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**OCCUPATIONAL AND INDUSTRIAL
HISTORY OBTAINED FROM
PATIENTS IN EC COUNTRIES**

A pilot study in the Netherlands

**Paper presented at the CEE Workshop
"Methodology of assessment of occupational
exposures to carcinogens in the context of
epidemiological detection of cancer risks",
Paris, 1988**

**TNO INSTITUTE OF PREVENTIVE HEALTH CARE
DEPARTMENT OF EPIDEMIOLOGY AND OCCUPATIONAL HEALTH CARE**

NPG-TNO

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INTRODUCTION

Research in occupational cancer focusses on

- development of methodology to assess
occupational exposure
- establishing conditions for case-control
monitoring studies

METHODOLOGY
FOR EXPOSURE ASSESSMENT:
STRATEGY

1. Collection of data on current job and job history
 - availability of data on occupation
 - development of a questionnaire
 - feasibility of data collection by questionnaire
 - discussion: validity and reliability

2. Job Exposure Matrix: 'translation'
 - of jobs into exposures
 - adaptation of the axes (occupation and exposure classification) for use in the Netherlands
 - compatibility of the questionnaire and the Job Exposure Matrix

AVAILABILITY OF DATA ON OCCUPATION IN THE NETHERLANDS

Cancer patients: Cancer registry, according to
minimal recommendations of WHO/IARC
– data on occupation not collected by all
Registries

Cancer deaths: death certificates
– occupation is not filled out

General population: data of random sample
collected by National Bureau of Statistics
(bi-annually)

- classification:
 - International Standard Classification of Occupations
 - Standard Industrial Classification

PILOT STUDY

EC WORKING PARTY

Primary goals

- collaboration of 8 EC countries
- improvement of standardisation between countries, concerning collection of data on occupational history and disease of cancer patients in EC countries
- establishment of a system to identify and monitor occupational hazards

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PILOT STUDY

PLANNING OF THE EC STUDY

Phase I:

Development of a questionnaire to record
occupational history

Phase II:

Exploring possibilities and potential difficulties
of undertaking cancer studies in different EC
member countries

Phase III:

Implementation of questionnaires and
case-control method to identify and monitor
occupational hazards

Data collection in phase I was completed in 1987

PILOT STUDY

OBJECTIVES OF PHASE I:

Determination of:

- the acceptability of the questionnaire and the rate of useful information obtained by the questionnaire
- the validity of coded job histories by comparing 2-digit versus 4-digit coding
- the observer repeatability of coding practices (2-digit coding)
- within-person variability (questionnaires were administered twice)
- the most reliable method of data collection (administered versus self-administered questionnaire)

PILOT STUDY

STUDY DESIGN OF PHASE I:

- 8 pilot studies: one in each country
- study population:
 - o 72 patients, 2 interviews per patient
 - o males, 25-65 years
- random allocation over 3 interview schedules
within each disease group:

	lung	bladder	GI	hemat	total
self adm - self adm	12	4	4	4	24
self adm - adm	12	4	4	4	24
adm - adm	12	4	4	4	24
total	36	12	12	12	72

- independent recoding of a 50%
systematic sample of first interviews

PILOT STUDY

FEASIBILITY OF DATA COLLECTION

IN CANCER PATIENTS: SOME ASPECTS

Access to cancer patients:

- collaboration with Cancer Registries, hospitals, physicians is necessary to interview patients
- many patients are treated in
outpatient departments

Patients consent:

- a waiting period between providing the study information and the patients consent is required

Interview conditions:

- interview conditions may vary because of the
for mentioned factors

Preliminary results:

- administered vs self administered

PILOT STUDY

VALIDITY AND RELIABILITY OF REPORTED JOB HISTORY: DISCUSSION

1. Determination of the reference:
actual exposure, employers records, pension
records, or insurance records?
(EC study: validity of coding)
2. Persons providing the information:
patient, spouse, next of kin, employer,
occ. health service
(EC study: information provided by patients)
3. Standardisation of the method of data
collection:
telephone interview, oral questionnaire,
self administered questionnaire (EC study:
self-administered versus administered)
4. Accuracy of job description

FUTURE ACTIVITIES

1. Further development of a job history

questionnaire:

- assessment of validity in a population
of healthy employees

2. Further development and adaptation of Job

Exposure Matrix for use in the Netherlands:

- classification of job and exposure axes
- validation

3. Establishment of a case-control

monitoring system:

- collection of data on the study base
- follow-up of the study base
- periodic outcome evaluation

Working Party on "Testing of a questionnaire to obtain occupational and industrial history from hospital patients"

COMMISSION OF THE EUROPEAN COMMUNITIES

Directorate-Generale Employment, Social Affairs and Education
Health and Safety Directorate

Investigators

England and Wales	W.W. Holland, R. Rona, C. Thornton, M. Farebrother
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Denmark	R.J. Mosbech (Chairman), H. Mosbech
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TNO Institute of
Preventive Health Care

Netherlands organization
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General

The TNO Institute of Preventive Health Care (NIPG-TNO) carries out research and makes recommendations for the prevention of illness and the promotion of the health of man in various situations of life.

The Institute employs about 150 persons working on various research programmes and in supporting departments. Man in his work situation has invariably been an important field of the Institute's activities. These past few decades this industrial medical research area has expanded into a multidisciplinary field of work, in which numerous aspects of the work-health relationship are investigated.

A large number of projects on research or advice are carried out for industry (employers and workers), the government and organizations in the sphere of occupational health care. Being an Institute of TNO, the Netherlands Organization for Applied Scientific Research, the NIPG is characterized by an independent position regarding the parties concerned and is open for questions arising from society as a whole.

Specialization and cooperation

A characteristic feature of the broad field of research into conditions at work is the specialized expertise required in numerous parts of the field. This makes it almost impossible for a single institute to perform valid research and to provide solutions for all problem areas. For this reason the NIPG-TNO specializes in some parts of the field and in addition collaborates with other TNO Institutes where expertise is available in other areas. This makes it possible for TNO to handle almost any problem associated with conditions at work. Collaboration between the TNO Institutes is coordinated by the TNO Humanization of Work Bureau, which is accommodated on the premises of the Institute.

What kind of research is being done?

Over 30 researchers and research technicians are active in the field of Man and Work. They are experts in the sphere of occupational and industrial health care, epidemiology, occupational hygiene, ergonomics and the social sciences. This enables work problems to be tackled along multidisciplinary and integral lines. Topics of research are:

- integral analysis of work situations, organizations and branches of industry to detect objectionable conditions at work, related health problems and possibilities of improvement;
- noise, hearing impairment and noise annoyance;
- physical work load, health problems of the locomotory system;
- mental and psycho-social work load, stress;
- automation and work;
- industrial accidents and occupational diseases;
- sickness absenteeism and disablement;

- work and handicap;
- functioning and quality of industrial health care;
- post-graduate training of occupational physicians.

In close consultation with the government and other relevant organizations a multi-year research programme is carried out in the above areas. In addition, the Institute carries out contract research and is involved in consultancy activities.

A more detailed description of the subjects indicated above follows below. Further documentation is available on request.

Analysis of work situations

The NIPG-TNO analyses work situations, departments, organizations and branches of industry to detect objectionable conditions at work, associated health problems as well as possibilities of making improvements to eliminate any problems encountered.

Work and conditions at work are mapped out by means of observations and quantitative measurements. For judgement of these data use is made of statutory standards and current guidelines applied in practice. For each problem possibilities of eliminating the objectionable situation are considered. In order to gain insight into the problems and health problems experienced by the workers use can be made of the Questionnaire: "Personal Functioning in the Work Situation", developed by the Institute. The Institute has at its disposal a collective file containing data of 8,000 workers from various organizations. Reference values can be derived from this file to enable comparison with data from new investigations.

Noise, hearing impairment and noise annoyance

More than one-third of the workers in Dutch industry is exposed on the work site to noise capable of causing hearing impairment. Reference guides are available at the NIPG-TNO with respect to all aspects of the following hearing conservation programmes:

- information about the effects of exposure to noise on hearing and about the prevention of noise-induced hearing loss;
- instruction for noise measurements on the work site;
- guidelines for noise abatement in industrial noisy situations;
- instructions for audiometry;
- guidelines for the use of personal protection devices.

These guides assist industries and industrial health services in carrying out hearing conservation programmes. If desired, the Institute advises and assists in carrying out these programmes. For example, an "audiomobile" is available for this purpose, in which audiometric

tests are performed. The Institute also recommends industries and health centres to set up a computer system for registration and processing of audiometric data.

Physical work load, occupation-related complaints of the locomotory system

Health complaints concerning the locomotory system can relate to the back, the neck, the shoulders, the elbows and/or the wrists. Causes deriving from the work are often: heavy lifting, working in bent-over position for some length of time and/or working with the arms raised above the shoulders.

In the case of sickness absenteeism and disablement, complaints of the locomotory system belong to the most frequently occurring diagnostic category (before mental complaints, accidents and occupational diseases).

The NIPG-TNO directs its efforts to:

- epidemiological research with respect to factors causing the complaints;
- ergonomic research to reduce the work load;
- development of programmes for information and training regarding the prevention of complaints;
- developing methods for "early diagnosis" with a view to detect damage to health in an early stage.

Mental work load, stress

With the aid of questionnaires the Institute carries out investigations in industrial situations to establish the occurrence of stress and its consequences for the workers.

In addition, methods are developed to measure stress on the basis of physiological reactions (heart-beat, blood pressure, respiration, hormonal reactions). The purpose is to develop a properly manageable measuring instrument enabling the detection of imminent or existing health damage in workers; furthermore, to offer assistance in the detection of risk factors in the work situation, and in the identification of particularly vulnerable groups within the working populations.

Automation and work

New technologies are being introduced in work situations to a growing extent. The Institute examines the effects of automation and to this end studies applications in the process industry, in offices and in serial production and assembly work. At the same time attention is given to the designing process of automation, as well as to decision-making concerned with the introduction of automation within organizations and its introduction to personnel. The basic principle to be observed here is that technological and social innovation should go hand in hand. The Institute has developed a model for the use of this approach. Research and consultancy in this sphere are performed on behalf of both management and works councils.

Industrial accidents and occupational diseases

According to diagnostic data with respect to sickness absenteeism and disablement in the Netherlands, industrial accidents and occupational diseases are the third cause in order of importance (after complaints of the locomotory system and mental complaints).

Despite this there is still a lot to be learned about the exact occurrence in a quantitative sense, about the causes of industrial accidents and occupational diseases and about their conditions.

The Institute performs research in this field in support of government policy and the social partners and in connection with preventive measures to be taken by occupational health physicians.

This concerns epidemiological research, partly on the basis of data from existing national registration systems and partly on the basis of data gathered by the Institute.

Research more directly aimed at prevention takes place on the basis of risk perception and safety behaviour of workers, such with a view to improving task structures and guidance of the workers.

Sickness absenteeism and disablement

As regards absenteeism and disablement the Institute has a research tradition going back for many years. A large number of books and articles on this subject has been published by members of the Institute's staff. In addition, the Institute has on different occasions acted as a consultant for management and works councils of industrial concerns and other organizations with regard to ways of reducing avoidable absenteeism.

Another feature deserving attention is the Institute's sickness absenteeism registration system, available since 1946, in which now some 230 industrial and non-industrial organizations from different branches take part (covering about 240,000 workers).

Recommendations are made to organizations with respect to the set-up and use of sickness-absenteeism registration systems.

Work and handicap

In consultation with the government a research programme was recently started with the aim to improve the (re)-integration possibilities of the handicapped in the work process. The principal research questions to be answered in the programme are:

- What is the effect of the introduction of new technologies on the participation in the work process of people with an illness or a handicap?
- How can this effect be influenced with the aid of work-site adjustments, more especially by making use of new technologies?

Functioning and quality of industrial health care

The Institute develops research instruments

concerning work and health, which are used by occupational physicians within the scope of the periodical occupational health examination of workers. Examples are questionnaires concerning conditions at work, and health, as well as methods for early diagnosis of damage to the locomotory system.

Other research is concerned with mapping out the organization and contents of occupational health care itself, desiderata and problems in task performance.

The purpose of this research is to answer the question: what factors in industrial health care lead to effective care and what are the impediments?

Training occupational physicians

The Institute is not just concerned with research, but also engages in training.

For a number of decades it has given training courses in social medicine. One of these courses is intended for physicians who are working in occupational health practice. It lasts just over two-and-a-half years and leads to entry in the register of consulting physicians as social medical officer in the occupational health branch.

Every fortnight trainees attend two-day sessions consisting of lectures and training seminars. In addition, the trainees are required to prepare three papers based on investigations in the occupational practice. Lastly, they spend a period of three months on practical work in a designated Industrial Medical Department.

Publications

The TNO Institute of Preventive Health Care issues a large number of research reports, articles and more general publications. Except for confidential reports to principals these publications are available from the Institute on request. A list of recent publications is contained in the Annual Report of the Institute.

Persons who can be contacted

The following is a list of persons at the TNO Institute of Preventive Health Care who can be approached directly with regard to the subjects stated.

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