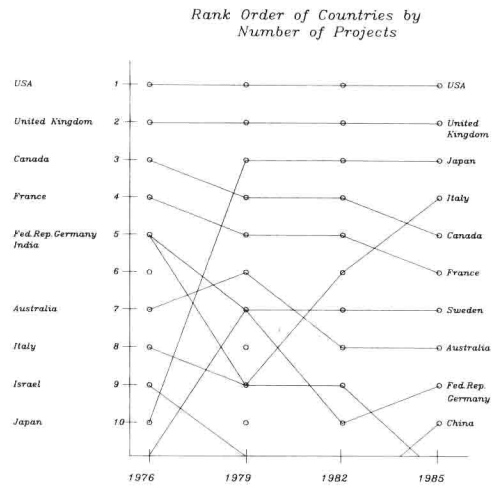


Figure 2

DISTRIBUTION OF PROJECTS TO PARTICIPATING COUNTRIES

COUNTRIES	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
USA	239	324	370	374	438	463	421	422	377	348
United Kingdom	85	139	143	142	158	160	129	136	120	115
Japan	12	37	45	61	67	73	72	73	78	82
Italy	15	19	18	24	36	44	47	58	57	67
Canada	33	45	42	58	72	61	62	71	59	59
France	24	27	34	34	45	50	56	59	48	50
Sweden	11	16	21	29	30	33	43	39	36	49
Australia	16	27	32	31	32	31	41	44	42	42
Federal Rep. of Germany	21	28	31	29	30	28	28	31	32	37
People's Rep. of China	0	0	0	0	1	4	9	17	21	31
Denmark	7	12	13	14	17	23	26	29	31	30
India	21	21	26	24	31	33	29	33	26	27
Netherlands	5	8	7	15	19	15	16	15	24	24
Israel	14	18	22	20	20	23	19	20	17	17

The contribution from other countries was less than twenty projects in each year.

TOTAL OF PROJECTS	622	906	1025	1092	1261	1313	1247	1302	1213	1229
NUMBER OF COUNTRIES	55	61	63	66	69	70	64	67	61	66

However, the rank order is completely different if the number of projects reported by a country is related to the population size (Fig. 3) or to the gross national product of that country (Fig. 4).

Occasionally, the same study was reported by two or more persons who designated themselves as principal investigator, or study co-ordinator. It has generally been possible by correspondence to resolve this problem, but for those discovered on the eve of printing an arbitrary decision has been made - we would like to apologize if our choice was incorrect.

The editors would like to stress that investigators can, of course, report studies at any time, whether they have been contacted by the Clearing-House or not.

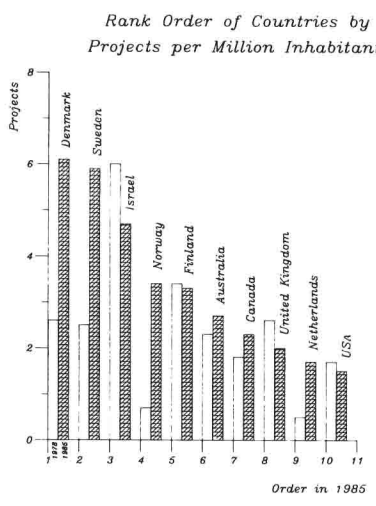


Figure 3

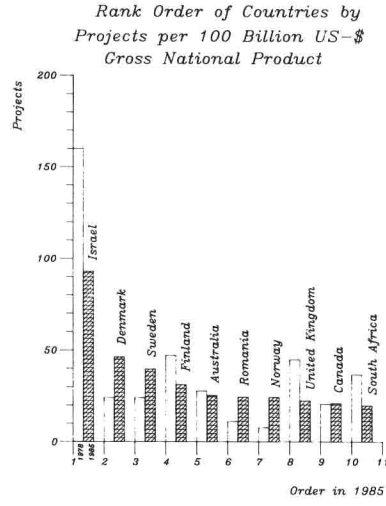


Figure 4

Selection of Material for the Clearing-House

The editors have hitherto interpreted epidemiology fairly broadly. Thus, studies have been included which describe the characteristics of patients with specific cancers, but for whom there is no control group. These investigations were included in the Directory because such information may be useful for hypothesis formulation. With increasing pressure on Directory space the editors were compelled to modify this policy. It was thus decided to exclude descriptive case studies from Northern America and West Europe. Such studies from East Europe and the developing countries will still be accepted.

Should there be doubts as to the meaning of an abstract or need for additional information, the contributor is contacted. For this Directory some 90 such letters were sent. More than half the queries related to the size of the study, the control group used or the methods employed. We would like to thank respondents who have taken the trouble to supply further information. The Editors would like to make it quite clear that contributors are responsible for the accuracy of their submissions. The Editors do not act as referees.

It will be noted that the amount of information given for each project is variable. Some scientists provide a rather detailed account of their studies, others a bare outline. The type and scope of the information the Editors would like to receive is clearly outlined in a completed specimen form, sent to all potential contributors. A project is not entered by title only.

Readers may find a certain discrepancy between the information contained in an abstract and the related key-words. This is due to further information provided by the investigator on the questionnaire. The editors closely follow these indications and hence a cancer site, occupation, chemical, etc., though not mentioned in the text, may appear among the key- words.

References

When provided by the investigator, most important or most recent references in relation to studies in the Directory are included in the study abstract. The references give title of journal, volume, pages and year of publication in this order. The name of the first author is only given if other than the principal investigator.

Keeping the Clearing-House Current

As the utility of the Clearing-House depends on keeping the data base free from published work, the 895 contributors to the 1984 Directory were contacted and asked to update and revise their contribution. The total response rate, after reminders, was about 83%.

When 1984 was given as termination date, contributors were specifically asked to state whether the work would be extended into 1985. Several investigators indicated that their work was now published and should no longer appear in the Directory, but unfortunately many others did not reply. In that event, the project was removed. Projects which were stated to be on-going but for which no information or update had been received for three years despite reminders were also deleted. When the editors became aware that work with a later termination date had indeed been published, this too was removed. Abstracts which seemed to report completed work were checked in MEDLINE/CANCERLINE to ensure that the study had not been published.

Mutation Epidemiology

After discussion with the International Commission for the Protection against Environmental Mutagens and Carcinogens (ICPEMC), which had expressed a desire to create a clearing- house for mutation epidemiology of the same style as the cancer epidemiology clearing- house, projects in the field of mutation epidemiology have been included in this Directory on a trial basis. These projects were edited and key-worded by Professor W.J. Schull, Director of the Center of Demographic and Population Genetics at the Graduate School of Biomedical Sciences, University of Texas, Houston, USA, on behalf of the ICPEMC. In this context, the expression "mutation epidemiology" is meant to include all research aimed at the estimation of spontaneous as well as environmentally induced rates of somatic, germinal and heritable mutation in man and the assessment of their impact. It further embraces the design and implementation of surveillance strategies in man to achieve these ends. Emphasis has been placed on human research and not upon test systems per se nor the demonstration of mutagenicity in organisms other than man.

Projects already in the Directory indexed "Familial, Genetic" were scrutinized and those considered to enter clearly under our definition of mutation epidemiology were key-worded accordingly.

In this context, it was noted that many of the projects indexed "Familial, Genetic" rather pertain to "Family History" and it was decided to introduce this new key-word for the next Directory.

Projects relating to mutation epidemiology are identified by a black dot (●).

Biological Materials Banks

Another new feature of the 1985 Directory is the section of biological materials banks. Such banks can provide valuable historical records for individuals and population groups and several investigators have expressed an interest in joint laboratory and epidemiological investigations based on material in their possession.

Production of the Directory

To facilitate identification of a project each incoming relevant study is assigned a unique identification number (ID) which is attached to the study for as long as it appears in the Clearing-House. This identification number appears after the running serial number in the Directory. While the same study is likely to have a different serial number from one year to the next, the ID number, by definition, remains the same.

After editing, abstracts are key-worded for tumour localisation, the epidemiological methods employed and descriptors of general content. For economy of space and indexing the Editors try to keep the number of key-words to a minimum, but the list of key-words is continually modified to fit the topics of interest. Recent additions include, for example, "Acquired Immunodeficiency Syndrome" and "Intervention". Each new

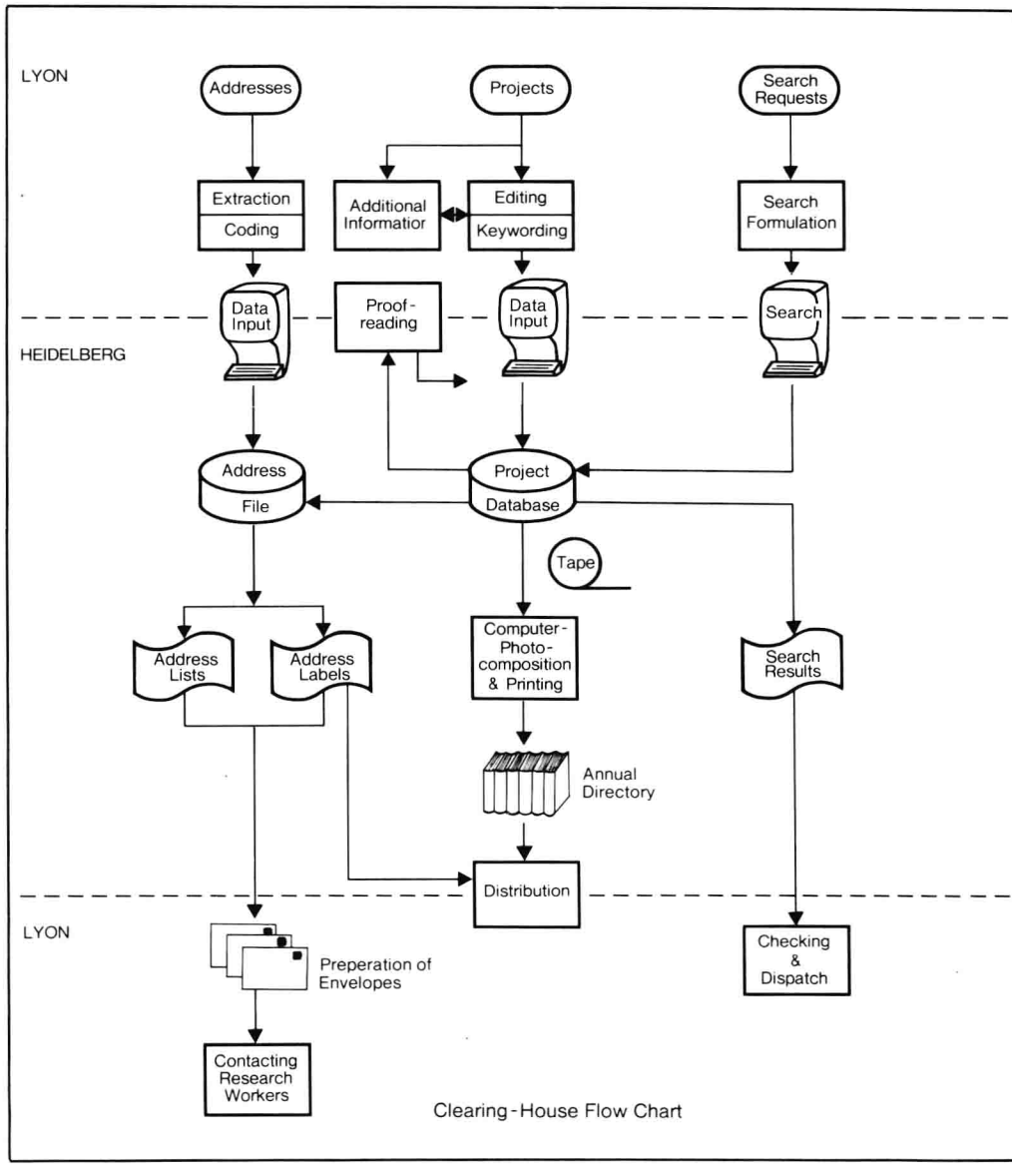


Figure 5

key-word needs to be inserted not only for new projects but for all those relevant already in the database. Sometimes this can be done automatically, but frequently it is necessary to scan a large number of abstracts.

A large proportion of the new abstracts and many of the updated have to be retyped after editing. Since 1982 such abstracts have been typed into the computer in Lyon and transferred on tape to Heidelberg. (Fig. 5)

Errors noted on checking are corrected on a terminal using the REDITOR data manipulation language. The REDITOR programme permits alterations, additions, deletions of lines or texts on the terminal, alterations of the same nature being carried out by one command for the entire data base or part of the data base as desired. With the aid of INDA (Interpretative Datenbank-Sprache - the data base system available in the DKFZ), a change in input, search and output of text is possible. In order to apply this system, however, the data must be structured, i.e. each data record must be unequivocally characterised by field marks. Every project reported was hence written as one record for which maximum length of 4,000 characters was envisaged. Each record was divided into 24 fields, data of the same nature being placed in fields of the same name, making automatic index generation possible.

The INDA printout was made ready for printing by computer photocomposition. The desired lay-out is achieved by inserted commands. New lines, indents, new pages and the numbering of the pages are automatically controlled.

Unfortunately, REDITOR, INDA and the command language for photocomposition are not mutually compatible so that special programmes are required for transition from one system to the other. These conversions as well as the programmes for setting up the index lists had, therefore, to be programmed in addition. This was done with the aid of PL/1.

After final review in Heidelberg and Lyon the material is ready for the preparation of the Annual Directory. At the same time the information is added to the data base of the ICRDB Program. The Directory is printed by photocomposition techniques directly from the output tape.

Indexes and Lists

To facilitate access to the projects in the Directory, the following alphabetical indexes and lists have been prepared:

- Name of investigator;
- Term (key-word), by cancer site;
- Cancer site, by term (key-word);
- Type of study, by cancer site;
- Specific chemical exposure, by cancer site;
- Specific occupation, by cancer site;
- Country where data are being collected, by cancer site.

Exposures to Chemicals

A separate index is given to facilitate identification of studies dealing with exposures to individual chemicals. The epidemiological investigations relating to persons known or suspected to have been exposed to certain chemicals, which are also currently being tested for carcinogenicity in animals, are listed in an Appendix to the Information Bulletin on the Survey of Chemicals Being Tested for Carcinogenicity, published by the IARC. Workers in experimental carcinogenesis can thus be aware of epidemiological information being gathered in populations exposed to these chemicals. Those interested in receiving further information about this Information Bulletin should contact Ms M.J. Ghess of the Division of Environmental Carcinogenesis, IARC.

Index of Occupations

The Directory contains a List of Occupations, where specific occupations and occupational groups under study are listed. This, we hope, facilitates access to information for readers interested in occupational cancer. Studies of workers exposed to a particular chemical (e.g. chloromethyl ethyl ether, lead, toluene, vinyl chloride, etc.) are still to be traced through the Chemical Index (see above), as a specific occupation may not be mentioned. There is inevitably a degree of overlap between the Index of Occupations and the Index of Chemicals.

List of Abbreviations

This list was created in 1981 in an attempt to save space and includes the most common abbreviations used in the project abstracts. The meaning of other abbreviations is given in full in the abstract in which they appear.

Completeness of Coverage

The editors are well aware that there are gaps and omissions in the Directory and try to spread their net as widely as possible. However, they cannot compel investigators to report their work to the Clearing-House. It would be of great assistance to the editors if 11 the Directory users, who are aware of epidemiological studies which are not included in the Directory, could inform the Clearing-House of these.

Searches of the Data Base

Investigators can ask to have the Clearing-House data base examined at any time for special searches in the cancer epidemiology field. Requests for such searches, which are free of charge, should be sent to IARC, Lyon.

Reference Survey

During the last few years there have been several requests for references for publications emanating from studies appearing in the annual directories. In an attempt to meet with this request the Clearing-House editors decided to contact the principal investigators for those projects in the 1976, 1977 and 1978 directories which had been deleted. (A project is deleted when: (1) stated to be completed or discontinued by the investigator; (2) the expected year of termination of the study is that of the current Directory and no update has been received; (3) there has been no contact despite letters from the Clearing-House with the investigator for three consecutive years). Listings for the 1976, 1977, 1978 and 1979 directories were thus printed and projects appearing in one listing but not in the subsequent one were extracted. It is to be noted that a project may change principal investigator or title from one year to the other and that the unique ID-number was only introduced in 1979, which made it impossible to compare the data sets automatically. For example, some twenty projects in 1977 appeared in 1978 under another investigator name. Five of the projects deleted from the 1976 Directory re-appeared in 1978 and a few as late as in 1980.

Projects meeting criteria 1), 2), and 3) above were thus identified and some 371 investigators sent a computer print-out of the study in question together with a circular letter asking them to indicate whether the study had resulted in a publication or not and if not, the reason. Five envelopes were returned as undeliverable. 216 individuals replied (a response rate of 59%). The replies cover some 243 projects distributed as follows:

Studies resulting in publication(s)	159
Studies resulting in no publication	84
due to	
study still on-going	31
lack of funds	17
lack of staff	15
technical problems	10
"negative" results	11
other reasons	19

It is to be noted that the various reasons given for "studies resulting in no publication" are not mutually exclusive. Seven replies indicated that the outcome of the project was unknown and for some studies the results had been incorporated in publications relating to other studies.

Some 13 of the studies indicated as still on-going had previously been deleted from the data base on the request of the investigator.

A large proportion of studies yielding "negative" results remain unpublished. In this survey projects were not published for this reason. Nonetheless by appearing in the Clearing- House publication as an on-going project other research workers had the opportunity to know about their existence and to contact the investigators for further information.

It would be of the greatest interest to have comparable information for other fields of medical research.

Quoting the Directory

While the Editors endeavour to have abstracts as clear and informative as possible they are in no sense referees. It is well known that interim figures and conclusions may change over time and on final analysis. The Clearing-House Directories should thus not be quoted as a reference in scientific papers.

Acknowledgements

Clearing-House and ICRDB Program material were translated into French, Italian, Spanish and Russian by our colleagues Mr Y. Pollet, Drs L. Simonato, X. Bosch and R. Gurevicius and into German by Ms L. Blumenthal.

Needless to say, this Directory would not have been possible without the reports of on- going work sent by all our contributors. We would like to take this opportunity to apologize to those scientists who have recently reported their work, but whose reports arrived too late for inclusion in this edition of the Directory, and to those whom we still have to contact.

Last but not least, we would appreciate comments and suggestions concerning this publication so that future editions may be improved.

Lyon and Heidelberg, June 1985

C.S. Muir
G. Wagner

ANALYSIS OF STUDIES REPORTED TO THE CLEARING-HOUSE IN 1985: CANCER SITES, METHODS USED AND GEOGRAPHICAL DISTRIBUTION

One of the functions of the Clearing-House for On-going Research in Cancer Epidemiology is to monitor changes in the sites of cancer being studied, the hypotheses being tested, and the epidemiological methods used, with a view to suggesting where further effort is required, as well as assessing the level of epidemiological effort on a national and regional basis.

Methods

Analyses of the studies reported to the Clearing-House appeared in the 1978, 1979 and 1981 Directories. In the current Directory, as previously, each study was assigned, as far as possible, to one cancer site, one study type and one country. (For brevity, the words "cancer of" are frequently omitted when mentioning the anatomical sites of cancer).

When the same investigation dealt with more than one anatomical site, these were considered separately, particularly when involving different systems of the body. This explains why the total number of projects is somewhat higher in the tables than in the Directory. For many investigations, notably those of a statistical nature and cohort studies (occupational and others) cancer arising in any organ is of interest and hence "All Sites" is the largest category in the tables.

For "geographical distribution" the country where the data are being collected was used. Usually this corresponds to the country of the principal investigator, but sometimes data are being collected in several countries. Whenever these could not be entered under a regional heading, e.g. "Europe, East", "Europe, West", "South America", etc., "Multinational" was used, this term also including "Worldwide".

For "type of study" the following broad categories were used:

Case characteristics: Studies of cancer patient characteristics, where no control group is being used.

Case-control: Studies in which causal hypotheses are tested by comparing the replies of cancer patients and their controls to questions about their habits and exposures.

Cohort: Studies in which groups with specific exposures are followed to determine whether these are associated with an increased cancer risk (see also "high risk groups" and "occupational exposure").

Correlation: Studies to determine whether there is a parallelism at the population or group level between an exposure and the risk of cancer. Genetic, familial: Studies investigating the role of genetic or familial factors in cancer.

Intervention: Trials assessing the effect of intervention on cancer risk. Morphology: Studies relating the microscopic appearances of cancer to epidemiological features.

Occupational exposure: Studies to assess the risk of cancer, usually by the cohort method, in groups with defined occupational exposures.

Radiation: Studies to examine cancer risk in persons exposed to ionizing radiation.

Screening: Relates to studies in which the effect of screening programmes is being evaluated.

Statistics: Covers those investigations - incidence, mortality or relative frequency - assessing the magnitude of the cancer problem in a country or region. This heading also includes studies dealing with statistical methods and cancer registries.

Virus: Studies in which a viral hypothesis of aetiology is being tested, irrespective of the epidemiological method used.

Other: A residual category for those studies which could not be assigned to one of the above.

Clearly this approach is simplistic and while an attempt was made to allocate study type and the site under study in as uniform a manner as possible, it is likely that there would be differences of opinion between classifiers concerning the assignments.

A new feature of the 1985 Directory is the inclusion of studies on mutation epidemiology. These entries are different in structure, e.g. "Site" is often not applicable, and have been excluded from the cross-tabulation, to allow comparison with tables in previous years. They account for approximately 3% of the total.

Results

Numbers: While the total number of projects in the Directory has increased by about 35% since 1977, the number of new projects reported has been fairly stable in recent years. While USA and UK are still the largest contributors, the proportion of projects from these countries has however decreased (UK: 14% in 1977, 8% in 1985; USA: 32% in 1977, 26% in 1985). The contribution from Africa and South America has also slightly decreased while that from Oceania, the Far East and Japan has increased. The contribution from West Europe increased from 19% in 1977 to 25% in 1985, while those from Canada, East Europe and the Middle East have remained fairly constant.

Types of study: The number of case-control studies has increased throughout the years and is the method of choice in almost one fourth (24%) of the projects, followed by those dealing with occupational exposure (19%), statistics (16%) and cohort studies (10%). The actual number of case-control studies has doubled since 1977. Studies dealing with occupational exposures have increased by 56%, while the frequency of those pertaining to correlation, high risk groups and morphology has decreased. Despite the great interest in viral hypotheses in the aetiology of cancer and in evaluation of screening the number of such studies has decreased.

Among the studies testing a viral hypothesis, the lymphomas and cancers of the nasopharynx, liver and cervix uteri were the most common. Some 40% of screening studies were devoted to the cervix, 20% to breast. As could be expected, the most common site under the rubric "statistics" was "all sites" of cancer, an end-point also of interest in 42% of radiation and 36% of occupational exposure studies. More than one third of the cohort studies looked at "all sites".

"Intervention", a new entry in this year's table, accounted for about 1% of the projects.

The case-control study was more than twice as frequent in the USA as in UK, while cohort studies (including those of occupational exposures) were slightly more frequent in UK. West Europe has almost doubled the proportion of occupational exposure studies since 1977 (and tripled the number). An increasing interest in this type of study was seen in Africa (from 2% in 1977 to 12% in 1985) while "Virus" dropped from 16%-7% in the same period.

As could be expected, in regions where analytical studies have increased, descriptive statistical studies have tended to decrease.

Sites studied: There has been remarkably little change in the sites studied since 1977. Lung is still by far the most common (over half of the studies relating to occupational exposure) followed by breast and stomach. A slight increase can be noted in those dealing with the oral cavity, oesophagus, soft tissue and intestine and, though still very rare, pancreas and malignant melanoma. The number of studies of common cancers such as prostate continues to decrease. A slight decrease is also observed in studies of leukaemia and brain and childhood tumours.

Site and place of study: Looking at the geographical distribution of sites studied, in Africa, investigations of stomach and oesophagus have increased over the decades (12% and 14% respectively in 1985, 5% and 7% in 1977), while those of liver and malignant lymphoma decreased (14% and 7% respectively in 1985, 25% and 14% in 1977). In East Europe a slight increase (3%) can be seen in studies of cancer of stomach, intestine and breast, while those of the female genital tract decreased by 5%. In the Middle East, investigations of cancers of the oral cavity, intestine and leukaemia have increased slightly with a corresponding decrease in those of other sites. In Oceania, interest in breast cancer has increased (4% in 1977, 13% in 1985). In the Far East the number of studies of oesophageal cancer has increased from 1% in 1977 to 10% in 1985, mainly due to the increase in the contribution from China. The proportion of studies of stomach and liver cancer has increased substantially in South America, while cervix has decreased. Both USA and UK have slightly increased the proportion of studies of the intestine, oral cavity and bladder. In Canada, West Europe and Japan very little change has taken place.

It can be noted that in all regions the proportion of studies involving "All Sites" has decreased in favour of site specific studies.

Tables 4-6, which are new for this directory, allow a comparison between the content of the 1977, 1981 and 1985 directories, giving the total numbers of projects for each site, geographical region and study type as well as the percentages of totals.

Table 1. Geographical distribution of on-going epidemiological studies 1985 by primary site of cancer (9th edition of the ICD)

	All sites	Oral Cavity 141–146	Nasopharynx 147	Oesophagus 150	Stomach* 151	Intestine 152–154	Liver, Gallbladder 155–156	Pancreas 157	Nasal Sinus, Larynx 160–161	Lung* 162	Mesothalioma* 163.0	Bone, Soft Tissue 170–171	Melanoma of Skin 172	Other Skin	Breast 174	Cervix 180	Other Female Genital 181–184	Male Genital 185–187	Bladder, Kidney, etc. 188–189	Eye, Brain, etc. 190–92	Endocrine 193–194	Malignant Lymphoma 200–203	Leukaemias 204–207	Childhood Neoplasms	Other	Total	% of Total
Africa	7	–	1	6	5	1	6	–	–	3	–	1	–	–	3	–	–	1	–	–	–	3	3	1	1	**42**	**3.1**
Canada	16	–	1	–	1	2	–	1	2	12	1	1	1	2	10	5	1	2	2	2	–	2	–	–	–	**64**	**4.8**
Europe, East (incl. USSR)	16	2	–	1	12	4	–	–	2	13	1	–	2	4	15	4	2	2	–	2	–	1	3	–	2	**88**	**6.5**
Europe, West (excl. UK)	94	8	4	3	25	8	3	4	9	48	8	7	6	1	29	15	14	2	8	1	7	11	9	8	6	**338**	**25.1**
Far East (excl. Japan)	13	9	7	9	2	2	11	–	1	11	–	–	1	–	3	9	1	–	–	2	2	3	1	1	–	**88**	**6.5**
Japan	24	–	–	3	11	2	7	1	3	8	–	–	–	–	4	4	3	–	3	2	3	2	3	1	–	**84**	**6.3**
Middle East	8	2	–	2	–	2	1	–	–	3	2	–	1	1	1	1	1	–	–	1	–	3	3	1	1	**34**	**2.5**
Multinational	14	–	4	–	1	–	3	1	–	–	–	2	3	1	3	3	2	4	2	3	–	4	–	1	1	**52**	**3.9**
Oceania	9	2	–	1	–	6	1	3	–	4	2	–	4	2	8	2	4	–	2	1	–	5	3	2	3	**64**	**4.8**
South America	4	1	–	1	3	1	4	–	–	2	–	–	–	1	2	2	1	–	–	–	–	2	2	–	–	**26**	**1.9**
UK	26	1	–	1	4	10	1	1	–	14	4	2	1	1	11	4	4	5	8	–	–	5	3	3	4	**113**	**8.4**
USA	91	10	3	–	9	24	5	2	4	42	1	9	7	4	25	14	13	5	17	5	8	11	12	13	17	**351**	**26.1**
All countries	**322**	**35**	**20**	**27**	**73**	**62**	**42**	**13**	**21**	**160**	**19**	**22**	**26**	**17**	**114**	**63**	**46**	**21**	**42**	**19**	**20**	**52**	**42**	**31**	**35**	**1344**	
% of Total excl. All Sites	**–**	**3.4**	**2.0**	**2.6**	**7.1**	**6.1**	**4.1**	**1.3**	**2.1**	**15.7**	**1.9**	**2.2**	**2.5**	**1.7**	**11.2**	**6.2**	**4.5**	**2.1**	**4.1**	**1.9**	**2.0**	**5.1**	**4.1**	**3.0**	**3.4**		

* Stomach includes gastrointestinal tract
Lung includes respiratory tract
Mesothelioma includes pleural and peritoneal mesothelioma