

# CENTRE REPORT '86 - '87

ANNUAL REPORT AND SUMMARY OF ACTIVITIES

CENTRE FOR AGRICULTURAL MEDICINE, DEPARTMENT OF MEDICINE, COLLEGE OF MEDICINE, UNIVERSITY OF SASKATCHEWAN  
Fifth Floor Ellis Hall, University Hospital, Saskatoon, Saskatchewan, S7N 0W0

## FIRST ANNUAL REPORT

January 9, 1986 to April 30, 1987



Signing the agreement establishing the Centre for Agricultural Medicine. Seated (l. to r.) are Dr. L.F. Kristjanson, President, University of Saskatchewan, and Mr. J.W. Churchman, President, Saskatchewan Lung Association. Standing (l. to r.) are Dr. I.M. McDonald, Dean, College of Medicine; Dr. J.A. Dosman, Director of the Centre; and Dr. R.M. Bala, Head, Department of Medicine.

## Chairman's Report

In 1986, the Centre for Agricultural Medicine was established as a division of the Department of Medicine, College of Medicine, University of Saskatchewan. The idea for the Centre originated in 1983. At that time, a joint committee from the University of Saskatchewan and the Saskatchewan Lung Association addressed the problems of health, safety, and lifestyle specific to farmers and their families. With the growing recognition of this group's contribution to Saskatchewan's economy grew an awareness of the need for such measures.

To this end, the committee recommended that the University of Saskatchewan host an International Symposium on Health and Safety in Agriculture. This meeting, held in October, 1985, confirmed the vast potential for scientific research, health promotion, teaching, and preventative public health measures. The study encompasses an increasingly broad spectrum, ranging from dusts, chemicals, cancer, and skin problems to farm safety, asthma, and farm stress. During the Symposium, each of these concerns was addressed, and all provide a scientific and medical basis for the continuing development of the Centre for Agricultural Medicine.

A Memorandum of Agreement between the University of Saskatchewan and the Saskatchewan Lung

Association, dated January 9, 1986, established the Centre. Of the many whose efforts contributed to this achievement, I am indebted, most particularly, to Mr. J.W. Churchman, President of the Lung Association, and Dr. R.M. Bala, Chairman of the Department of Medicine. The leadership provided by Dr. L.F. Kristjanson, President of the University of Saskatchewan, has been much appreciated. We are grateful for this essential support.

The generous contribution by the Saskatchewan Lung Association is acknowledged with thanks. As well, University Hospital has housed the Centre within the Department of Medicine, and given its whole-hearted support to the project. In addition, I would like to express my sincere appreciation to the members of the Board of Directors of the Centre.

In concluding, let me say that we believe that the Centre has served, and will continue to serve, a specific and unique need, both for the people of Saskatchewan, and for those beyond its borders.

Sincerely,

I.M. McDonald, M.D., F.R.C.P.(C), F.A.P.A.  
Chairman, Board of Directors  
Dean, College of Medicine

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## Our Mandate

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**Research** — New knowledge and realistic assessment of health risks is tied to careful research. Our purpose is to carry out and stimulate research in areas of potential health risks including the effects of dusts and chemicals, occupational asthma, chronic lung disease, cancer, skin problems, safety, injuries and stress and psychiatric problems. Our initial focus is on lung problems, cancer and skin disease. Research in safety and stress is just beginning.

**Teaching** — We will succeed best if we are able to pass knowledge to others: doctors, nurses and other health professionals who in turn take leadership in assessing risks and effecting prevention. An important priority is to disseminate information to farmers and their families.

**Health Promotion** — We hope to work with other agencies to develop health promotion programs aimed at prevention of disease and disability.

**Service** — We can provide services in early diagnosis that are not now available in Saskatchewan, and in this way identify disease or disability at an early stage, before irreversible problems are present.

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## Our Activities

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### Organization

Organization has dominated our activities over the year. Offices for Mrs. R. Day (Executive Secretary) and Dr. James A. Dosman (Director) remain in the Section of Respiratory Medicine, Department of Medicine, on the 5th Floor of Ellis Hall. Our relationship with the Respiratory Medicine Section is special in that the respiratory research takes place in the Respiratory Section. An Environmental Epidemiology Unit has been established on the 3rd Floor of Ellis Hall with office space for Dr. H. McDuffie, cancer epidemiologist. Dr. Sandra Horne, respiratory geneticist, has her office in the area. Appropriate space for the Centre is a priority and discussions have been initiated with University Hospital.

A five year plan for the development of the Centre was approved by the Board of Directors on September 11, 1986, and involves accumulation of six academic personnel, in addition to the Director, Executive Secretary, and support staff, between 1986 and 1990. The plan involves possible participation by the University of Saskatchewan, the Saskatchewan Lung Association, the Saskatchewan Health Research Board,

the Government of Saskatchewan and other agencies. Negotiations aimed at attracting support have been initiated. Dean McDonald, Dr. R.M. Bala, and Mr. J.W. Churchman have participated in negotiations with the provincial government and the Saskatchewan Workers' Compensation Board. Estimates of space requirements have been undertaken and have been discussed in a preliminary manner with University Hospital, and with Assistant Dean for Research, Dr. Dennis Johnson. Mr. W. Podiluk, Deputy Minister of Health for Saskatchewan organized a meeting with senior officials of the Department of Health and Welfare in Ottawa, and Dean McDonald, Dr. Bala and Dr. Dosman have met or will be meeting with various federal officials.

### Research

Two articles have been published on lung trouble in farmers. These studies, supported by the Saskatchewan Lung Association, demonstrate that wheezing is present in 27% of farmers as compared to 9% of control subjects and that farmers have lower values than do control subjects for forced expired flow rates. In an extension of these studies, the Centre is planning a pilot project on hog farmers and the environment in cooperation with Dr. T. Hurst and Dr. D.W. Cockcroft of the Section of Respiratory Medicine, Department of Medicine, Dr. C. Rhodes of the Western College of Veterinary Medicine and Dr. E. Barber of the Department of Agricultural Engineering, College of Engineering. Dr. S. Horne continues her work on the genetics of airways obstruction in farmers, agricultural workers and in the general population.

The Lung Cancer and Farming Project, coordinated by Dr. H. McDuffie, with Drs. D.W. Cockcroft, D.J. Klaassen and J.A. Dosman has demonstrated that women develop lung cancer at a lower age and with less smoking exposure than do men, that farmers who develop lung cancer appear to have greater exposure to chemicals than do their nearest in age brothers, and that ¾ of lifetime nonsmoking men who develop lung cancer in Saskatchewan are farmers.

An analysis of dose-response relationships from grain workers across Canada has indicated a relationship between grain dust and lung function by job category in these workmen.

An interest in conducting an epidemiological survey of farm injuries and accidents in Saskatchewan is being pursued by Dr. V. Bowen, Department of Orthopedic Surgery, with the support of the Centre for Agricultural Medicine.

Dr. D. Hogan, Section of Dermatology, Department of Medicine, continues his

work on skin problems in farmers and was awarded the Canadian Dermatological Association Prize for his work.

Mrs. E. Gordon is carrying out a project on stress experienced by farm wives in the Swift Current area.

### Conferences

(1) *Symposium on Cancer and Farming* - October 1 and 2, 1986. In order to assess the importance of the relationship between the herbicide 2,4-D and lymphoma, the Centre hosted this Symposium which was sponsored by the Saskatchewan Cancer Foundation and attended by the members of the Centre's Cancer and Farming Advisory Committee. The Committee's recommendations on cancer have been published in the Canadian Medical Association Journal. The Committee has agreed to act in an advisory manner to the Centre concerning the plan for the Centre for Agricultural Medicine to coordinate a Canadian case-control study of agricultural chemicals and cancer.

(2) *Conference on Farm Accidents and Safety* - December 13, 1986. The Centre's Advisory Committee on Accidents and Safety adopted as its goals the coordination of research and a coordinated approach to health promotion in agriculture and its related industries, and agreed to act as an advisory committee to the Centre. Ms. M. Zasada, Saskatchewan Safety Council, and Ms. S. Leier, Wascana Institute of Technology, Regina, were added to the Committee.

(3) *Conference on Grain Dust and Health* - March 11, 1987. A conference to assess the effects of grain dust on human health was attended by Dr. M. Chan-Yeung, University of British Columbia; Dr. I. Broder, University of Toronto; Dr. G. doPico, University of Wisconsin, Madison, Wisconsin; Dr. K. O'Brien, Labour Canada, Ottawa, as well as Dr. H. McDuffie, Dr. S. Horne, Dr. D.J. Cotton, Dr. D.W. Cockcroft, Dr. D. Hogan and Dr. J.A. Dosman of the University of Saskatchewan. The purpose of the conference was to assess relationships between dust levels and lung dysfunction in grain workers, as part of the Centre's programme evaluation review of the health surveillance programme in the grain industry.

### Service

*Labour Canada Grain Dust Medical Surveillance Programme Statistical Contract*: The Centre for Agricultural Medicine competed successfully against other Canadian universities in obtaining this contract. This provides medical data from more than 7,000 workers across

Canada and provides an unique research opportunity for the Centre. Miss Debbie Hall is the data manager on this project.

**Labour Canada External Evaluation of Grain Dust Medical Surveillance Programme in Canada:** The purposes of this contract are to evaluate the effectiveness of the Programme in Canada and to make recommendations, including an appropriate maximum dust level in the grain industry. This contract, undertaken by Dr. Dosman and Dr. McDuffie, provides a challenge of significant proportions and an opportunity to influence the kind of health surveillance programme that takes place in the grain industry.

**Health Surveillance Programme in the Grain Industry:** The Centre has been negotiating with some of the elevator companies to provide an ongoing health surveillance programme for their workmen. In order to carry out this service, the Centre is investigating the possibility of establishing a health service organization (Health and Safety Services Inc.).

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## Publications

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### Papers

**Dosman JA, Bergstrom K, Clark K, Khaladkar S.** Peripheral airways function and nonspecific airways reactivity in cigarette smokers. *Chest* 89:45-48, 1986.

**Dosman JA, Cotton DJ, Merchant J, Graham BL, Cockcroft DW, Li KRY, Froh F, Barnett GD:** Pathogenesis of respiratory dysfunction in grain elevator workers and in farmers. *World Health Organization Bulletin* (in press).

**Horne SL, Tennent RK, Cockcroft DW, Cotton DJ, Dosman JA:** Pulmonary function in Pi M and MZ grainworkers. *Chest* 89:795-799, 1986.

**Hogan D, Dosman JA, Li KYR, Graham B, Johnson D, Walker R, Lane PR:** Questionnaire survey of pruritus and rash in grain elevator workers. *Contact Dermatitis* 14:170-175, 1986.

**Keshmiri M, Dosman JA:** Clinical use of pulmonary function tests in alveolitis and interstitial lung disease. *Internal Medicine for the Specialist* 146-152, April, 1986.

**Horne SL, Junk GJ, Cockcroft DW, Lovegrove A, Dosman JA.** PiMZ phenotype and an increased prevalence of reported psoriasis in a community survey. *Human Heredity* 36:266-268, 1986.

**Dosman JA, Graham BL, Hall D, Van Loon P, Bhasin P, Froh F.** Respiratory dysfunction in farmers versus nonfarming rural control subjects. *Can J Public Health* 77:136-139, 1986 (Supp).

**Dosman JA, Graham BL, Hall D, Van Loon P, Bhasin P, Froh F.** Respiratory symptoms and pulmonary function in farmers. *J Occup Med* 29:39-43, 1987.

**McDuffie H, Klaassen DJ, Dosman JA.** Female-male differences in patients with primary lung cancer. *Cancer* 59:1825-1830, 1987.

**Blair A, McDuffie HH, Dosman J.** Cancer in rural areas. *Can Med Assoc J* 136:924-925, 1987.

**McDuffie HH, Klaassen DJ, Cockcroft DW, Dosman JA.** Farming and exposure to chemicals in male lung cancer patients and their siblings. *J Occup Med*. (in press) 1987.

**McDuffie HH, Cockcroft DW, Talebi Z, Klaassen DJ, Dosman JA.** Lower prevalence of positive atopic skin tests in lung cancer patients. *Chest* (in press) 1987.

### Edited Book

**Dosman JA, Cockcroft DW (eds).** *Health and Safety in Agriculture*. CRC Press, Florida (in press) 1988. This will be an edited book encompassing the broader aspects of health and safety in agriculture, edited from documents provided for the International Symposium on Health and Safety in Agriculture, Saskatoon, October 8-11, 1985.

### Abstracts and Scientific Presentations

**Klaassen DJ, McDuffie HH, Cockcroft DW, Dosman JA.** Is lung cancer a sexist disease? *Clinical and Investigative Medicine* 9(3), 1986.

**McDuffie HH, Klaassen DJ, Cockcroft DW, Dosman JA.** Farming and exposure to chemicals in male lung cancer patients and their siblings. *Clinical and Investigative Medicine* 9(3), 1986.

**McDuffie HH, Klaassen DJ, Cockcroft DW, Dosman JA.** Pulmonary dysfunction and primary lung cancer. *Clinical and Investigative Medicine* 9(3), 1986.

**Dosman JA, Graham BL, Bhasin P, Hall D, Van Loon P, Froh F.** Pulmonary function and respiratory symptoms in farmers. *Clinical and Investigative Medicine* 9(3), 1986.

**Dosman JA, McDuffie HH, Klaassen DJ, Cockcroft DW.** Excess of the occupation of farming in lifetime nonsmoking lung cancer patients. *Clinical and Investigative Medicine* 9(3), 1986.

**Dosman JA, McDuffie HH, Cockcroft DW, Klaassen DJ.** Lower prevalence of positive atopic skin tests in lung cancer patients. *Clinical and Investigative Medicine* 9(3), 1986.

**Klaassen D, McDuffie HH, Dosman JA.** Is lung cancer a sexist disease? *Preventive Medicine* 15:703, 1986.

**Dosman JA, Graham BL, Van Loon P, Hall D, Pahwa P, Froh F.** Respiratory symptoms and alterations in pulmonary function tests in swine producers in Saskatchewan. *Am Rev Resp Dis Suppl* 135: April, 1987, A,453.

**McDuffie HH, Klaassen DJ, Dosman JA.** Evidence for familial but nongenetic association of primary lung cancer. *Am J Human Genetics* (accepted) 1987.

**McDuffie HH, Klaassen DJ, Dosman JA.** Comparison of demographic, smoking, occupational and medical variables between male and female patients with primary lung cancer. *Am Rev Resp Dis Suppl* 135: April, 1987, A446.

**McDuffie HH.** Respiratory health of Canadian grain workers, 1981-1984. Presented at the Minisymposium on the Evaluation of Labour Canada's Medical Surveillance Program of Grain Workers, March, 1987.

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## Training

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(1) Dr. H. McDuffie continued as Post-doctoral Fellow until January 31, 1987, at which time she became a Research Associate.

(2) P. Pahwa (Ph.D. Student) - Student Assistantship in Biostatistics.

(3) Mrs. E. Gordon is taking her Master's Degree in Continuing Education studying Rural Stress through the Department of Communications, Continuing and Vocational Education in association with the Department of Psychiatry and with the assistance of the Centre for Agricultural Medicine.

(4) Summer Students: S. Senyshyn (Med III) worked on the Lung Cancer and Farming Project. J. Murphy (Pre-Med II) worked on the Lung Cancer and Farming Project.

(5) Dr. M. Luczewicz, Research Fellow, worked on the Grain Dust Project.

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## Presentations and Speeches

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### Presentations by Dr. Dosman:

March 13, 1986 - Saskatchewan Association of Rural Municipalities, Regina: "Health and Safety Problems in Agriculture and Related Industries".

April 16, 1986 - Section of Respiratory Medicine, Department of Medicine, University of Iowa, Iowa City - "Airways Reactivity in the Identification of Occupational Disease".

April 16, 1986 - Department of Preventive Medicine and Environmental Health, University of Iowa, Iowa City - "Epidemiological Principles in the Identification of an Occupational Health Hazard".

October 21, 1986 - Saskatchewan Hospital Association, Saskatoon - "Health and Safety Risks in Agriculture and Associated Industries".

October 21, 1986 - Saskatchewan Hospital Association Women's Auxiliary, Saskatoon - "Coping with Health Risks for the Farm Family".

October 30, 1986 - Section of Respiratory Medicine, University of Nebraska, Omaha, Nebraska - "Airways Reactivity and the Treatment of Asthma".

October 31, 1986 - Department of Medicine, University of Nebraska, Omaha, Nebraska - "Epidemiological Principles in the Identification of an Occupational Health Hazard".

November 6, 1986 - Department of Social and Preventive Medicine, University of Saskatchewan - "Epidemiological Principles in the Identification of an Occupational Health Hazard".

November 20, 1986 - Mexibition, Saskatoon - "Health and Safety Risks in Agriculture".

November 25, 1986 - Expert Committee on Weeds, Western Canada Section, Saskatoon - "Health Risks from Chemicals in Farmers".

December 3, 1986 - Continuing Medical Education, Nipawin Hospital - Lecture to Physicians - "The Diagnosis and Treatment of Asthma".

December 3, 1986 - Continuing Medical Education, Nipawin Hospital, Staff Nurses - "Treatment and Oxygen Administration in Chronic Obstructive Lung Disease".

January 23, 1987 - Continuing Medical Education, Regina - Respiratory Diseases '87 - "Occupational Lung Disease on the Prairies".

March 12, 1987 - Continuing Medical Education, Staff Physicians, Yorkton Union Hospital - "Diagnosis and Treatment of Occupational Lung Disease".

March 12, 1987 - Continuing Medical Education, Yorkton Union Hospital, Staff Nurses - The Nurse's Role in the Identification and Treatment of Occupational Lung Disease".

March 12, 1987 - Yorkton Rotary Club - "Health and Safety Risks in Agriculture: The role of the Average Person".

March 25, 1987 - Birch Hills Union Hospital, Public Meeting - "The Community Hospital and Health and Safety Problems in Agriculture".

March 26, 1987 - Rosthern Annual Municipal Meeting - "The Role of the Municipality in Health and Safety Risks in Agriculture".

March 27, 1987 - Department of Sociology, University of Saskatchewan, Conference on the Political Economy of Agriculture in Western Canada - "Economic and Social Aspects of Health and Safety Risks in Agriculture".

March 31, 1987 - Turtleford Annual Municipal Meeting - "Health and Safety Risks in Agriculture: How They Affect the Farm Family".

### Presentations by Dr. McDuffie:

**The Clean Air Experience:** Dr. McDuffie consulted with Mr. Dick Epp and Ms. Regine Haensel in the preparation of a slide-tape presentation produced for the Saskatoon Public School Board which is banning all smoking in its schools as of August 1, 1987. The slide-tape presentation is part of an educational effort which will be shown to all teachers, staff and students, and to interested parents.

### Radio, Television and Press:

Dr. J.A. Dosman, Dr. H. McDuffie and Dr. V. Bowen appeared on several programmes and in newspaper articles on respiratory, cancer, and safety risks.

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