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AN INDEPENDENT
NURSE PRACTITIONER
IN OCCUPATIONAL
HEALTH:

is it feasible
for New Zealand?

AN INDEPENDENT
NURSE PRACTITIONER
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A report presented in partial fulfilment of
the requirements for the degree of
Master of Arts in Nursing Studies at
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ABSTRACT

This report is concerned with the practice of one independent nurse practitioner in occupational health. The literature relating to occupational health is examined together with that focussing primarily on occupational health nursing and independent nurse practitioners. The health needs of small enterprises are also highlighted.

The main section of the report sets out an account of a seven month pilot project which investigates the feasibility of providing an occupational health service to small industries in the Palmerston North area.

In phase one (assessment), 81 employees were interviewed within three industries. Lifestyle questions and questions regarding their occupations were asked to determine health education needs. A factory profile was also completed on each industry to determine hazardous areas. The data collected helped in the construction of the health programmes for the year (phase two, planning).

In phase three (implementation) lectures were given, videotapes shown and guest speakers were invited to disseminate health information.

The occupational health programmes were evaluated in phase four, using questionnaires as tools. The conclusions showed that the programmes were evaluated as worthwhile in two out of three companies and employees in these companies stated that they would like the occupational health service extended.

A model for the development of independent practice by nurses in occupational health is presented in phase five. The report ends with a summary of the requirements for a successful practice. That is the nurse must construct a business plan, engage an accountant and have realistic expectations in relation to outcomes.

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DEFINITIONS

- ACCOUNTABILITY The state of being responsible for one's own actions and conduct. (Webster, 1963)
- ALLOPATHIC MEDICINE That discipline of medical care advocating therapy with remedies that produce effects differing from those of the disease being treated. It is usually called "modern" or "Western" medicine. (Canary, 1983)
- AUTONOMY The quality or state of responding, reacting or developing independently of the whole. It is the right to self-government and self-regulation, a requirement for professionalism. It involves independent thought and action in accordance with Government and laws without professional interference. (Hawken & Tolladay, 1985)
- CASE STUDY A detailed, factual, largely narrative description and analysis of an existing system. (Wenn, 1983)
- COST-EFFECTIVENESS A technique for evaluating the relative costs of alternative programmes for achieving the same goal. The alternative that produces the greatest net benefit. Net

implies benefits minus costs. Costs can be thought of as negative benefits. Benefit implies that if calculations show zero net benefit, no action should be taken. Do not adapt the project or service. (Veney & Kaluzny, 1984)

HOMOEOPATHY

The system of treatment employing minute amounts of remedies that in massive doses produce results similar to those of the disease being treated. (Canary, 1983)

INDEPENDENT NURSE PRACTITIONER

A nurse who has departed from the traditional role of the nurse within the health care delivery system and has developed private practice. The main focus of these nurses is on health maintenance through primary health care that is peripheral to the traditional illness-focused system. These nurses provide services in their offices and in clients' homes for the purpose of health assessment, counselling, teaching and making referrals to other health professionals and agencies. The boundaries of the independent nurse practitioner's role are determined by state nurse-practice acts, (in the U.S.A.). (Brunner & Studdarth, 1984)

- INTERNATIONAL FIVE STAR RATING SYSTEM: A practical approach to evaluating and establishing an effective occupational health and safety programme. (Accident Compensation Corporation, 1987)
- NATUROPATHY All of the forms of non-allopathic medicine which depend on "natural" remedies and treatments, such as herbs. (Bloomfield, 1983)
- NETWORKING An interrelated chain, group, or system. (Webster, 1963)
- NURSE Assists the individual, sick or well, in the performance of those activities contributing to health or its recovery (or to peaceful death) that he/she would perform unaided if he/she had the necessary strength, will or knowledge. And to do this in such a way as to help him/her gain independence as quickly as possible. (Henderson, 1966)
- NURSE ENTREPRENEUR A nurse who organises, manages and assumes the risks of a business or enterprise. (Webster, 1964)
- NURSE PRACTITIONER A nurse who has advanced skills in history taking and physical examination, which are

utilized to assess the physical and psychosocial health and illness needs of individuals, families or groups. These nurses have expertise in nursing practice and utilize a broad range of competencies to plan and implement direct and indirect nursing care with consideration for coordination of care with other health professionals. (Brunner & Suddarth, 1984)

PREFERRED PROVIDER
ORGANISATION (PPO)

A hybrid of the fee-for-service and prospective payment systems. The provider is generally paid on a fee-for-service basis. Preferred provider means that the provider has a contract with a purchaser to deliver services at an agreed-upon, usually discounted price. This helps the purchaser control costs and at the same time, secures a portion of the market for the provider. (Griffith, 1985)

PRIMARY HEALTH
CARE

A practical approach to making essential health care universally acceptable to individuals and families in the community in an acceptable and affordable way and with their full participation. (Salmon, 1981)

OCCUPATIONAL
HEALTH

The promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations; the prevention among workers of departures from health caused by their working conditions; the protection of workers in their employment from risks resulting from factors adverse to health; the placing and maintenance of the worker in an occupational environment adapted to his/her physiological and psychological equipment, and the adaptation of work to man and of each man to his job. (World Health Organization, 1950)

OCCUPATIONAL HEALTH
NURSE

A registered general nurse who specialises in the care of people at work. She/he is concerned with hazards in the workplace and 'at risk' groups. She/he is a resource person and counsellor and advises management on current factory rules and regulations. She/he is a health teacher and makes referrals as necessary regarding a client's physical and mental well-being. At times the family will also be included in the care.

OCCUPATIONAL HEALTH SERVICE A service established in or near a place of employment for the purposes of:

... protecting the workers against any health hazard which may arise out of their work or the conditions in which it is carried on

... contributing towards the workers' physical and mental adjustment, in particular by the adaptation of the work to the workers and their assignment to jobs for which they are suited

... contributing to the establishment and maintenance of the highest possible degree of physical and mental well-being of the workers. (International Labour Organisation, 1959)

OCCUPATIONAL HYGIENE

Scientific discipline concerned with the recognition, measurement, assessment and control of the factors in the working environment which may effect the health of those who work there. (Stokes, 1983)

OCCUPATIONAL MEDICINE

The discipline concerned with the diagnosis, treatment and prevention of the ill effects of work on the health of people. Practiced by nurses and doctors (Stokes, 1983)

THIRD PARTY
REIMBURSEMENT

That repayment given to the health care provider by a private insurance company or a state run health plan such as Accident Compensation Corporation. Or that reimbursement given to the consumer from the insurance company after he/she has paid the medical bill.

CHAPTER 1

A PREAMBLE

The purpose of this project has been to investigate the feasibility of providing an occupational health service to small manufacturing companies in the Terrace End area of Palmerston North, New Zealand. The service was delivered by a registered general nurse with a Bachelor of Arts Degree and Certificate in Occupational Health who was in private practice. This report covers a seven month period, from April to November, 1987.

Objectives

- . to examine the literature on health in the work place
- . to review the role of the occupational health nurse in relation to the health care of employees in small businesses
- . to set-up and monitor an occupational health service for employees in small businesses located in Palmerston North
- . to describe and analyse the seven month field project.

A Discussion of the Problem

According to Glass (1985) health services for workers in both medium sized factories and small factories (under 50 employees)

are quite inadequate in New Zealand. In these smaller businesses, where reliance on occupational health nurses and doctors is not practical because of lack of resources, expertise, and time, there is, as yet, no coherent policy on the provision of occupational health services.

Devlin (1987) reports that ninety two percent of New Zealand firms employ less than twenty people. Small firms employ fifty five percent of the private sector workforce.

Taking into account the inadequacy of health services to small industries, there is a large percent of the working population who may be at risk in their place of employment. Glass (1987) sets out features of small workplaces which impose vulnerability on those employed:

- . undercapitalised
- . inferior environmental conditions
- . greater chemical exposure
- . unlabelled and cheaper raw materials
- . higher injury rate
- . inferior inspection
- . inferior or no occupational health services
- . under-unionised/lower pay rates
- . longer working hours
- . award conditions ignored.

(p.17)

This vulnerability could lead to a higher incidence of occupational diseases and accidents. Glass (1987) emphasises that the urgent task for occupational health in New Zealand is to focus on the health needs and working conditions of workers in small workplaces and to establish ways and means to improve these working conditions and satisfy their health needs.

But in some small factories, not all of these conditions apply. Subsidiaries of larger firms are not usually undercapitalised. They do not have inferior environmental conditions, nor are they underunionised, with longer working hours and other evidence of non-compliance with award conditions. The author knows several privately owned businesses which do not have higher injury rates and do not ignore award conditions. Nevertheless, one must agree with Glass (1987) that the urgent task for occupational health in New Zealand is to focus on the health needs and working conditions of employees in small businesses where they do not have access to occupational health services to provide health screening and monitor safety conditions.

Glass (1987) suggests that there are currently many changes in the New Zealand economy. It has been labelled a "deregulated economy with a floating dollar" and recently a number of government departments have been converted into corporations. Money is flowing away from traditional productive enterprises based on farming, forestry and manufacturing into those of tourism, service industries, bureaucracy and institutions

involved with exploiting the "floating dollar".

Glass also explains that the standard of living of the lower socio-economic group is falling as wages fall behind prices. New Zealand companies are transferring manufacturing operations out of the country to "third world" areas where labour costs are much cheaper. Then the manufactured product is imported back into New Zealand and sold.

As a result of the above, Glass points out, resources allocated for occupational health are being looked at much more critically than in the past. Cost-efficiency must be provided along with health effectiveness.

In 1984, there were 302 full and part-time occupational health nurses employed by the Health Department and private enterprises in New Zealand to cover 315 factories and 177,396 employees, (Public Health Report, 1984). At that time there were 24,139 factories in New Zealand employing 363,228 workers, according to the Department of Labour Report (1984). That left a total of 23,824 factories and 183,832 employees that were not covered by any occupational health service. That was a large portion of the population. It can be surmised that the situation has worsened today since there have been budget cuts in health spending and a generally worsening economic climate.

From discussions with public health nurses in the Palmerston

North area, it seems there are too few nurses for the number of industries which must be covered. They do not always have time to visit the numerous smaller businesses. When the nurses do visit, it is mainly to organise lead level tests or other required testing, to take blood pressures and to do some health teaching. It would be impossible for these nurses to initiate a fully comprehensive health programme in the way that this report suggests.

According to recent studies (Chick, Page, Perry, Rodgers, 1986) and Nursing Workforce Planning Committee, (1985) there is also a shortage of nurses generally in New Zealand, mainly because of working conditions.

The nurse in private practice in occupational health would be an alternative way to bring nurses back into the workforce, caring for the working population and focussing on prevention before hospitalisation is necessary. Nurses may be lured back to work with the prospects of more scope for creativity as independent practitioners and more flexible working hours. As the independent practitioner became established, he/she could hire nurses to work for him/her, thus increasing the nurse workforce in New Zealand. The application of primary care in the workplace should result in a better level of health for a large proportion of the New Zealand population.

Movement Toward Occupational Health

The time appears ripe for a coordinated effort toward improving

occupational health services with the independent nurse practitioner in the foreground. Recent trends and current issues in occupational health demonstrate a move in this direction. The position of unions has changed regarding occupational health. They are following the actions of their counterparts in Australia and are approaching employers regarding safety issues.

Recommendations expressed in the FOL/CSU Report, 1985 regarding the trade union movement emphasized the primary role of the movement in the development of health and safety lies in the training of union representatives in health and safety. This has now come about as practice. The report also recommended that a national basic training curriculum in occupational safety and health be established and implemented by the Trade Union movement for the training of delegates, organisers and officials. Paid leave was recommended for union representatives receiving health and safety training. These recommendations are in force today.

Another sign of occupational health being acknowledged as important is the development of the Advisory Council for Occupational Safety and Health (ACOSH) established in 1986. ACOSH has made public "The Organisation of Occupational Safety and Health Administration in New Zealand, 1986". After much discussion and debate between the Employers' Federation representatives and the Federation of Labour/Combined State Union representatives who are on the Advisory Council, a "Code of Practice for Health and Safety Representatives and Health and

Safety Committees" has been developed to guide employers in the setting up of a safety management programme. This is following the recommendation of the FOL/CSU Report, 1985 concerning worker's participation in health and safety operating through health and safety committees where they exist and the establishment of these committees in all large workplaces.

Accident Compensation Corporation (ACC) is assessing management systems in businesses for their safety procedures and entire philosophy on health and safety. They are using the Five Star International Safety Rating System and pass or fail the companies assessed, according to a points system. If no system exists or the present one is inadequate, ACC will recommend the implementation of the aforementioned "Code of Practice".

The fact that the Employers' Federation is currently holding educational seminars regarding health and safety, again emphasises that the spotlight is on occupational health. The Employers' Federation is asking employers to take the initiative for the health and safety of their workers. This will create a positive environment for the independent nurse practitioner who approaches employers to market her/his services. The seminars, when attended by the nurse, are also excellent opportunities to meet employers, discuss the nurse's role in occupational health and possibly increase her/his clientele.

Last year (1986), a council was set up within the Department of Labour to deal with occupational safety, health and welfare

issues. Matters under action and for future action can be found in Appendix 1. It can be concluded from the issues stated that the government is now taking a much more active role in worker safety and health issues. From this may evolve regulations making it mandatory for employers to provide health care for their employees. This, again, is where the independent nurse practitioner can contribute by contracting his/her services to the employers of small businesses who employ a high proportion (92%) of workers.

The aforementioned issues indicate a movement toward a more comprehensive safety and health plan for New Zealand. They illustrate that now is the time for occupational health nurses to become actively involved in influencing employers to set up a health and safety programme of their own before they are forced to by law. If a programme is set up in a planned, cohesive way, plenty of time in advance, it is more likely to perform in an orderly and systematic way to achieve the objectives of everyone concerned.

SUMMARY

This chapter has set out the purpose of the field study which was to investigate the feasibility of providing an occupational health service to small manufacturing companies. Small enterprises, which employ fifty five percent of the private sector workforce have inadequate health services. Since there is a shortage of public health nurses available to visit small enterprises, nurses in independent practice is a feasible solution for the health care.

Recent trends and current issues in New Zealand demonstrate a move toward increased interest in occupational health. These trends are as follows:

- . Trade Union movement toward training of union representatives in health and safety
- . the development of the Advisory Council for Occupational Health and Safety (ACOSH) which set up a "Code of Practice" for safety committees and representatives
- . the assessment by A.C.C. of safety management systems in businesses
- . seminars on occupational safety and health sponsored by the Employers' Federation
- . a council set up within the D.O.L. to

deal with occupational safety, health
and welfare issues.

With the increased interest in occupational health, occupational health nurses have the opportunity to become actively involved in the setting up of new programmes directed toward improved health for workers.

CHAPTER 2

OCCUPATIONAL HEALTH

In this chapter the historical background of occupational health and safety is reviewed. Relevant legislation in Great Britain, the United States and New Zealand is discussed, and policy recommendations related to the issue are set out.

Historical Background

According to Hall-Patch (1985), occupational health was not unknown during Egyptian times when slave labourers were made to wear cloths over their faces to protect them from dust inhalation while working on the pyramids. In the 15th Century the relationship of work and disease causation was linked by Agricola and Paracelcus, who treated miners and lead workers in the Austrian Alps.

During the 16th Century, Hall-Patch points out, Ramazini urged all physicians when taking a history, to ask their patients, "What is your job?" Ramazini has been called the Father of Occupational Medicine. Later in England, Percival Potts, Charles Thackrah, John Arlidge and others, were doing their now historical work for chimney sweeps, miners and pottery workers.

As noted by Derricott (1981), Great Britain was the first of the industrialised countries to enact laws to protect people at their place of employment in the 19th Century. But the legislation seemed to reflect piecemeal reaction to unrelated needs and was

complex and sometimes conflicting in intent. Numerous acts involving different inspectorates with different standards led to confusion, irritation and duplication. The Roben's Committee on Safety and Health at work (1972), made important proposals concerning occupational health and safety management for the future. It suggested that local authorities ought to be more directly involved and that health and safety legislation should be radically reformed.

Against the background of the Roben's Report, the Health and Safety at Work Act, (1974) came into effect to protect people at work from risks in their environment.

Hardesty (1981) notes that in the United States of America, the history of occupational health within the Department of Health, Education and Welfare (HEW) pre-dates the First World War when the Office of Industrial Hygiene and Sanitation was established in the Public Health Service.

Worick (1975) observes that at this time, groups from industries were expressing an interest in industrial safety. As a result, the National Council for Industrial Safety was formed in 1913. The name was changed in 1915 to National Safety Council. This organisation has led all of the U.S.A.'s major efforts in safety.

A specific legal authority for occupational health and safety did

not occur until 1969 with the enactment of the Federal Coal Mine Health and Safety Act, explains Hardesty (1981). This legislation directed the Secretary of HEW to develop and set and the Secretary of the Interior to enforce, improved health standards to protect the health of the Nation's coalminers. This responsibility for standards development within the Department of Health, Education and Welfare, was delegated to the National Institute for Occupational Safety and Health (NIOSH). NIOSH also has general research authorities under the Public Health Service Act.

It is the Occupational Safety and Health Act (OSHA) of 1970 which gives NIOSH its principle authorities, (Hardesty, 1981). This act charges the Department of Labour (DOL) and the Department of Health, Education and Welfare (HEW) with the objective of assuring safe and healthful working conditions for working men and women. The duties of the Secretary of HEW are delegated by the Act to NIOSH and the Secretary of Labour's duties delegated by OSHA. The separation of these duties into two departments protects the integrity of research in support of standard setting.

Glass (1974) notes that New Zealand has lagged behind other Western countries in becoming aware, in an organised way, of health hazards resulting from the work environment. This was largely due to the late upsurge in its industrial development.

The Federation of Labour/Combined State Unions Report (1986),

found that occupational health and safety legislation in New Zealand is unwieldy. Provisions dealing with health and safety at work are found in 26 different major acts as well as in over 40 sets of regulations. There are at least four government departments which administer various parts of this legislation. As a consequence there is confusion, overlap, lack of co-ordination, lack of accountability and lack of enforcement.

In the 19th Century in New Zealand, Glass explains, large numbers of women were employed in the clothing industry. One of the first Acts concerned with regulating the relationship between the worker and the industrial environment concerned women workers. On October 2, 1873, an Act known as the Employment of Females' Act was placed on the Statute books. This legislation was concerned with the limitation of the hours of work for women and included a clause requiring every workroom to be properly ventilated. The Act never functioned in practice, therefore, a commission was appointed, called the Sweating Commission of 1890, to enquire into the situation.

Arising from the Commission, Glass (1974) notes, was the recommendation that a Factory Act be passed providing for the registration of factories, subject to the provision of suitable sanitation and ventilation and that a minimum of fourteen years of age be required for factory workers. In 1891, the Department of Labour came into being to administer this legislation. Over the years, the Factories' Act and Shops' and Offices' Act have

been amended and regulations under these Acts have come into force.

Dr T.O. Garland was appointed New Zealand's first Industrial Hygienist in 1947. He became Director of the Division for Occupational Health and played an important role in developing this aspect of Public Health in New Zealand.

Glass (1974) found that one of the difficulties in New Zealand was providing medical and nursing services for the many small factories. Dr Garland suggested the establishment of industrial health centres in the more densely industrialised regions of the larger cities. In 1948, a water-front clinic was opened in Wellington. In 1951, the first industrial health centre was established in part of Dunlop's factory in Christchurch where a nurse working under the District Industrial Medical Officer carried out first aid and visits to factories. In 1954, the Penrose Centre was opened in Auckland and is an example of the most highly organised clinic to date.

The training of medical practitioners in the field of occupational health began in 1948 when Dr Garland gave six lectures to fifth year medical students at Otago University in Dunedin, New Zealand. Today the Otago Medical School employs a full-time Associate Professor in occupational health and has established a diploma course in occupational health for medical practitioners. The Auckland School of Medicine incorporates occupational health teaching in the Department of Community

Health. Occupational Health is also a part of the Comprehensive Nurse Programme at many of the Polytechnic schools in New Zealand.

The Department of Health established its first Industrial Hygiene Laboratory in Wellington in 1964. Several early records of occupational health hazards in New Zealand have been documented and noted by Glass (1974). For example: James Cook, who was aware that scurvy was an occupational hazard of seamen in the 18th Century, took appropriate measures to prevent this disease; in 1889, it was observed that most cases of persons bitten by the Katipo spider were old Maori women because they did most of the work in the kumera beds; and in 1895, there was a report of housemaid's knee in a working woman of 54 years old who had to kneel frequently in her job.

Highlights of the development of occupational health are contained in this overview. But, the occupational health service itself is only as good as the policy which the undertaking allows. It could be that the disparate sectors of the New Zealand system which attend to occupational safety and health will need to amalgamate in the form of the U.S.A.'s NIOSH. This may eliminate fragmentation of laws and give authority to one body for making and enforcing policy.

Policy

A policy statement is essential to the development of any occupational health programme. It allows everyone concerned to understand what is being attempted. The policy must be designed to reflect objectives of occupational health but it also hinges on other factors. Reed (1984) identifies these as:

- . law
- . economics, including market incentives
- . potential health problems in industry
- . resources to deal with problems
- . knowledge and its use
- . development of personnel.

(p.23)

In order to accomplish the health care objective with maximum efficiency and minimum expenditure of time and money, it is necessary to follow the principles of good managerial practice. These include the proper organisation and intelligent use of resources. Organisation is important in establishing priorities and priorities determine the allocation of resources.

Burling (1985) points out that the Marks and Spencers Department Store in London, England, is an excellent example of an enterprise with a policy keeping employee health and welfare uppermost in mind. The same care and attention to detail is accorded to

the health and safety of customers and staff as to any other aspect of their internationally famous retail operation. As a result, they run a highly efficient occupational health and safety service, enabling the company to achieve a high standard of health for its employees.

Marks and Spencers boasts a low absence rate and a high standard of safety for both staff and customers reflected by a low accident rate, explains Burling. With an average of fourteen million customers passing weekly through its stores, recorded incidents number up to 80 in a week, only a few involving hospital treatment. It is from examples of occupational health programmes such as this that occupational health nursing takes its lead.

SUMMARY

This chapter, sets out a brief history of occupational health from early Egyptian times to modern programmes in the United Kingdom, the United States and New Zealand. It emphasises that national policy is an essential part of any occupational health programme and must be designed to reflect objectives of occupational health. In order to accomplish the health care objective with maximum efficiency and minimum expenditure of time and money, properly organisation and intelligent use of resources must be practiced.

Marks and Spencers Department store in London is given as an excellent example of an employer driven occupational health programme which keeps employee health and welfare uppermost in mind.

CHAPTER 3

OCCUPATIONAL HEALTH NURSING

There is little information on the effectiveness of occupational health services as a whole, and little understanding of their true value in promoting and protecting the health of the work force. Not only are occupational health programmes undervalued, but those who work in them are not seen as important and influential health professionals. Few nurses see this area of employment as highly desirable. Consequently there are only 302 nurses in this occupational class.

History

The first nurse in industry was appointed in 1878 at Colman's of Norwich, England, "to treat the injured and visit the sick". Then, as now, there was no requirement to employ a nurse or doctor, the decision to do so being made by the employer. The First World War saw many nurses working in factories, but Hall-Patch (1985) states that their duties were somewhat different from the duties of those nurses today.

Shaw (1981) states that the first occupational health nurse in New Zealand was hired by May and Bryant match-stick manufacturers in 1924 in Upper Hutt, Wellington. This nurse was very much concerned with the social welfare of workers. A large percentage of her time was spent in organising and helping with a drama club, a choir, a marching team and the supervision of the canteen. Forty years later, the written job descriptions of

occupational health nurses are concerned more with the clinical treatment and reviewing aspects of practice than with the development of a comprehensive role encompassing prevention, health promotion and rehabilitation. However, in the example set out below, the social component of the job still remains.

Some of the duties of an occupational health nurse at a cable company in the South Island of New Zealand in the 1960's include:

- . reporting to employment officer
- . writing up sick leave forms and entering it on green cards
- . writing up wage increase memos, change clock card numbers
- . filling in personnel record cards for new employees
- . writing up termination cards
- . keeping first aid room clean
- . disinfecting telephones
- . noting medical and stationery orders and ordering laundry
- . assisting safety officer in routine duties as required
- . being secretary of social club and safety committee
- . counselling consisted of only assisting the Personnel Officer as required.

(From job description, Austral Standard Cable Co., 1960)

In the 1980's, occupational health nursing has moved another step forward as can be seen in a job description set out by the Electricity Division of the Ministry of Energy (Appendix II). The description is a comprehensive consolidation of expectations placed on the nurse to perform in a professional and knowledgeable manner regarding all phases of occupational health. It encompasses activities that, in the past, were performed only by personnel officers and safety officers. This implies that employing authorities are now recognising that nurses are capable of more than just industrial first aid and organising social events as was seen in the 1920's and 1960's.

As noted in the 1924 job description of the occupational health nurse, she was involved with the social welfare of workers and her nursing skills were underutilised. In the 1960's, the job description implies more task orientation with only a small social component. Now in the 1980's, requirements of the nurse have gone full circle back to social welfare expectations enmeshed with highly technical and advanced nursing and environmental knowledge.

This has largely come about through the efforts of the occupational health nurses themselves in job negotiations, and in the education of employers and general practitioners. Senior employees in the Department of Health and notable experts in occupational health such as W. Glass have offered both support and advice in the development of occupational health nursing.

The Uniqueness of the Occupational Health Nurse

As Morris (1985) emphasises:

Occupational health nursing incorporates a basic philosophy of understanding and appreciation for the individual worker, the profession and function of the occupational health nurse and a fundamental view of health. The work setting is one of the best places in the community to begin health screening, health education and health promotion programmes.

(p.66)

Occupational health nurses have been and still are involved with social, political and economic change in a way possibly unique to this specialty. Because of this, they can be a particularly influential group among primary health care workers and nursing generally, in the coming decades.

It is asserted that occupational health nursing is different to any other form of nursing, (Hall-Patch (1985), Laird (1987). Laird believes the essential difference lies in the relationship between the nurse and a profit oriented management:

. occupational health nurses deal with a management who has little knowledge of health or medical matters. They have profit as their prime concern and preventative medicine is very

hard to quantify in dollar terms,
especially when the confidentiality
of much of the nurse's work is so
important.

(p.15)

This may be the reason that so few occupational health nurses care for so large a worker population in New Zealand: 302 nurses and 363,228 workers (D.O.L. Report, 1984). Managers are reluctant to hire nurses because of the cost involved and once nurses are employed, their wages are often lower than those in the public sector. This discourages many capable nurses from entering the occupational health field. Being responsible to a management which does not know or understand the nurse's functions can also be discouraging to an enthusiastic occupational health nurse.

Most occupational health nurses are working independently without contact with other health professionals. They must make decisions on their own and take full responsibility for their actions, thus the importance of networking with other nurses.

Networking among occupational health nurses is an important factor in professional effectiveness. Experiences can be shared and ideas exchanged. This can be important in decision making and in the establishment of attractive conditions of work and remuneration. Laird (1987) also states:

- . the wage award of occupational health nurses in New Zealand is low, \$16,380 annually in 1986. Therefore many of the nurses need to negotiate a more equitable wage with their employers. Again, a lot of importance is not placed on someone or service that does not turn out a profitable product.
- . job descriptions and employment contracts should be negotiated every twelve months. It can be difficult to convince management that the nurse's work extends beyond first aid.

(p.15)

Hall-Patch (1985) also identifies some of the significant differences in practicing nursing in an occupational health setting. Firstly, in occupational health nursing, the emphasis is always on the prevention of illness and injury arising at work. This requires a completely different approach than that which is used by nurses in hospital settings. It is not sufficient to say, "diagnose, treat and cure". Instead one asks, "What is the hazard?" and "What can be done to avoid the risk?" If injury or illness does arise, one asks, "Is this a work-related incident?" "Why is this happening?" "Who else is affected?" "What can be

done to avoid repetition?"

Secondly, Hall-Patch believes occupational health is concerned with wellness, as opposed to illness, and that generally the clients are fit people. Where health problems do exist, every effort is made to accommodate work to the individual's capacity. The nurse must be able to meet the clinical needs of the condition and consider the needs of the job and living generally. Thus there is great benefit to both employee and employer if the occupational health nurse plans and directs an effective rehabilitation programme.

According to Hall-Patch, it is essential for the nurse to have an intimate knowledge of the workplace, to understand the materials in use in the factory; to know the methods of operation; and to identify hazards and the consequent risks to health. This requires a methodical approach and continual vigilance. The nurse must sometimes learn how to use tools different from those in her past hospital work experience. These may be noise level meters, whirling hygrometers, Draeger Tubes and light meters. Some of the nurse's work is advisory to management and to employees. Decision-making and accountability factors are high.

The occupational health nurse has an on-going relationship with her/his clients at work, unlike short-term hospital contact. Therefore, it is important that trust develops between client and nurse in order to enhance the total health care relationship.

In order to assist the development of trust, the nurse may make a special effort to find information the client requests; make appointments as needed for him/her; write letters of referral as necessary, re-check blood pressures as promised; and do anything else which will show the client that he/she is important and worth remembering. This trust may take one or two years to develop and is necessary in order to help the client through problems or crises. This is the main and most important concept of occupational health nursing, the development of trust between client and nurse.

THE NURSING PROCESS

There are similarities between occupational health nursing and general nursing, as well as differences. Convergence is found in the problem-solving method which provides a common ground on which all nursing can meet and which has a common language that all can use.

This problem solving method is the nursing process which encompasses four processes, assessing, planning, implementing and evaluating. This is a well known model for nursing practice, but it has only recently been applied to occupational health nursing. Cahall (1976) notes that in 1976, American nurses were introduced to the concept of thinking in 'cyclical terms of assessing, planning, intervening and evaluating'. The extent and significance of the nurse's involvement in controlling the work environment depends upon:

- . the management's understanding of the occupational health service, e.g. physicians, safety engineers, hygienists, etc.
- . the nurse's own level of competence.

(p.19)

Experience and training can be the most limiting or the most enhancing factors affecting the personal contribution of the individual nurse.

The following descriptive definitions of the four phases of the nursing process are a synthesis of material extracted from the Permanent Commission Draft Report on the "Nurse's Contribution to the Evaluation and Control of the Work Environment", (Nursing Committee Permanent Commission, 1973) and Krantz's text "The Nursing Process", as noted by Hissey (1980). The four phases of the nursing process described here are assessments of needs, planning, implementation and evaluation. This process can be applied to occupational health nursing in a systematic, very relevant way. Operational definitions are set out below.

Assessment of Needs

This is the collection of information or cues as observational stimuli which are received through the sense organs, i.e. by seeing, hearing, smelling, tasting, feeling and organized as information through which other problems are identified. Hissey (1980) identifies other sources of cues for assessment:

(1980) identifies other sources of cues for assessment:

- . current attendances at the health centre, i.e. injury experience, signs and symptoms
- . survey results, e.g. whole plant or portion, walk through or specific purpose
- . evidence of known occupational disease or accident
- . statutory requirements

(p.3)

Planning

Hiskey (1980) explains that first, priorities of action should be considered and rated according to need. Parameters for planning might embrace:

- . statutory requirements
- . resources, personnel and equipment, within the plant and externally
- . potential problems, e.g. ergonomics, which is the relationship of a person to the equipment with which he/she works. An example is the adaptation of a chair to the person who sits in it, taking into account good posture and the height of the working area.

(p.4)

Goals to be achieved should be set, nursing actions selected and budgets presented to management. Nursing actions, according to Hissey could involve:

1. Environmental monitoring, which should be purposeful with documentation of observations.
2. Health monitoring, i.e. assessment of those at risk. This must be within legal limitations, and results recorded for future reference.
3. Health education for the workforce or information on hazards.
4. Organising appropriate first aid services for emergencies, including treatment of personnel and supply of equipment.

(p.4)

The care plan is then structured, taking the form of a record of problems, related goals and nursing actions.

Implementation

Hissey (1980) goes on to explain how nursing action may be carried out alone or in a team setting. A written record of the action should be kept. The nurse should be competent to perform the allocated nursing actions. During the implementation stage, it is wise to reflect on identified problems. During the

previous stages, some actual or potential problems may have altered, ceased or increased to become obvious priorities. Plans must be adaptable to changes in problems, priorities or resources. Accepted practice of hazard control should be adopted. For example:

- . substitution
- . isolation
- . enclosure
- . exhaust ventilation
- . modification of work process
- . provision of protective clothing/
apparatus

(p.4)

Evaluation of Achievement

There are five stages, according to Hissey (1980) that are used for evaluation:

- . selection of observable criteria
(identified and validated during
the assessment phase)
- . collection of relevant information
- . comparison of the criteria and
collected information
- . judgement of that comparison
- . feedback and modification of the
care plan

(p.5)

The Application of the Nursing Process

An example of how the nursing process has been used in the workplace by this author is set out below:

Attendances at the health clinic confirm that a number of women in the cord plant department of a cable company are complaining of "tennis elbow". Research into the area shows that all of these women are performing the same arm movements on their machines, putting brackets on the ends of different coloured cords. In medical terms this problem is referred to as RSI or Repetitive Strain Injury.

Planning for change commences with setting the goal of eliminating all cases of the repetitive strain injury, tennis elbow. These nursing actions are selected:

- . to immediately remove the affected women from their present job;
- . to reallocate these workers
- . to treat with the anti-inflammatory drug Disprin, and to encourage the women to apply heat to the area for 15 minutes three times per day.

The implementation of the plan includes informing management of the problem and consulting the engineers to modify the machines to change the arm movements required for the task.

Evaluation takes place as follows, using Veney and Kaluzny's (1984) monitoring strategy:

- . observe to see if the sore elbows are no longer sore (comparison between plan and reality)
- . document the data (data for monitoring inputs)
- . put the women back on their own machines after elbows cured and after machines modified (activities carried out in completing programme)
- . observe to see if RSI reoccurs (data for monitoring outputs, ultimate effects)

As shown above, the nursing process method of problem solving can be implemented quite well in a factory setting.

NURSING AND MANAGEMENT

Model for Work Management

Gifford and Kimbro (1984) emphasise that occupational health nurses need to recognise and overcome several unique barriers in their work:

- . the fact that occupational health nurses work in organisations where management systems are quite different from those

which exist in health care organisations.
Business managers just manage and do not
work on the assembly line as well.

Nursing managers in small hospitals
manage as well as do some patient
care

- . images associated with the traditional
hospital model of nursing create other
barriers in the occupational setting.
For example, nurses taking orders
from doctors contrast with self-
motivated decisive male managers who
give orders
- . barriers result when occupational health
nursing is described as a series of
tasks and activities without an under-
lying conceptual base. As well as
doing some tasks, the occupational
health nurse also has many managerial
responsibilities, including analysing
problems, planning and decision
making in relation to policy issues.

(p.39)

Gifford and Kimbro (1984) present a practice theory of management
designed to help the clinician manager identify and describe
crucial elements of management work and responsibility. The

Kimbrow-Gifford Management Model (Appendix III) is a cognitive map which illustrates this theory and helps the manager to envision the "big picture" of an organisation, develop plans, analyse problems, and implement actions, all with the aim of making the organisation perform better. They have developed and tested this theory and model in a multidisciplinary management course which they conducted over six years. A management model of an occupational health nurse in independent practice will be presented in a later section of this paper. (Figure 11.1)

Research

The improvement in practice of any professional discipline is supported by and based on the research endeavours of its investigators who help to expand and refine the body of knowledge of the profession. The opportunities for nurses to conduct research in occupational health are varied and plentiful. Rogers and Spencer (1984) give examples of researchable topics:

- . the assessment of safety hazards and correlations with injury rates
- . the determination of the impact of biological, physical, and chemical hazards on healthy and high risk populations
- . the identification of nursing interventions which have the most favourable impact on worker health promotion

- . the assessment of the effectiveness of personal protective equipment for both female and male workers
- . the ascertainment of cost-effective approaches to providing occupational health services to employees
- . the evaluation of traditional and contemporary roles of occupational health nursing service
- . the impact of occupational hazards on the family members of workers

(p.58)

Through research, an important contribution to the field of occupational health nursing will be made which will resultantly impact on workers, the environment and the health team. Occupational health nurses will be the key investigators for important research projects which affect not only the worker but extend to the family and community as well.

Justham (1982) in his article concerning research in occupational health nursing offers guidance to occupational health nurses in pursuing lines of enquiry and in reporting work they have done. Only by writing up research that the nurses have generated, can occupational health nurses emerge from the attitudes still expressed by many lay persons, that occupational health nursing means "fishing things out of eyes and undertaking first aid".

SUMMARY

This chapter gives a short history of occupational health nursing in New Zealand and explores the uniqueness of the role. The nursing process is outlined and made applicable to the occupational health setting. A work management model by Gifford and Kimbro (1984) is presented to help the nurse identify elements of work management and responsibility. Finally, research is advocated as making considerable contributions to occupational health. Researchable topics are listed, which include the assessment of safety hazards and correlations with injury rates and the impact of occupational hazards on the family members of workers.

CHAPTER 4

NURSES AS ENTREPRENEURS

The majority of occupational health nurses are independent nurse practitioners because of their isolation which requires autonomy and accountability. However, the occupational health nurse who is an entrepreneur will run his/her own business and contract to industries for services rendered. A nurse entrepreneur is one who organises, manages and assumes the risks of a business or enterprise. During the past decade, more and more nurses have been educated in the skills and theory of primary care delivery. These nurses are emerging as professionals prepared to assess and diagnose individual responses to deviations from health, manage care in certain illnesses and plan and promote the maintenance of health. Evidence in the literature shows that these nurse entrepreneurs are usually efficient and cost-effective.

Lundeen (1985) discusses recent studies conducted by the Federal Office of Technical Assistance (OTA), the Health Care Financing Administration (HCFA), Kaiser-Permanente and others in the United States. They indicate that between 60 and 80 percent of primary care activities, previously considered part of the role of the physician exclusively, can be assumed by professional nurses with advanced education in primary care, without a decrease in quality. In addition, studies comparing physicians and nurse practitioners show that people cared for by nurse practitioners are more satisfied with their care, resulting in improved patient compliance and superior patient outcomes. These studies were

carried out in 1982 by Ramsay, Watkins and Wagner.

Independent private practice has become the goal of many nurse practitioners. The struggle to establish nurse-based practice sites is becoming a challenge for the 80's.

Examples of Nurses in Private Practice

In the United States it is estimated there are approximately 10,000 nurses in private practice, notes Brash (1986). Numerous articles, in the nursing literature, give examples of these nurses in the U.S.A. and in other countries who are in private practice (Felton, Keely, Renehan & Alley, 1985, Tarulli, 1982, St. Amand, 1982, Pearson, 1986 and Holmes, 1986).

Reviewing such articles will help nurses going into independent practice be aware of the strength required and the pitfalls which may arise. Nurses in their own practice subscribe to the philosophy of quality, cost-effectiveness, independence and customer choice.

The Efficiency of Independent Nurse Practitioners

Veney and Kaluzny (1984) state that efficiency refers to whether service or programme results could be obtained with less cost involvement. Efficiency concerns the relationship between the results obtained from a specific service or programme and the resources expended to maintain that programme. Since resources are usually limited in the health field, services and programmes

must compete for them. Evaluations of efficiency will determine whether new services or programmes are funded or not funded, whether they are continued or terminated, expanded or contracted. Veney & Kaluzny pose some of the questions that arise from the evaluation of efficiency. These include:

- . are programme benefits sufficient for the cost incurred?
- . are programme benefits more or less expensive per unit of outcome than benefits derived from other programmes designed to achieve the same goal?

(p.3)

Choi (1981) cites many studies which have confirmed that primary care provided by nurses is safe, effective, economical and acceptable to consumers. The literature confirms these findings.

Keene (1987) agrees that there is strong evidence which supports the efficiency theory of independent nurse practitioners. Where nurse midwives have been used extensively as in England, the mortality rate of the newborn is low compared with other countries. It has been suggested that if better use was made of midwives in New Zealand, the infant mortality rate which includes cot deaths, may drastically decrease. The assumptions are: that the midwife would perform more efficiently during the time of delivery; that there may be more pre and post natal education regarding the patient; and that the midwife could follow-up the

care of the newborn, thus complementing the service of Plunket which is under-staffed and under-funded, according to statements in the news media.

Fagin (1982) claims studies comparing the quality of nurse-midwifery care with routine obstetrical practice as delivered by obstetrical medical residents in the U.S.A. show nurse-midwives achieved major reductions in prematurity and neonatal mortality. Fagin cites a project in South Carolina, where it was found that adolescents cared for by nurse midwives prenatally were less often anemic at delivery, had more normal spontaneous vaginal deliveries and larger babies than a comparable group of patients served by obstetrical residents.

Griffith (1985) emphasises that when a control group receiving physician services was compared with an experimental group receiving services from nurse practitioners, those in the nurse practitioner group were found to have lower blood pressures, lower blood sugars and fewer hospitalisations.

Nurse practitioners continue to show an uncanny ability not only to provide primary care equivalent to that of physicians, but also to offer something special that increases adherence to health programmes, as cited by Ramsay, et. al. (1982). A decrease in patients' symptoms was also found by Watkins and Wagner (1982). The phenomena of greater adherence to regimes, fewer prescribed medications, decreasing symptoms and fewer

hospital days are noted in nurse practice comparative studies by Lewis, Resnik, Schmidt and Waxman (1967). The studies have documented aspects of patient management where nurses showed superior results in effecting nutritional changes, better appointment keeping and adherence to medication (Sullivan, 1982).

Ramsay (1982) described data from 40 patients who attended a hypertension clinic staffed by physicians. It was compared to data from 40 patients who attended a clinic staffed by nurses. The study took place over 15 months. Nurses appeared to have more success in handling obesity and to achieve a better control of hypertension. Health outcomes obtained by nurses have not been found to be inferior to those obtained by physicians. This finding has been taken as evidence that nurses can provide quality health care.

Lundeen (1985) cites studies comparing physicians and nurse practitioners. They show that people cared for by the latter are more satisfied with their care, resulting in improved patient compliance and superior patient outcomes.

There are several explanations why nurses have had such good outcomes with patient care, explains Ramsay (1982). Past research has shown that nurses follow their patients more closely than physicians. Nurses had greater opportunity to monitor patients, particularly in blood pressure and dietary management. Increased supervision may therefore be one factor in successful management

of the hypertensive patients. Other research on process variables suggests that the process of providing care differs for physicians and nurses. For example, nurses see fewer patients, on the whole, and spend more time with each one. Their new status as independent practitioners may be a powerful force in promoting the demonstration of competency.

Cost-effectiveness of Independent Nurse Practitioners

According to Veney and Kaluzny (1984), effectiveness refers to whether programme or service results meet predetermined objectives. Emphasis is on the immediate results of the programme and whether these outcomes are as expected. Evaluations of effectiveness are aimed at improving programme formulation. The questions central to this type of evaluation include:

- . did the programme meet its stated objectives?
- . were programme providers satisfied with the effects of programme activities?
- . were programme beneficiaries satisfied with the effects of programme activities?
- . are things better as a result of the programmes having existed?

(p.3)

Nurses in independent practice can reduce the need for costly services. Griffith (1985) cites studies which show that nurses can provide many primary care services as efficiently and less expensively than physicians. In addition, nursing services often reduce the need for more costly services such as hospitalisation. A group of nurse practitioners in Florida is contracting with physicians and hospitals. Their fees are lower than those of medical doctors and they are trying to get hospital visitation privileges, which would give them the authority to write orders and visit the patient without the doctor being present.

Keene (1986) cites an alternative state funding study which was carried out at the Otumoetai Health Centre in Tauranga, New Zealand between 1979 and 1983. Among the study's findings was the "dramatically lower cost" of care for the centre's patients compared to the national average. Keene attributes this to the philosophy and style of practice at the centre. In particular the expanded role of the practice nurse, in doing home visits, special clinics and their own surgeries, has decreased the need for referral, hospitalisations and accident and emergency attendance.

Brash (1986) explains that disadvantaged groups such as the institutionalised elderly and the chronically ill, cared for at home are high-cost users of medical care. As suggested in the discussion paper "The Independent Nurse Practitioner in New

Zealand", nurse practitioners may not only substitute for existing services, but may also provide services that are more appropriate and thus decrease costs.

Nurse midwives in the United States are currently charging slightly less than obstetricians for what in some cases, is essentially the same service, says Griffith (1982). This represents a small saving to the customer. The largest saving comes from the fact that nurse midwives do not continually use expensive technology such as fetal monitors and intravenous fluids. Clients of midwives have shorter hospital stays or no hospitalisations at all. In a study reported from Georgia (United States) the overall estimated expenditure for peri-natal care decreased also.

The cost savings resulting from nurse-midwifery care have been shown in a six-year study in New York, as cited by Fagin (1982). The savings ranged from U.S. \$855 to \$1,840 when compared to normal birth charges in thirteen Manhattan hospitals providing care for a population from low socio-economic groups.

The aforementioned studies have shown that nurses are cost-effective providers of a wide variety of primary care services. Not only are their direct costs lower than those of physician providers but the cost of ancillary services is greatly reduced when nurses are primary carers. These cost benefits must be made accessible to consumers by new legislation. Barriers must be

eliminated which prevent direct access to nurses for ambulatory health services for children and teenagers, prenatal and postnatal care, nursing-determined home care, and care of the elderly.

A quest for direct reimbursement in ambulatory care that suggests substitution of nurses for other providers on the basis of cost and both short and long-term quality must also be explored. It should be clear that proposals for direct reimbursement for nurse providers who substitute for physicians implies head-on competition with the physicians for the health care dollar.

THIRD PARTY REIMBURSEMENT

Without direct third party reimbursement for all licensed professional providers, entry into the health care system is restricted and true competition is impossible. (Griffith, 1982 and 1983, Hershey, 1983, Mauksch, 1975 and Pearson, 1986).

As Pearson indicates nurse practitioners should be directly reimbursed because:

- . nurse practitioners deserve to receive directly the money they legally have earned
- . nurse practitioners offer cost-effective health care services and should be assigned their own reimbursement code
- . direct reimbursement would be a way to generate the statistics necessary to prove how important nurse practitioners are in the health care delivery scene

(p.60)

In New Hampshire, Pearson (1986) states, a group of nurses wanting to start their own business applied directly to Blue Cross/Blue Shield Insurance Company seeking third-party reimbursement. They made no progress in negotiation until they retained a lawyer.

The nurses had an option to either get a bill into the legislature or to sue Blue Cross/Blue Shield for restraint of trade. Members of the committee talked to officials of the Federal Trade Commission who recommended the legislative route first. The nurses then sought the cooperation of the State Nursing Association in obtaining reimbursement legislation. They collaborated, raised U.S. \$2,500 to pay for expenses and attorneys' and lobbyists' fees and this small group succeeded in passing the bill.

One of the key elements to the successful passage of the third-party reimbursement law was letters of support from physicians in the community who worked with nurse practitioners. The nurses wrote the letters and many physicians were happy to sign them. The letters said that the physicians did not believe there would be any increase in cost to the consumer and that direct reimbursement of nursing services would give consumers more health options. One big reason the bill was passed was that no one thought the nurses could do it. The doctors thought the insurance companies would stop the nurses and the insurance companies thought the doctors would stop them.

After the passage of the bill, Blue Cross/Blue Shield was allowed to decide what the reimbursement level for nurse practitioners would be. It selected 70 percent of the usual and customary charges for a family practice physician. All issues, states Pearson (1986), still have not been resolved, therefore the third party reimbursement committee had plans, in 1986, to survey the

State's nurse practitioners.

One of the things learned from the Committee experience exclaims Pearson (1986), was the mistakes of trying to share problems with the general membership. They became frightened of what may have happened. Positive summaries should have been given instead. Many nurse practitioners couldn't handle the intense committee reports and stopped coming to the meetings. Instead of using the executive committee to vent frustrations, they made the mistake of using the general membership. It is recommended that nurse leaders motivate others through positive feedback instead of fear.

When Goldwater (1982) introduced her bill for third party reimbursement into the Maryland legislature in 1977, she had several purposes in mind. These purposes are as follows:

- . to provide a method for tapping the valuable resources of nursing
- . to provide consumers with a choice
- . to provide economic assistance to those nurse mid-wives and practitioners who want to practice independently

(p.413)

Nurses work at a great disadvantage without the benefit of third-party payments, Goldwater explains. This discourages nurse practitioners and mid-wives from striking out on their own to

provide needed services. Nurses are condemned to function at a low level, using only a fraction of their knowledge and skills. This is an injustice to the profession and a disservice to the public.

The two bills that Goldwater sponsored through the Maryland legislature were subsequently enacted, providing third-party reimbursement for nurse practitioners and nurse mid-wives.

Goldwater (1982) believes nurses have power and if they do not make themselves heard they have no right to expect politicians to know and understand the needs of the people who seek and need the nurses' services. As a legislator, Goldwater offers a few lobbying tips:

- . work through the professional organisations. They keep nurses informed about current issues
- . know who the government representatives are and keep in touch with them, support them
- . become familiar with the committees that handle health legislation. The real spadework is done in committees. This is where nurses can be most effective
- . question the local government representatives on health legislation and let them know where you, as a nurse stand

- . increase influence by supporting candidates in a campaign. Be active in political action groups
- . remind candidates that one out of 44 registered women voters is a registered nurse (in the U.S.A.) and that registered nurses have families and friends who endorse candidates and contribute to their campaigns

(p.414)

Economic issues are of prime importance at a time when health care is increasingly constrained by diminishing resources. It is vital that nurses be informed about reimbursement mechanisms in relation to health service practice.

Griffith (1982) believes reimbursement should be based on the level of competence of the provider. For cost-effectiveness, the service should be performed by the least expensive personnel prepared to provide that service. Griffith states that nurses must not support fee-for-service with equal reimbursement for all provider services. Legislators may see no reason to promote reimbursement for nurses if there is no economic advantage to their services. When nurses seek less reimbursement for the same services that are provided by physicians, they are a competitive force in the health care system. Before nurses can be competitive, they must be directly reimbursed.

The Auckland branch of the New Zealand Nurses' Association has recently (1987) submitted a remit regarding third party reimbursement for independent nurse practitioners. It reads as follows from the Annual Report (1987):

That NZNA approach private health insurance companies regarding the reimbursement of fees paid by clients visiting independent nurse practitioners.

(p. 43)

If this remit is passed at the Annual Conference, 1988 then it is hoped that the New Zealand Nurses' Association will consider the implications in the light of overseas experience, before proceeding with implementation.

New models of health care delivery are needed if rising costs and patient dissatisfaction with present services are to be countered. Whether entrepreneurial nursing practice is consistent with these goals is an appropriate question for debate. Those who will decide, consumers and government, must ask how they can benefit from continuation of the existing medical monopoly of independent practice in the private section of the health service.

It may be necessary to change or legislate new laws in New Zealand. Third party reimbursement is necessary for independent nurse practitioners to become successful and to gain the status they will need in a competitive market. There are other issues

which also need examining:

- . does the necessity of referrals by general practitioners in order to visit a specialist of the consumer's choice need to be eliminated?
- . does a maximum charge need to be set for general practitioners and independent nurse practitioners?
- . do guidelines and standards need to be set for independent nurse practitioners?
- . is a change in the law necessary regarding the authority of nurses to order diagnostic tests and some medications?

Freedom for Ordering Medications and Diagnostic Tests

Nurse practitioners will also need to look at changing existing legislation which prevents them from ordering drugs and diagnostic tests. There is considerable constraint placed on a nurse in independent practice if she/he is not allowed to order the medication or the diagnostic test which may be important. As well as educating legislators to the competencies of the nurse, chemists and diagnostic centres must also be educated to accept prescriptions from nurses.

In 1978, Joint Practice was introduced into York Hospital in Maine, United States. York's nurses are no longer handmaidens of the doctor. They are responsible for nursing 'orders' which

include prescribing a patient's diet, activities, some medications and requesting diagnostic tests and treatments. They are in joint practice with the doctors.

The aforementioned issue may not be important to nurses who plan to practice alternative medicine such as homeopathy, naturopathy and other non-allopathic medicine (see definitions) or who confine themselves to health promotion, education and prevention. But to nurses who intend to retain aspects of "Western Medicine", not being able to order tests and some medications, could put a heavy constraint on their practice. For example, a nurse in joint practice with a physician would need hospital visiting privileges and the authority to write orders or she/he would just be another practice nurse taking orders from the doctor.

Another example is a nurse in independent practice who deduces that the client needs certain medication or tests ordered. If the nurse is not allowed to order these, she/he must refer the client to a doctor, thus requiring the client to visit and pay for two professionals instead of one.

A third example is the occupational health nurse who wants to order anti-inflammatory drugs and an x-ray for a person who just hurt his/her back. If a doctor is not associated with the industry, the nurse cannot order these things. Thus, the employee must visit his/her own doctor, negating the benefits of free health service at work.

Freedom to order will rightly become a prominent issue as more and more nurses set up in independent practice. Nurses must prepare their arguments now in order to influence and educate legislators so they may get the necessary bills passed as laws in favour of the nurse.

SUMMARY

This chapter presents evidence that nurse entrepreneurs are efficient and cost-effective. Third-party reimbursement is examined and is emphasised as being crucial to the genesis and survival of independent nurse practice. Freedom for ordering medications and diagnostic tests is also seen as an essential component in independent practice development in occupational health.

CHAPTER 5

THE NEEDS AND CHARACTERISTICS OF SMALL ENTERPRISES: AN EMPHASIS ON HEALTH

While occupational health has been developing in large enterprises over the past three decades, little attention has been paid to the health of workers in small enterprises. This is particularly important in New Zealand where 92% of businesses employ fewer than 20 people. Moreover, these small businesses account for 55% of the private sector workforce and the workers are not receiving adequate health and safety care. Small firms are more efficient, more innovative, more likely to promote competition and more likely to create jobs, than large firms, thus, caring for their employees is supporting the economic growth of the country.

Some Characteristics of Small Enterprises

The problem of the health of workers in small industries is not confined to New Zealand. In a study of 83 small factories in Singapore, satisfactory environmental conditions were found in only twelve, states Phoon (1986). The general practitioners who had clinics near the factories and treated employees at the company's expense, did not visit the factories on a routine basis. None of them had ever been consulted on occupational health or safety problems by the management or workers. There were no nurses in the factories surveyed.

According to Phoon, small factories have limited financial resources and are therefore unable to spend much money on provisions for health and safety. This opinion is supported by Glass (1987). Compared with large factories, there is usually less job security and poorer remuneration in small businesses and, as a result, the calibre of worker is generally lower in terms of education. That is, employees are often those workers rejected in the competition to secure jobs in the large factories. The need for a positive public image may also affect the health of workers. The large factories, including those owned by multinational enterprises are generally very aware of their public image. They often spend money on health and safety to improve this image while small factories are less exposed to public scrutiny. Larger enterprises may also be pressured by unions to provide health and safety care.

By contrast, to the work of Phoon (1986) this author has not found the workers of small factories to be less educated than those in larger factories. Some employees of small firms like the personal team approach which is often characteristic of small industries. They may be living in a small town where there are no large factories, and employment must be obtained from a variety of small businesses. Some workers may also be paid at the same level as those in larger factories because they all belong to the same union with the same pay rates, (e.g. engineers, mechanics, nurses.) However, this author does agree that the larger factories may spend money on health care to keep

up a good image in the public eye. Phoon's study took place in Singapore where cultural differences would affect the results.

This author however agrees with Phoon (1986) that in small factories workers may perform a variety of tasks and be rotated to work on a variety of machines. As a result they may be less familiar with the working and the danger of each particular machine, leading to more accidents. In large factories there is usually less interchangeability of workers connected with different processes and they consequently are more experienced with a particular machine and its associated processes.

In the United States, the report of the National Institute of Occupational Safety and Health (1977) states that:

Firms that employ fewer than 25 persons make up 90 percent of all establishments across the country. Yet their employees are often completely without occupational health services because small businesses lack the resources, expertise and time to develop them.

(p.4)

Hardesty (1981) emphasizes this view, when he says the problem of occupational health and safety services is particularly acute in small businesses (comprising the majority of work establishments)

where less than two percent of the employees have access to industrial hygiene services and workplace monitoring programmes.

In the United Kingdom, a study was done by Homewood (1982) on occupational health services to small industries. Homewood believes the characteristics of small firms need to be known and understood by those delivering the health services to them. The expectations of the small firm employer and his/her general outlook will affect his/her attitudes and behaviour towards visiting health personnel. Some of the characteristics found in Homewood's United Kingdom sample may be applicable in the New Zealand situation.

The mean age of executives was 54 years old. An older manager/chief executive, who has never practiced safety, may not adhere to the Factories & Machinery Acts. It was also found that most managers/chief executives usually had no formal tertiary management qualifications. This could affect the marketing technique used by an occupational health service. Simple language and clear well set out programmes will be more effective with this type of manager. Older managers/chief executives may be more resistant to change. This means that new ideas on occupational health and safety are less likely to be developed in small firms.

The smaller the firm, the less likely the employer will be to belong to the Employers' Federation. The implications of this

are that the managers will not receive inputs at these meetings concerning new developments in occupational health and safety. They are less likely to meet colleagues who would influence them positively in this area.

Homewood (1982) also found the turnover of staff was low in small enterprises. This would be of benefit to an occupational health service because of less need to continuously interview new employees and do pre-employment medicals. It takes time to build a trusting relationship between the nurse and the new employee. The turnover may be low because workers feel part of the firm and experience self-fulfillment at work. Such continuity of staffing could reduce the routine workload of an occupational health service and enhance programme planning.

Since managers or owners of small firms have a desire for independence, this desire might make them guarded and only prepared to accept an occupational health service which has earned credibility with them. They may expect the same wide range of choice and high standard of service that they are seen to give their own customers.

Small firm managers or owners may have greater control over their employees. This means employees will follow management's lead regarding an occupational health service. The small firm manager may also show more concern for the employees than in a larger firm, thus accepting an occupational health service more readily because management cares.

Since small firms are rarely unionised, as noted by Glass (1986) they may not feel bound to observe regulations, particularly in safety and health. This could have repercussions for an occupational health service. Health education and safety precautions would not be followed at such a firm. Homewood (1982) also found that locally, in Great Britain, small firm employers often used their experience to contribute to the community. This may be of importance to an occupational health service in that an employer and the service may be involved in the same type of work. For instance Lion's Clubs sponsor diabetic testing, blood pressure screening, etc.

Homewood's (1982) study found most small firms to be well established and not incorporated. This suggests stability which, in turn, suggests that if management accepted the concept of an occupational health service, provided the service met management's expectations, then it would probably be retained for a long period.

In summary, it may be that smaller firms will only accept occupational health when the service reflects the same characteristics, in terms of advantages and disadvantages, as do the small firms themselves. Although Homewood's (1982) study was carried out among small industries in the United Kingdom the conclusions are of interest when developing an occupational health service for small industry in New Zealand.

Primary Health Care

In the opinion of this author, the terms "primary health care" and "occupational health" have much in common, and may even be interchangeable. Both are concerned with a person before he/she becomes ill or needs hospitalisation.

Phoon (1986) stresses that the delivery of primary health care, including occupational health aspects must always be done with a team approach. Nurses require training in occupational health to make them specialists. Phoon emphasises that ergonomics must also receive attention. Kavoussi (1976) in Iran described the many ergonomic problems found in the small carpet factories. Insufficient lighting and ventilation and the typically assumed posture resulted in unnecessary fatigue and discomfort. The provision of satisfactory canteens, rest areas, washing and toilet facilities can improve the health of workers. Often in small factories these are deficient.

Primary health care programmes have the potential to achieve a great deal by improving the nutrition of workers; teaching family planning; the development of exercise and general health education. The occupational health team can be the implementor of such programmes. Japanese industry-based family planning programmes in factories, established in the early 1950's, states Phoon (1986), are attributed to the fact that the programme also dealt with child rearing, nutrition and general health. The trade unions were also cooperative.

Glass (1984), in his series of articles on health services for small industries, reaffirms the words of Dr. Tom Garland, as follows:

The primary objective of an occupational health service is to alter conditions and to alter practices and habits so that work becomes healthier and safer. The industrial casualty must be treated and a close contact with casualties throws light on necessary preventative measures.

An efficient and complete coverage appears possible by establishing suitably sited industrial health clinics staffed by industrially trained nurses, under the direction of the Industrial Medical Officer, which any worker in the surrounding area can attend.

The main purpose of the staff attached to any such centre, is to influence the working environment of those employed in the area so that more attention is paid to health and safety on the job. The centre should attempt to cater for all workers in the area.

(p.18)

The functions conceived by Tom Garland of combining primary health care with educational, personal and environmental monitoring is the basis of any occupational health service.

Glass (1984) poses the question:

Can this function be best provided from the type of clinic that has been constructed up until now or can it be delivered better in another form?

(p.19)

Glass recognises the importance of the "first aider" in factories, as was stressed during the Conference on Occupational Health in Colombo in 1981. The "first aider" is, in fact, the primary health care worker. If the motivation of the first aider is high then his/her work can be expanded within the limits of his/her background, training and skill.

The "first aider" can build up a network of support from other health professionals in the community. This network could include a district nurse, a public health nurse, an Accident Compensation rehabilitation officer, a practice nurse, a health inspector and healthworkers attached to voluntary agencies. There must be a link between the "first aider" working alone in the periphery and the central health services in the community. This link can be provided by the occupational health nurse. The

expanded role of the "first aider" is Glass's answer to the question he posed.

Catering for the Needs of Small Enterprises

One example of a scheme established to cater for the needs of smaller enterprises is "Group Occupational Health Services" in the United Kingdom. Some of these services have been established with the help of the Nuffield Foundation. Each service is run independently by its own board of management, consisting of employers, trade union representatives and professional staff. Funds have largely been obtained from the original grant and from modest subscriptions by participating businesses. These subscriptions are levied on a yearly per capita basis and just enable the services to meet the cost.

Nurses are the main employees in the services. They visit all industries in the group regularly, treat injuries and refer to doctors when necessary. The main advantage of the scheme is the regular and ready presence of the nurses who are concerned with primary health care at the work-place. Similar units have been established in the Republic of Korea and also in Thailand. This scheme may also be applicable in New Zealand. Instead of a foundation grant, a Health Department subsidy could be used as well as membership fees from businesses.

In New Zealand, occupational health services are often delivered to small industries through the use of occupational health clinics run by the Health Department. These are located in

Auckland, Wellington, Mount Maunganui, Christchurch, Lyttleton, Dunedin and Whangarei.

The opportunity exists to develop other occupational health services for small enterprises which have as their central base either a government occupational health centre or a group general practice or an individual general practice.

It seems appropriate at this time to review the pilot occupational health programme implemented in Auckland in 1980. Increasing maintenance costs and declining attendances at occupational health clinics prompted the Department of Health to initiate a pilot scheme for an alternative occupational health service in 1980. This provided mobile occupational health care for workers in two industrial areas of Auckland.

Greenstreet (1983) was closely involved with the successful pilot scheme. She compiled profiles of industries in the Onehunga area and visited three medium sized factories regularly for half a day each week for 12 weeks. The services were evaluated and the findings indicated that each factory should employ a nurse. A nursing agency agreed to contract nurses out to the two factories who agreed to employ a nurse. These nurses can be employed on a monthly, quarterly or six monthly basis. The Health Department oversees their work and is available for consultation. The success of this scheme implies that if similar schemes were offered in other cities, management's attitudes may

be changed regarding the employment of occupational health nurses.

The three factories Greenstreet visited were medium sized factories (100-200 workers). This author proposes that the same principle of mobile occupational health visits can be applied to numerous small factories under contract to the nurse and the nurse does not have to be employed by the Health Department. The nurse can be in her/his own business.

There is already an independent nurse practitioners' practice in Auckland. Three nurses are involved, practicing their individual specialties. One is an occupational health nurse.

Also in Auckland are several occupational health nurses in private practice. They visit a number of industries and are under contract. They send out accounts every month and the companies pay for the materials and equipment which the nurses need. Other urban and rural centres with small businesses may well follow suit.

SUMMARY

In summary, this chapter reviews the literature describing occupational health programmes in small enterprises and discusses the ways in which their health needs differ from larger firms. Knowledge of the characteristics of small businesses can be of great value to the health professionals who visit and work in those businesses.

Different ways of catering to the needs of smaller enterprises have been listed. They are as follow:

- . Health Department occupational health clinics
- . a first aider giving primary health care with the occupational health nurse liaising between the first aider and community resources
- . a mobile occupational health nurse in private practice
- . a multidisciplinary staff employed at a nurse-run clinic
- . a nurse-run clinic of three nurses, one who specialises in occupational health.

In the light of diminishing public funds allocated to the health service and too few occupational health nurses in the Health Department for too many factories, it is time private enterprise stepped in to fill the gap.

CHAPTER 6

SETTING UP AN OCCUPATIONAL HEALTH SERVICE FOR SMALL MANUFACTURING AND PROCESSING FIRMS

This field report describes the setting up and operation of an occupational health service for three small industries in the Terrace End area of Palmerston North. The service was provided by the author, an experienced occupational health nurse.

The objectives of the study were to:

- . establish the health needs of employees
- . design and implement health education and testing programmes
- . evaluate the effectiveness of the planned occupational health programmes
- . establish guidelines for the provision of occupational health services to small businesses.

TIME SCHEDULE FOR PROJECT

1986

- October: industries approached and selected.
- November: letter of introduction sent to managers and interview arranged.

1987

- March-April: profiles of each of these industries completed.
- April-May: personal interviews of employees in all three companies completed.
- May: educational programme commenced in all factories.
- June: hearing tests done on all employees
educational programmes continue in all factories
- July-Nov: educational programmes continue. Counselling, blood pressure checks and interviewing new employees.
- November: evaluation of programmes.

PROCEDURE USED IN SELECTION OF THREE SMALL INDUSTRIES

The first ten industries for consideration in the project were selected at random in October, 1986 from 375 manufacturing companies in the Terrace End area of Palmerston North. The list was then taken to the Health Department to be sure none of their nurses were also visiting these companies. The Health Department added the names of some companies and deleted the names of others until seven were left to consider for the project.

Letters of introduction, stating the plan for the proposed pilot programme were sent to each of the seven managers, a date for an interview was requested at this time (Appendix IV). Since none of the factories replied by post to set up an interview date, they were contacted by telephone to arrange the interview. The nurse interviewed all seven managers, three of whom agreed to participate.

Key points in the interview included the giving of information about the purpose and proposed content of the occupational health programme, and discussion of the job description of the contract occupational health nurse (Appendix V). Four of the seven companies did not consent to participate. There were a variety of reasons. The manager of one factory was critical of the work of a Public Health Nurse 18 months previously. The employees felt that she was invading their privacy. The manager did not want this to happen again. This author explained

that the content of the programme would be based on client need.

The manageress/owner of the second factory stated her employees were safety conscious, educated and really didn't need any health programme. She said they had enough money to attend their own doctor and would not need any further care. She was offered screening and other diagnostic programmes, but she declined the service.

The personnel manager of the third business stated that the company had all the health and safety personnel they needed and had regular visits from the Public Health Nurse and Visual Hearing Tester based in the District Office of the Health Department.

The fourth business was a volunteer agency and the director stated there was no spare time during lunch breaks for health programmes or screening. She had consulted the workers.

The three small industries that agreed to participate were:

- . a paper bag manufacturing company
- . a joinery factory
- . a dairy company

METHODOLOGY USED

A case study approach is used to present the findings from this year long study. Such a case study approach, according to Veney & Kaluzny (1984), involves choosing a single activity, organisation or entity for observation. This may represent one example from a number of entities, activities or organisations. This process increases the amount and depth of information that can be collected about one organisation but, it limits the kinds of conclusions that can be drawn from the data. Although the case study method is essentially qualitative in nature, a variety of data collection methods can be used including document analysis, observation, participant-observation, and the collection of perceptual data through questionnaires and interviews.

Case studies, explain Veney & Kaluzny, will generally be carried out in a single organisation or programme. They may be undertaken at any time, need not be planned or anticipated at the beginning of a programme or started at the time of the programme implementation. It is a good tool when insight to the entire working of a programme is needed. The case study method provides both detailed and extensive knowledge of selected aspects of a programme and a broad overview of the total programme. It is exploratory and can serve as a good source of initial information that may prove sufficient for decision making about the programme. The case study can be the first step in setting up an experimental design to answer questions about the effectiveness, timeliness, adequacy or impact of a programme.

Limitations of Case Studies

The case study approach has several limitations. Lack of clear categories, selective perception and interactiveness are listed by Veney & Kaluzny (1984). In this particular project, recommendations and conclusions are not entirely based on the case study results due to the small number of factories and employees participating.

The lack of clear categories for data collection can be remedied by intensive thought prior to the study about the issues that will require decisions and the specific information that must be obtained to allow these decisions to be made. Once a series of questions has been established, the categories for data collection and the organisation of information will follow.

Selective perception is not only a problem of how the answers to questions are perceived and recorded but also presents problems in the initial formulation of questions. To avoid the problem at the formulation stage, it is necessary to pretest questions. In the field study situation, selective perception of answers can be avoided by the chance to ask for clarification and by restating the response in terms the evaluator understands so that misperceptions may be corrected. Although this approach still leaves room for problems of perception, it is an effective data collection method.

Interactiveness is a problem because the observation itself creates an unnatural setting. Therefore, evaluators must be very careful in the interpretation of their observations. Knowledge gained may not differ markedly from the true situation. There is a difficulty in measuring the size of the interactive effect on study results. Most effects cannot be assessed and it is impossible to tell how much of an answer reflects the real situation and how much was produced just because the question was asked.

The appropriate settings for case studies are the ones which are inappropriate for other types of evaluation. Case studies are often carried out where no initial planning was conducted for evaluation before implementation of the programme. No comparison groups or no criteria for inputs, process or outputs were established by which to evaluate the programme. The case study then becomes the only strategy available for conducting an evaluation of a programme. In this project, the case study seems appropriate not only for the collection of data, but also to provide a framework for the organisation of this data in the process of evaluation. In order to consider the confidence with which decisions can be made on the basis of data collected by the case study method, Veney and Kaluzny (1984) suggest evaluation of the programme in terms of relevance, progress, efficiency, effectiveness and impact.

Relevance

The major issues raised in regard to relevance are as follows. Is there a problem that a particular programme should confront? How clear is the problem if it exists? How well defined is the problem? Examining the nature of the problem, determining whether it is of sufficient magnitude to warrant some type of programme and delineating the nature of the programme needed to solve the problem are all issues amenable to the case study method?

Progress

The case study approach can provide information on the question of progress in a health services programme, (Veney and Kaluzny (1984). Progress concerns whether inputs, process and outputs meet some type of normative predetermined standards for their level of operation or success. A case study may become both an examination of the programme and an effort to set reasonable performance standards for the programme as the examination is going on. Standards set as a study progresses are likely to be influenced by the actual performance of the project, thus removing the basic objectivity that could exist in the study situation.

Efficiency

The main concern in an evaluation of efficiency, explains Veney & Kaluzney, is whether the results obtained by the programme could have been obtained less expensively. A case study cannot

evaluate efficiency because there are no comparisons between what is produced under a given programme and by a given process versus what it costs to produce the same results by using some other strategy. A case study is the study of a single example of the programme with no comparison group available. However, it is still possible for a knowledgeable person involved in a case study situation to make judgements about the extent to which the programme is operating efficiently.

Effectiveness and Impact

Effectiveness determines whether the programme has produced what it is expected to produce and impact determines the programme's long-term consequences. It is possible, using a case study approach, to determine whether the aims of the programme in the short-run - the effectiveness aspect - have been met. In examining long-term consequences, time must allow retrospect in regard to the programme. The major problem is that it is impossible to tell if major results of interest would have been obtained whether the programme had or had not existed. The evaluation schedules developed for this project (refer Appendices XII and XIII) are designed to:

- . collect data
- . evaluate the present occupational health programmes
- . assist in the development of future occupational health programmes

SUMMARY

This chapter notes the objectives of the project and lists the schedule involved. The selection procedure for the three factories is reviewed and methodology described. Limitations are discussed and evaluation methods shown. It is made clear that final conclusions and recommendations are not entirely based on the case study results.

CHAPTER 7

CASE STUDY ONE

COMPANY A

In this chapter, the characteristics of Company A are described, the programme is set out, key features of the data and important issues are discussed.

Description

Company A is a paper bag manufacturing industry which is managed by one person. The parent company is in Auckland. There are 31 employees, 18 male and 13 female.

The manager is a middle-aged, innovative, approachable and efficient person. He does not have a university degree, but has worked his way up to a management position through experience in various other occupations. Manager A runs his company like a well-oiled clock with team-work being essential. He believes in employee suggestion and if anyone has a better idea regarding a particular job, he will implement that idea. He is a caring person, sometimes taking an ill employee to visit the doctor. Consequently, his staff are supportive and give "that little bit extra" when it counts. The company authorises and pays for a dinner and social every year. The manager instigated this idea himself and has organised the social annually for the past three years.

The countries of origin for employees are India, Tokelau, Western Samoa and Tonga. The work force also contains Maori and caucasian New Zealanders. Employees range in age from 17 to 53 years. Their occupations in the company include machinists, fork lift drivers, a mechanic, engineer and supervisor. The hours of work are from 8 a.m. to 4.30 p.m. five days per week with an afternoon shift of 1 p.m. to 9 or 10 p.m.

The industry is housed in one medium-sized factory building with the manager's office, lobby, lunch room and engineering shop all under the same roof. There are two separate storage buildings, one which is shared by another company. Figure 7.1.

Two to three men work on the tuber machine which cuts up the brown paper into the right sized bags. Glue laced with formaldehyde (for adhesion) is applied to the bottoms of the bags through a machine process and the printing is put on. The bags are then carted over to girls who are working on sewing machines which stitch the bottoms of the bags together. From there the bags are fed through a machine for another sewing process. This is the area where the employees occasionally get a repetitive strain injury to their wrists because of picking up bags and feeding them through the machine. Two women work at each end of this machine performing the same job. The bags emerge from the middle of the machine onto a conveyor belt where other girls inspect them. A machine at the end of the belt ties up the bags. From there they are put onto pallets which are hoisted by the

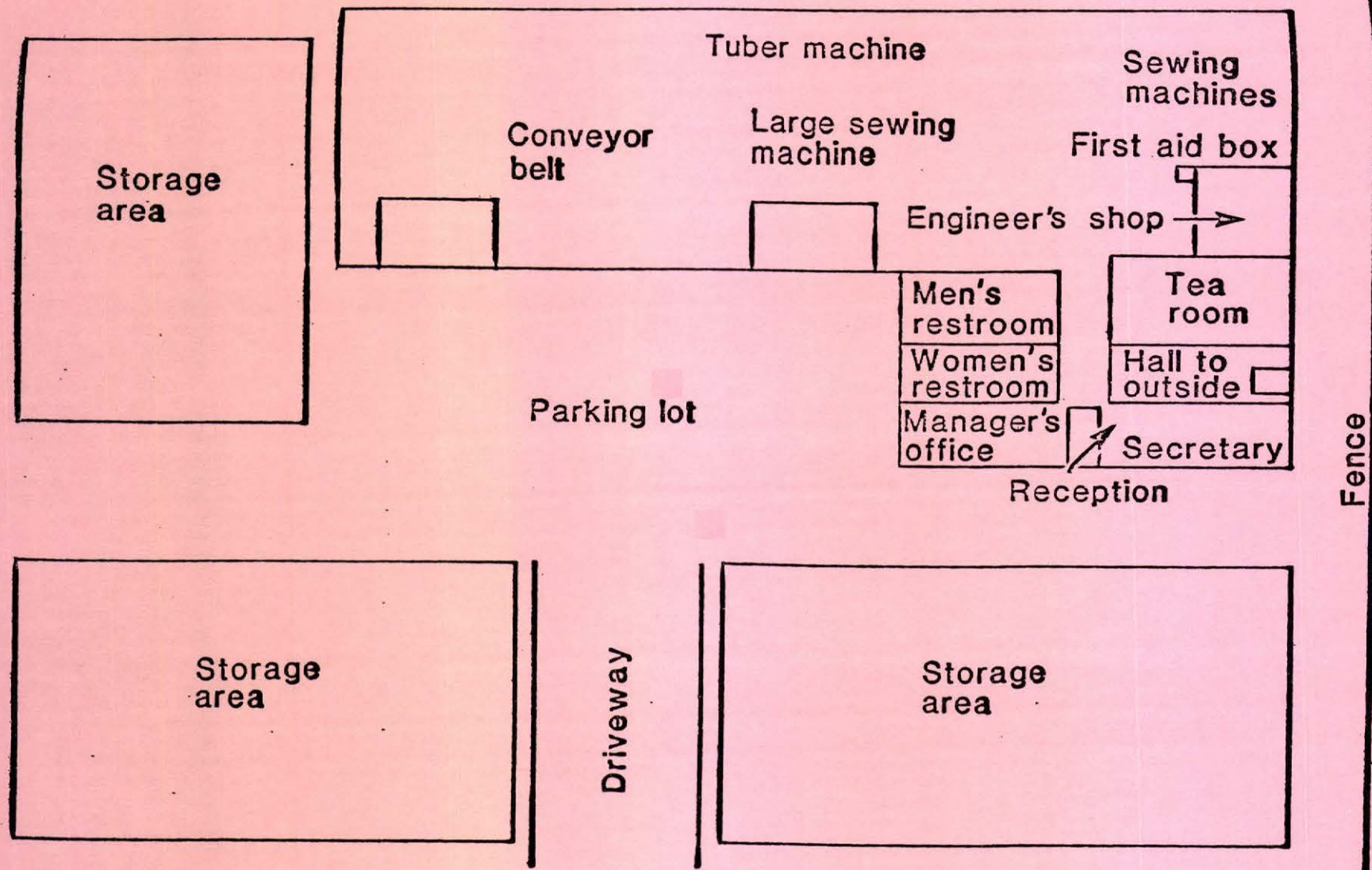


Figure 7.1 Floor plan, company A.

fork lift and driven out to the storage area. Trucks then collect the ordered amounts for various destinations.

Initial Interview with Manager

A letter of introduction was sent to the manager, (Mr A) in October 1986 (Appendix IV). Two weeks later, a telephone enquiry was made regarding an interview. During the interview, the manager was presented with a list of the services which this nurse could offer (Appendix V), an article describing where this type of project has been done before and the Christchurch Occupational Health Pilot Project Report. He was told of this nurse's qualifications to implement the programme in his factory. Manager A stated that health and wellness are conducive to higher production and expressed a caring attitude towards his employees. He readily agreed to have the health programme implemented in his factory and a possible date for the next meeting was discussed.

Commencement of Health and Safety Programme

A second meeting took place with Mr A. on 6th April 1987. This manager agreed to cover costs incurred during the programme. A letter of introduction, written by the nurse (Appendix VI) was given out to employees with their pay packets and a company profile was completed (Appendix VII). At this time the manager was presented with a diagram showing the year's planned schedule, called a Programme Evaluation Review Technique or PERT Diagram (Appendix VIII). The manager agreed to type the health record form on his own computer at home (Appendix IX).

The 14th of April was agreed upon as the date on which interviews of employees should commence. 29 health assessment interviews were completed, two employees refused to participate. Topics of interest for future lectures were chosen by employees at the completion of each interview (Appendix X). This information would help formulate the health programme for the year.

ASSESSMENT OF HEALTH NEEDS

From the company profile, it could be seen that the main hazards at the workplace were noise, lifting, dust, repetitive strain injury (RSI), use of formaldehyde and handling of hazardous chemicals. The health programme would include these educational areas.

Individual Assessments

Each employee was interviewed separately. The same type of data was collected in all three factories using similar health forms (Appendix IX).

Cancer Prevention

Fifteen women (83%) had not had cervical smears done in the past two years and 12 women (67%) did not carry out monthly breast examinations. It was therefore noted that education in responsibility for cancer prevention should be incorporated in the overall health programme for the plant. Counselling was

done at the time of each interview, recommending one to two yearly cervical smears and monthly breast self-examination.

General Health Care

Three employees (10%) had not visited their doctor in two years or more. Their reasons were, "too expensive" and "was not ill". Four people (13%) were found not to have kept their tetanus immunisation up to date. These people were counselled as to where they could obtain an injection and how many years it would last. Diabetic testing showed no elevation in blood sugar for any employee. Nine employees (29%) had not visited their dentist in the past year and 12 (39%) had not seen the optometrist in five years. Instruction was given in these areas to visit the dentist at least yearly and to have their eyes examined every five years or more often in certain circumstances.

Three employees had elevated blood pressure for their age on three consecutive occasions. One person has a single kidney because of a recent operation. This employee smokes. The second person was overweight and under stress. She stated that her aunts and uncles were hypertensive. The third person was moderately overweight, got little exercise and smoked. All three were referred to their doctor.

Diet and Exercise

Thirteen employees (42%) were overweight, six (19%) had poor dietary habits and 12 (39%) did not get enough exercise. Counselling was given in each area as needed and appropriate articles and pamphlets handed out. 11 (35%) employees drank more than four cups of coffee or tea per day, thus having a fairly high caffeine intake. They were asked if they had any symptoms of too much caffeine in their diet. These symptoms would present as insomnia, headaches, irritability, heart palpitation or stomach upsets. They all denied having any symptoms.

Smoking and Alcohol

Twelve (39%) of the employees smoked and stated they would like to stop. They were counselled in this area and given appropriate articles on the subject. They were also informed of how smoke could harm others.

Three (10%), all men, drank excessive alcohol. Excessive being defined as one or more jugs of beer per night. They were counselled on the harmful effects of alcohol, especially when driving while intoxicated.

Pregnancy

One woman was five months pregnant and had not yet seen a doctor for antenatal care. This was due to the fact she was changing doctors and had not found a new one yet. She has two other children. It was stressed that she should have antenatal care immediately, especially since she admitted smoking one pack per

day and diabetes runs in the family. The nurse decided pregnancy care and normal development of a fetus would be a lecture topic since two other women also were pregnant.

Stress

Three (10%) employees suffered from stress related symptoms. One of the three had high blood pressure, stomach upsets and realised she was under stress, and the second one had family problems which were difficult to cope with. Outside help had already been sought. The third person had business worries, but said he was coping.

Other Areas of Counselling

Counselling at the initial employee interview covered many other areas as set out in Table 7.1.

Table 7.1: Areas of Counselling in the Initial Interview

| Occupational | Sporting | Family | Personal |
|--------------------------|-----------------------|-----------------|---------------------|
| Hearing protection | Concussion in sports | Death and dying | Diabetes |
| Lifting techniques | Warming up exercises | Home safety | Skin care |
| Protection from dust | Hypothermia in sports | Mental illness | Menopause |
| Repetitive strain injury | Drinking | | Hypotension |
| | | | Neck pain |
| | | | General hygiene |
| | | | Aids disease |
| | | | Varicose veins |
| | | | Osteoporosis |
| | | | Allergies |
| | | | Ear syringing |
| | | | Options if pregnant |

PROGRAMME PLANNING

Information which could be used as a basis for the health programme was obtained through assessment, discussion and counselling of employees during the initial assessment review, and from the company profile (Appendix VII). Topics of interest were first aid, women's health, cardio-pulmonary resuscitation, protection from noise and the prevention of injury when lifting heavy articles. It was planned to include all of these in the health education programme. (Appendix XI)

A few employees expressed dissatisfaction with their visits to their doctor. They wanted advice about the type of care and the information they should receive from their general practitioners. The nurse considered that education was needed in patients' rights. Other useful suggestions for educational topics included the following:

- . AIDS information
- . safety in the sun
- . near drowning
- . violence and prevention
- . industrial safety

An outline for the year's educational programme (Appendix XI) was then presented to the manager for approval on 4 May. Then began the lengthy and difficult process of setting up the programme.

ORGANISATION AND IMPLEMENTATION OF THE OCCUPATIONAL
HEALTH PROGRAMME

The occupational health programme planned for Company A extended over seven months. A summary of the nurse's activities is set out in Table 7.2. The full schedule may be found in Appendix XV.

Table 7.2: Summary of Organisation and Implementation Schedule

| | |
|----------------------|---|
| <u>6 April:</u> | Company profile completed |
| <u>9 April:</u> | Personal interviews commenced and continued throughout programme |
| <u>10-29 April:</u> | Conferred with Health Department, Met with A.C.C. Safety Officer. Arranged lecture with Cancer Society. |
| <u>7 May:</u> | Women's Health lecture: reproduction and pregnancy |
| <u>25 May:</u> | AIDS video shown and brochures dispensed. |
| <u>29 May:</u> | Cancer prevention video and lecture given by Cancer Society Educational Officer |
| <u>8 June:</u> | Hearing Conservation slides and tape delivered by nurse. |
| <u>16 June:</u> | Commenced hearing and eye tests. |
| <u>26 June:</u> | Pre-menstrual Tension video shown by Family Planning officer. |
| <u>16 July:</u> | Family Planning lecture on Contraception and Sexually Transmitted Diseases. Shown to all employees |
| <u>30 July:</u> | Collected video set from university and showed video on proper lifting techniques. |
| <u>31 July:</u> | Conferred with Visual Hearing Tester at Health Department regarding hearing tests. |
| <u>20 August:</u> | Two first aid films shown. |
| <u>30 September:</u> | "Men for Non-Violence" lecture |
| <u>5 October:</u> | Evaluation questionnaires distributed |

DISCUSSION AND EVALUATION

All five aspects of programme evaluation are considered. That is:

- . relevance
- . progress
- . efficiency
- . effectiveness
- . impact

(Veney and Kaluzny, 1984)

Two sets of questionnaires are used in this company's evaluation. The first set was distributed to 16 women by the Family Planning officer who delivered the four womens' health lectures. (Appendix XII) As this is a designated segment of the total occupational health programme for Company A, it is relevant to use these questionnaires in the overall evaluation. Six (38%) of the 16 questionnaires were returned.

Following the completion of the occupational health programme, 31 questionnaires (Appendix XIII) were distributed to all employees along with their pay packets. These questionnaires had been pre-tested in the Christchurch Occupational Health Pilot Programme. The manager was also given a questionnaire, part of which was constructed from the same Pilot Programme. (Appendix XIV) This questionnaire was tested on four different managers. Six (19%) of the questionnaires were returned including the manager's questionnaire.

Relevance of the Occupational Health Programme

This occupational health programme addressed certain problems within the individual, the company itself and relevant problems in society today. One to one counselling was given as necessary during the employee interviews and as needed intermittently throughout the six month programme. The company profile showed a number of real or potential hazards which were addressed in the programme.

50% of the employees, according to questionnaire results, would have liked more work-related group health education. None wanted more group health education in non-work related topics. Therefore, perhaps the programme should have included more work-related topics and less of the general health information. Since only 19% of employees returned questionnaires, the aforementioned assumption may be entirely wrong.

67% wanted more time with personal problems and more health education on a one to one basis. Maybe if this nurse had visited twice a week, every week, instead of just trying the visit once, more people would have come to talk about problems.

Segments of the overall occupational health programme thought to be of most benefit were:

- . checking of blood pressure,
sight and hearing
- . cancer prevention
- . first aid
- . back care

Data collected after the womens' health lectures showed 67% thought the session on reproduction, diet, exercise and pregnancy was very useful and 33% found it useful. Session two on premenstrual tension was thought to be very useful by 50% and useful by the other 50%. Session three, involving contraception, was found to be very useful by 67% and useful by 33%.

These results make it clear that the selection of topics for womens' health was relevant and appropriate. Some comments on the questionnaires were:

- . interesting
- . interesting even though am past the menopause
- . good selection of topics
- . lectures and discussions were presented very well
- . am getting more exercise and watching my diet
- . sessions could have been longer
- . would like to know more of coping with menopause
- . everything was extremely well presented
- . no embarrassment and a little humour made it all very good watching and educational

The comments and data from these questionnaires has been more useful in evaluating the programme than the overall questionnaires, although they do not include the opinions of male employees. The usefulness may be because the women's health questionnaire was more specific and was given out immediately after the last session. The general questionnaire was given out six months after the programme began. It also was longer than the womens' questionnaire and probably more difficult to understand.

Parts of the programme thought to be of least benefit were AIDS and contraception. Management stated the balance of the programme was good.

Progress of the Programme

The entire occupational health programme for Company A was not completed, as the nurse took a full-time, paying job for six weeks. Three of the last scheduled sessions were omitted. (Appendix XI) 83% stated they would not have liked the programme to have been longer, therefore no problems arose from it being cut short. Unfortunately, though, Cardio-pulmonary resuscitation was not practiced as had been planned.

All employees felt the occupational health programme was worthwhile and 80% said the amount of time spent by the nurse at the factory was enough to develop a trust with her. These results demonstrate that even though the programme was fairly short, intense and compact, the hoped for outcome was achieved.

The results also help in making decisions regarding future occupational health programmes. All results include management responses.

Efficiency of the Programme

Programme benefits appeared to be sufficient for the costs incurred by the company (Table 7.3). The monetary costs incurred by the nurse were minimal.

Table 7.3: Expenditure on Occupational Health Programme
(Company A)

| ITEM | COST |
|---------------------------------|----------------|
| Women's health | \$97.50 |
| Slide projector hire | 15.00 |
| Donation Cancer Society | 20.00 |
| Donation "Men for Non-Violence" | 50.00 |
| Petrol reimbursement to nurse | 450.00 |
| Stationary | 25.00 |
| Total | <hr/> \$657.50 |

Resource costs for this nurse involved time and energy spent organising the programme and implementing it. Results of this work may not be seen until months later and it is hoped that results will be sufficient for costs incurred. All of the employees felt the nurse delivered a professional and efficient service.

Effectiveness of the Programme

The pre-determined objectives for Company A were:

- . increase understanding of occupational health and safety
- . dispense information on health and safety
- . encourage healthy life-style changes
- . identify work-related problems and implement changes where needed
- . Consider on-going health services for the company.

Since only 19% of the questionnaires were returned by employees, it is difficult to ascertain whether or not the aforementioned objectives have been fully met. All of the employees and the manager felt their understanding of the aims of occupational health had been increased a lot as a result of the occupational health programme.

Information was dispensed on health and safety as set in the second objective. Although the programme was shortened and three

segments omitted (Appendix XV), this nurse feels the objective was met.

None of the employees who returned questionnaires had made lifestyle changes. Since there is no information from the other employees regarding this objective, it can not be determined if it was met. None who returned questionnaires felt any new work-related problems were discovered. Management felt a change had been made in the factory as a result of the occupational health programme. This was a higher response to the request that earmuffs be worn. Therefore, the fourth objective had been met in this nurse's opinion.

The idea of contracting a nurse for health services to Company A is not feasible according to management. Therefore the final objective had not been met. 33% of the employees wanted the company to continue the health services.

This programme provider is satisfied with the effects of programme activities as far as can be determined from the questionnaires returned. Satisfaction was also gained from the attention and interest shown by employees during the educational segment and from the support and co-operation of management.

Beneficiaries of the programme appeared satisfied with the effects of programme activities as they all stated it was worthwhile.

Things are better as a result of the programme having existed as shown by management's statement that there is a higher response to the request for hearing protection. The programme has also made people aware of occupational hazards so that they do have a choice to either protect themselves from injury or not.

Impact of the Occupational Health Programme

Impact evaluation was not possible for the occupational health programme in Company A because:

- . the nurse was only involved for seven months
- . not enough questionnaires were returned, only 19%
- . at present there will be no on-going health services

The observed effect of the programme, stated by management, more response to hearing protection, could have been obtained in an alternative programme. This could have been a short-intense programme of two to three sessions aimed only at hearing protection.

This nurse author's personal opinion is that the occupational health programme will have long-term effects, mainly on employee's personal lives instead of work situations. This is because of the interest and attention shown during personal

interviews, screening procedures and general health matters, as opposed to work-related subjects. Also because 83% stated they would have liked more time for help with personal problems and more health education on a one to one basis.

Conclusion

It can be seen from questionnaire results that the participants' knowledge of occupational health has increased; that the programme has been worthwhile; that the service was professional and efficient; but that only 33% would like the company to continue occupational health services. Thus beneficiaries of the programme, while feeling it worthwhile, could not see any advantage in continuing it. This infers that management and employees really do not see the advantages of health education and care at work. Perhaps other companies, hearing by word of mouth about the programme, will enquire about health services for their company.

CHAPTER 8

CASE STUDY TWO

COMPANY H

In this chapter, the characteristics of Company H are described, the programme is set out, key features of the data and important issues are discussed.

Description

Company H is a joinery factory which is managed by two partners. All of the 24 employees are male except for one woman who is employed as receptionist-secretary. An independent builder is also attached to the factory.

The managers do not have tertiary education but one has been through his joinery apprenticeship. The other manager has worked in the business most of his life and took over the company from his father. They are both caring and considerate toward their staff and mix in well, playing cards at lunch time. Employees are a mixture of caucasian and Maori workers.

The initial feeling one gets when entering the reception area is one of clutter and of noise. The clutter is due to joinery pieces being stacked in the reception area, waiting to be collected. The noise comes from the factory, only separated from

reception by one wall. This impact of noise is counteracted to some extent by the pleasing visual effect of a pink and gray decore in the office. Figure 8.1 sets out a floor plan of the building. The lunch room is an L-shaped small area with two large tables and benches. The first aid box is located in here. Unfortunately the room is not suitable for showing health education films.

As one enters the factory itself, there is another bombardment of noise with the added hazard of dust and flying particles. At least 88% of the employees are wearing their earmuffs. This is a hazardous occupation.

Initial Interview with Manager

As in the first case study, one of the managers of Company H was approached in October 1986. The letter of introduction was posted and an initial interview set up. During the interview, the manager was presented with a list of the services the nurse could offer, (Appendix V) an article describing where this type of project had been done before and the Christchurch Occupational Health Pilot Project Report. He was told of this nurse's qualifications to implement the programme in his factory. As management already knew of the project from a mutual friend he did not consult his colleagues but agreed to implement the programme in 1987. This manager was very concerned about the health of his workers.

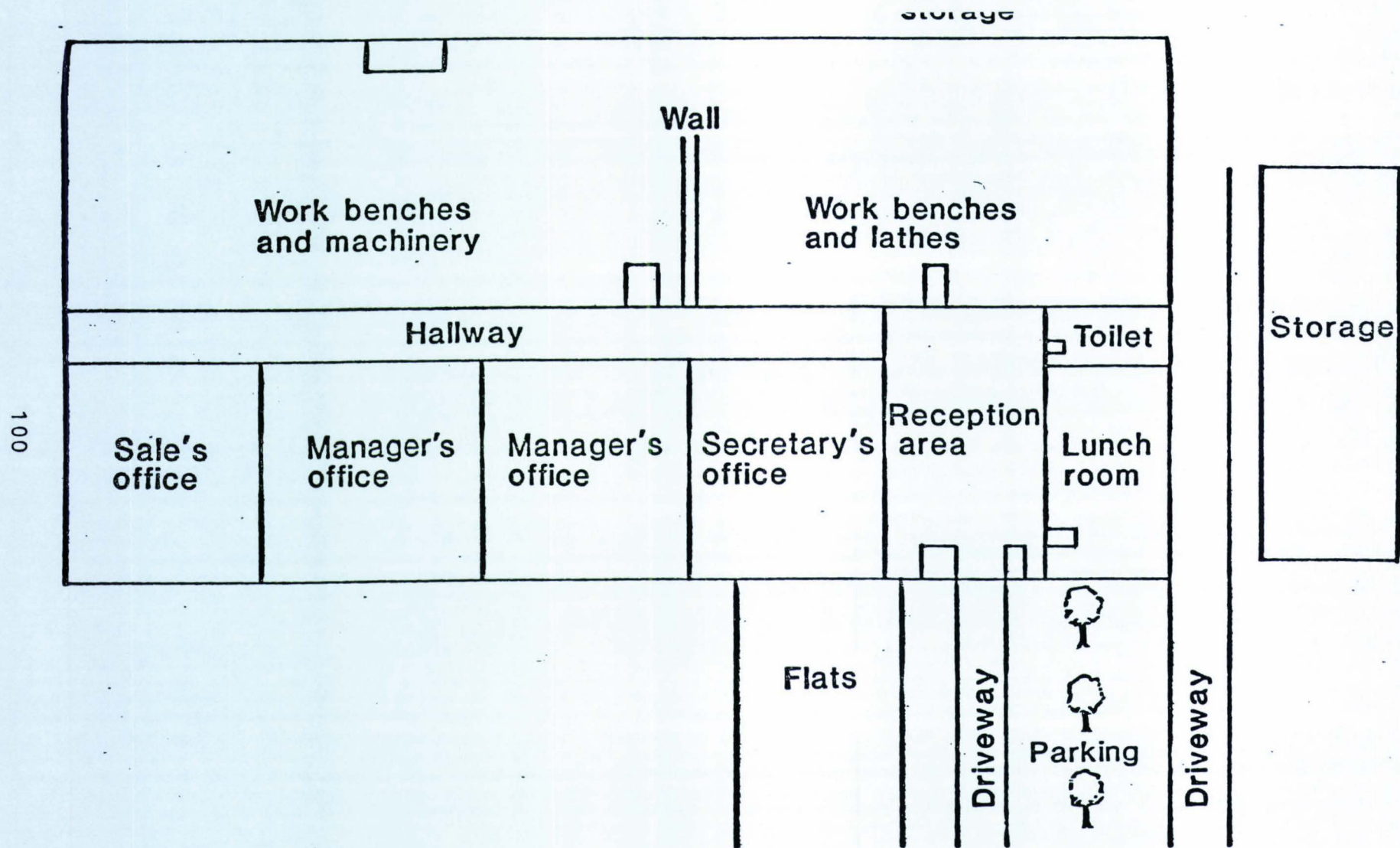


Figure 8.1 Floor plan, company H.

Commencement of Health and Safety Programme

The second interview with Manager H took place on 3 April 1987. This manager agreed to cover costs incurred during the programme. A letter of introduction, written by the nurse, (Appendix VI), was given out to employees with their pay packets and the secretary of Company H agreed to type the health record form on the computer (Appendix IX).

The 16th of April was agreed upon as the date on which individual interviews of employees should commence. 19 health assessment interviews were completed, one employee refused to participate, seven were not available on that date, and one interview was held with the independent builder.

ASSESSMENT OF HEALTH NEEDS

From the company profile it could be seen the main hazards at the workplace were noise, lifting, eye danger and dust inhalation. The health programme would include these educational areas.

Individual Assessments

Each employee was interviewed separately. The same type of data was collected as in each of the other factories, on the health form found in Appendix IX.

Cancer Prevention

The one woman on the staff was interviewed and asked about the cervical smear test for cancer and reminded of the importance of breast examinations. She does have a smear annually and also performs monthly breast examinations. Therefore, she was well informed about cancer prevention in those areas.

General Health Care

All employees were up to date with their tetanus injections. Six (32%) had not visited their dentist in the past year. They were advised by the nurse to visit annually to prevent tooth and mouth disease.

Ten (53%) people had not visited the optometrist to have their eyes checked in the past five years. These people were advised to visit at least every five years and probably every three years if over 35 years old and if glaucoma runs in the family.

All employees interviewed, except one, had visited their own doctor within the past two years. The person who did not have a doctor was referred to a general practitioner on the day of his interview due to ill health. Diabetes tests were all normal.

Diet and Exercise

Four employees (21%) were overweight, four (21%) had poor dietary habits and ten (53%) drank more than four cups of tea daily. These people were given dietary instruction with brochures, weight recommendations and advised about too much caffeine intake and the possible side-effects.

Four employees (21%) undertook no regular exercise. These employees were counselled on a good exercise routine and given literature on this.

Smoking and Alcohol

Six employees (32%) smoke and would like to give up. These employees were counselled and given two Reader's Digest articles on the topic. It was emphasised that they would stop smoking only when they personally wanted to. No one could force them to do this. They were also told about the dangers to others who inhaled their smoke. One man's wife smokes and their young daughter has asthma. He was told about the harmful effects the smoke could have on his daughter, precipitating an asthma attack.

Two employees (11%) admitted to habitually drinking excessive alcohol. They were counselled about the effects of this habit.

Asthma

Three employees (5%) have asthma as well as the previously mentioned daughter of an employee. All of these people were counselled about the precipitating factors in asthma, prevention and treatment. None of the adults found that working in a dusty environment precipitated respiratory problems. Permission was obtained from the father to notify the Asthma Society of his daughter's problems. The Society followed this up with a telephone call and information pamphlets while the nurse gave the father a photocopy of an article about asthmatic children, and the care they need.

Stress

Two employees (11%) admitted to being under stress. They were advised on the recognition of stress related symptoms, ways to prevent it and methods of coping with the stress and its symptoms. This nurse believes there are other employees under stress but they either did not feel confident enough to discuss this or they did not recognise their inability to cope.

Other Areas of Counselling

Counselling at the initial employee interview covered many other areas as set out in Table 8.1.

Table 8.1: Areas of Counselling in the Initial Interview

| Occupational | Sporting | Family | Personal |
|----------------------|-------------|---------------|----------------|
| Hearing protection | Sports | Safe toys | Skin care |
| Eye protection | accidents | Good hygiene | Prevention of |
| Protection against | Warming up | for children | heart disease |
| dust & solvents | in sports | Management of | Management of |
| Lifting instructions | | Multiple | hypertension |
| Ergonomics | Hypothermia | Sclerosis | & diabetes |
| | in sport | Tooth care | Low cholestrol |
| | Concussion | | diet |
| | Motor bike | | Death & dying |
| | safety | | Cancer signs |
| | | | Insomnia |
| | | | prevention |
| | | | Diabetes |
| | | | AIDS |

PROGRAMME PLANNING

The health programme for Company H was planned by reviewing the factory profile (Appendix VII), each individual interview, and by identifying topics of interest. This nurse also saw the necessity to include other educational areas. Because of the international AIDS problem, a video tape would be shown and other information would be provided. A lecture from a representative of the support group "Men for Non-Violence" would be included in the programme. Two first aid films and a film on cardio-pulmonary resuscitation with practical training on a mannequin were also included to meet the health needs of employees. A film on "Safety in the Workplace" and another one on safety in the sun and near-drowning would be shown as summer approached. (Appendix XVI)

ORGANISATION AND IMPLEMENTATION OF THE OCCUPATIONAL
HEALTH PROGRAMME

The occupational health programme planned for Company H extended over seven months. A summary of the nurse's activities is set out in Table 8.2. The full schedule may be found in Appendix XVII.

TABLE 8.2: SUMMARY OF ORGANISATION AND IMPLEMENTATION OF
OCCUPATIONAL HEALTH PROGRAMME

| | |
|--------------|---|
| 16-29 April: | Interviews commenced and completed. |
| 1 May: | Met with Family Planning officer to arrange AID's video |
| 4 June: | Arranged slide projector and video hire |
| 5 June: | Collected Hearing Conservation slides from Health Department |
| 11 June: | Hearing Conservation slides shown |
| 15 June: | AID's video shown |
| 24 June: | Commenced hearing tests |
| 8 July: | "Men for Non-Violence" guest speaker |
| 24 July: | Previewed back injury video |
| 31 July: | Consulted Hearing Visual Tester at Health Department regarding employees' hearing tests |
| 31 August: | Back injury prevention video shown |
| 7 September: | First aid films shown and demonstration given |
| 1 October: | Arranged Cardio Pulmonary Resuscitation (CPR) video and mannequin from Coronary Care Unit at Hospital |
| 6 October: | CPR video shown and practice on mannequin done |
| 12 October: | Evaluation questionnaires dispensed |
| 6 November: | Questionnaires collected |

DISCUSSION AND EVALUATION

All five aspects of programme evaluation are considered. That is:

- . relevance
- . progress
- . efficiency
- . effectiveness
- . impact

(Veney and Kaluzny, 1984)

Data from questionnaire results are used to substantiate evaluation comments. 20 questionnaires (Appendix XIII) were dispensed with pay packets to the employees of Company H in October 1987. These questionnaires were pre-tested during the Occupational Health Pilot Programme in Christchurch, 1985. Eleven (55%) questionnaires were returned. Both managers returned their questionnaires which were a modified version of the employee form.

Relevance of the Occupational Health Programme

This occupational health programme addressed certain problems within the individual, the company itself and relevant problems in society today. One to one counselling was given as necessary during the employee interviews and as needed intermitantly throughout the seven month programme. The company profile showed a number of real or potential hazards including noise, heavy weights, glues and solvents, compressed air and dust. These

problems were addressed in the planned programme. First aid films and instruction in cardio-pulmonary resuscitation were necessary because there were no trained first aiders working in the factory. Also when employees were asked what subjects they would be interested in for lectures, first aid was chosen.
(Appendix XVIII)

It was apparent from questionnaire results (69%) that Company H employees wanted mainly work-related health education and could not see the relevance of other health matters being discussed at work, although 46% did want more group health education in non-work related topics. 38% wanted some nursing care of general ailments and injuries. This was not possible during the occupational health programme because this nurse author did not visit the Company frequently enough to give first aid care. 15% wanted more advice about working methods in particular jobs and more health education on a one to one basis.

Segments of the programme thought to be of most benefit were:

- . cardio pulmonary resuscitation (77%)
- . hearing tests (31%)
- . sexually transmitted diseases (15%)
- . first aid (15%)

The part of the programme of least benefit to one participant was the contribution from the group "Men for Non-Violence".

Progress of the Programme

The entire occupational health programme for Company H was not completed, as the nurse took a full-time paying job for six weeks. Two of the last segments of the programme were omitted. (Appendix XVI)

All of the employees and both managers felt the programme was worthwhile and 69% said the amount of time spent by the nurse at the factory was enough to develop trust in her. 46% would have liked the programme to have been longer. These results show that although the programme was short and intense, the hoped for outcome was achieved. These results also help in making decisions about future occupational health programmes. These results include the managers' responses.

Almost everyone in the factory is now (Nov. 1987) wearing earmuffs, as observed by this nurse and management. Therefore, one expected outcome of the programme has been achieved.

Efficiency of the Programme

Programme benefits appeared to be sufficient for the costs incurred by the company (Table 8.3). Monetary costs to the nurse were minimal.

TABLE 8.3: Expenditure on Occupational Health Programme
(Company H)

| ITEM | COST |
|-------------------------------|-----------|
| Slide projector hire | \$15 |
| Video hire | 10 |
| Films posted to Wellington | 8 |
| Donation to speaker | 10 |
| Petrol reimbursement to nurse | 200 |
| Stationary | <u>20</u> |
| TOTAL | \$273 |

Programme results could not have been obtained less expensively. Resources needed to maintain the programme consisted of time and energy from the nurse together with time and money allotted by the company. However, this is not a true cost benefit analysis as the services of the nurse were given free of charge.

All of the employees answering questionnaires felt the nurse delivered professional and efficient services.

Effectiveness of the Programme

The pre-determined objectives of the occupational health programme for company H as discussed with the manager were:

- . increase understanding of occupational health and safety
- . dispense information on health and safety
- . encourage healthy life-style changes
- . identify work-related problems and implement changes where needed
- . consider on-going health services for the company.

All employees and both managers felt that their understanding of the aims of occupational health had been increased as a result of this programme.

The second objective was met by dispensing information on health and safety during personal interviews, audiovisual and lecture sessions. Brochures and pamphlets were given out as follow-ups to personal counselling and group health education.

31% had made life-style changes as a result of the programme. This is not a high enough percent to verify that the third objective has been met.

None of the employees felt the nurse identified any work-related health problems of which they were not aware and only one felt

that changes had been implemented as a result of the occupational health programme. With these results, it is apparent the fourth objective has not been met.

The idea of contracting a nurse for Company H is not feasible in management's opinion, although 91% of employees stated they would like the company to continue the occupational health service and 9% did not answer. This signifies that perhaps management should take note of employee opinion. The final objective could possibly be met in the future.

This programme provider was satisfied with the effects of programme activities as can be determined from the questionnaires returned. Satisfaction was also gained from the attention and interest shown by employees during the educational segments and from the support and cooperation of management.

Beneficiaries of the programme appeared satisfied with the effects of programme activities as they all stated that it was worthwhile. It can not be determined by questionnaire results if things are better at Company H as a result of the programme. It is hoped the programme has made people aware of occupational hazards, healthy life-styles and the options available for making changes.

Impact of the Occupational Health Programme

Impact evaluation was not possible regarding the occupational health programme in Company H because:

- . the nurse was only involved for seven months
- . only 65% of all questionnaires were returned
- . at present there will be no on-going health services

Impact evaluation can only take place over a long period of time. The impact over time could be measured by a decrease in hearing damage as well as changes in life style.

Conclusion

The data from the questionnaires show that the occupational health programme was worthwhile. Knowledge of occupational health was increased and a professional and efficient service was delivered. Employees would like an occupational health service to continue, but management was not in favour of the programme continuing. Part of the problem may be that management may not fully understand the benefits of an occupational health service, and that the present state of the economy may not favour money being spent on a paid occupational health service.

CHAPTER 9

CASE STUDY THREE

COMPANY D

The characteristics of Company D are described in this chapter. Important issues are emphasised and an appropriate occupational health programme is set out based on the nurse's assessment of the industry and its employees.

Description

This company processes milk products and is a subsidiary of the parent company in Wellington. There are two executive staff, a manager and a factory manager, overseeing 43 employees, eight women and 35 men.

The manager has no tertiary education, is middle-aged and has previously owned and managed his own milk station. He has recently been promoted from assistant manager to manager. The company is presently in a state of flux and reorganisation, because computer processes have been transferred to the main centre. As a consequence, the office staff have been reduced in numbers and a certain amount of stress now exists in the office and within management. Production is also being reorganised.

The manager is friendly and approachable, but is still feeling his way as a manager. He talks with staff on their level, helps

in the factory when it is busy and is generally open to new and innovative ideas.

Except for one Maori employee, workers on the factory floor are caucasian, ranging in ages from 19 to 60 years. Their occupations include process workers, drivers, engineers, laboratory technicians, mechanic, office manager, receptionist, computer operator, wages clerk, supervisors and foreman.

The main products of Company D are milk, fruit juice, yoghurt and cottage cheese. Careful hygiene in handling the products is of the utmost importance.

Regulations for entering the factory area require one to wear a white coat, gumboots, white cap and ear muffs. The majority of employees do not wear their ear muffs. Reasons they give for this include:

- . they're uncomfortable
- . I'm already deaf
- . they get in the way
- . I can't be bothered

Upon entering the factory, one gets a feeling of cleanliness and sterility with everyone dressed in white. Without ear muffs, the noise is irritating. Decibel levels range from 68 dBA in the cheese room to 97 dBA on the destacker machine. 85 dBA is the

allowed level during an eight hour work shift. Empty milk bottles can be seen progressing along a conveyer belt to be eventually filled and capped. Tracks run along the floor through a plastic curtained entrance way into the cool storage area. Crates of milk are carried along this track and are then stacked on trollies to be transferred on to rolling pallets which push right into the truck which takes it for distribution. Figure 9.1 illustrates a floor plan of Company D.

Two men and one woman are required to stack the crates of milk on the trollies, roll the trollies over to the pallets and transfer the crates onto the pallets. The men then push the rolling pallets onto the truck which involves some up-hill work. It is evident that back injuries could easily occur unless proper lifting techniques are practiced.

Initial Interview with Manager

The initial interview with Company D manager took place in October 1986 after a letter of introduction outlining the purpose of the project had been posted. (Appendix IV) He was very enthusiastic about the prospect of a health programme and spoke of eventually introducing it into the other companies in the group.

Objectives of the nurse and management for occupational health were discussed at the time of the interview. The manager said

Milk tanker truck pull-up

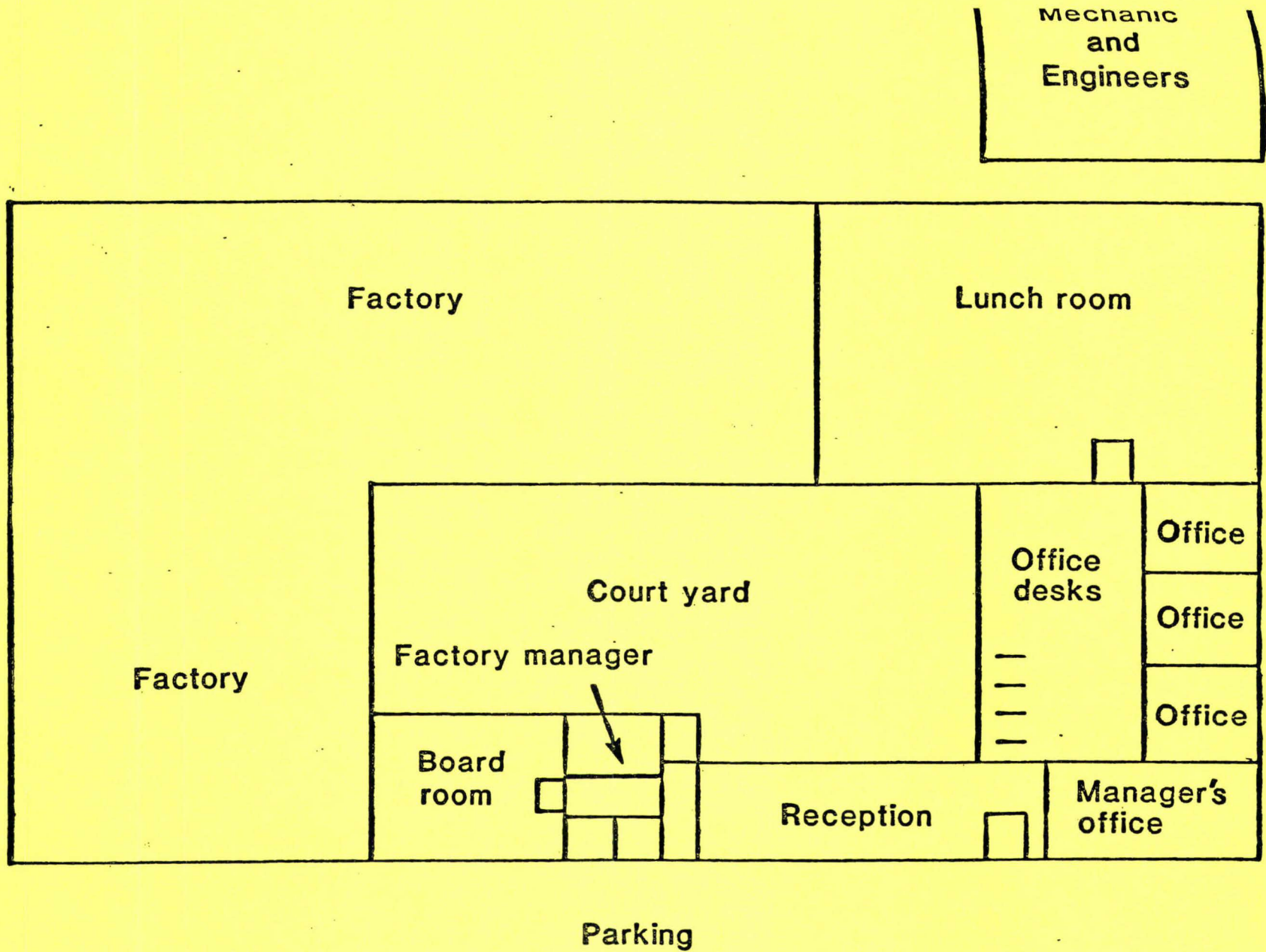


Figure 9.1 Floor plan, company D.

the Company would cover costs incurred during the programme. He took this nurse on a tour through the factory and pointed out which rooms could be used for interviews and films.

The manager stated the Health Department had done hearing tests for some, but not all employees. He felt there could be quite a number of employees with hearing loss.

Topics such as occupational hazards in the factory and the possibility of doing pre-employment medicals were discussed (employee application forms have a medical section included). The possible reaction of the union to a nurse on the premises was also raised as well as the logistics of record keeping and the importance of confidentiality. Salmonella testing for all employees and a change to employee information sheets were also considered.

Commencement of Health and Safety Programme

An introductory letter (Appendix VI) to the employees was constructed and distributed with pay packets and the sample health record was reviewed. Methods of evaluation for the programme were discussed and its proposed continuance after completion of the project. The company profile was filled out at this time on the form shown in Appendix VII.

The author returned to the company on 6 April to commence individual employee interviews. Confidentiality was stressed and a list of possible subjects for health education was presented to the employee following the interview. He/she was to choose which topics were of interest (Appendix IX). 30 initial interviews (70%) were completed, ten employees (23%) refused an interview and three (7%) were not available.

The personal physician of Company D manager was also consulted, at the manager's suggestion to act as a resource person for this nurse. The physician readily agreed to act as a consultant and a meeting was set up. It was decided the nurse could refer a patient to him if that patient had no personal physician. He didn't think it ethical to see a client, even if injured at the company, if that person already had a general practitioner. But this nurse could ring him if there were any problems or questions. The privilege was utilized several times, as well as one patient being referred.

ASSESSMENT OF HEALTH NEEDS

From the 30 individual interviews conducted at Company D, certain health needs were identified.

Hazards in the company include the following:

- . noise
- . lifting
- . hypothermia in freezers
and frostbite
- . caustic soda used to clean
soiled milk bottles
- . chlorides for sanitizing

The health programme would include these educational areas.

Individual Assessments

Each employee was interviewed separately. Similar data was collected as in each of the other factories on the health form found in Appendix IX.

Cancer Prevention

Two women had not had cervical smears within the past two years and four women did not perform monthly breast examinations. The reasons the two women gave for not having cervical smears were as follows:

- . too expensive
- . did not want to take off work

- . did not know I should have one,
the doctor never told me

The women did not do breast examinations for the following reasons:

- . breasts are so lumpy anyway
- . couldn't be bothered
- . didn't know how
- . didn't know to do it every month

One to one counselling was done at the time of the interview, stressing the importance of one to two yearly cervical smears and self-breast examination. This topic was selected as a future lecture subject.

Cancer prevention for males was not included unless there was a history of cancer in the immediate family. Then the seven signs of cancer were reviewed with the employee and he/she was asked if he/she had any of these symptoms. Otherwise this nurse knew of no tests a male could perform to check for cancer except scrotal examination.

General Health Care

Three employees (10%) were found not to have kept their tetanus boosters up to date. These people were counselled on the importance of this and advised where to obtain injections for tetanus immunization. Diabetic testing with BM sticks was also done and negative results obtained for all employees.

Thirteen people (43%) had not visited their dentist in the past year and 17 (57%) had not seen the optometrist within five years. Employees were counselled in these areas, to visit the dentist annually and have their eyes examined every five years unless certain problems called for more frequent visits.

Four employees (13%) had not visited their general practitioner within the last two years and two did not have doctors. The reasons for not visiting were as follows:

- . too expensive
- . didn't need one
- . they just give out pills anyway
- . don't want to take off work

Two people stated they had no doctor because

- . had never needed one and
- . had just moved into town and hadn't found a new one yet.

One person had high blood pressure, according to the Heart Foundation guidelines (151/101, 141/89, 191/93 for three consecutive times). Two people had borderline high blood pressure at 129/91 and 150/91 respectively. The person with high blood pressure was referred to his doctor, received further tests, lost weight, was put onto medication and was advised to have regular blood pressure checks.

Diet and Exercise

Eleven employees (37%) were overweight, five (17%) had poor dietary habits and 16 (53%) did not get regular exercise. Counselling was given in each area as necessary and appropriate articles and pamphlets handed out. 12 (40%) drank more than four cups of coffee or tea per day. One of these presented with symptoms of insomnia and another person had heart palpitations and irritability. They were counselled about the effects of caffeine on the human body.

Stress

Five employees (17%) demonstrated stress related symptoms. Three of these people are in management positions. They tended to be over-worked due to factory reorganisation and at times took their work home with them. The other two people were exhibiting symptoms of stress due to personal problems. All five people were counselled in some or all of the following areas:

- . time management
- . delegation of work
- . weight loss
- . more exercise
- . recognising stress
- . different coping methods
- . relaxation techniques.

Other Areas of Counselling

Counselling at the initial employee interview covered many other areas as set out in Table 9.1.

Table 9.1: Areas of Counselling in the Initial Interview

| Occupational | Sporting | Family | Personal |
|--|-----------------------------------|-------------------------|--------------------------|
| Back injury prevention | Warming up exercises | Glaucoma | Drug addiction |
| Hearing protection | Concussion | Hygiene for adolescents | Depression |
| Prevention of injury by chemical solutions | Other sports injuries & treatment | | Diabetes |
| | | | Heart disease prevention |
| | | | "Tapanui flu" |
| | | | Anger |
| | | | Dental hygiene |
| | | | Anorexia nervosa |
| | | | Motivation |

PROGRAMME PLANNING

The planning of this programme is based on an assessment of the company profile, the assessment of individuals during the initial interviews and those topics in which employees expressed an interest. A list of these topics is found in Appendix XIX. The nurse added hazards in the workplace to this list. In particular she planned to test the hearing of all employees, because of the noisy environment. The Health Department had done the testing last year but some people were absent from work at the time. The proposed health programme can be found in Appendix XX.

ORGANISATION AND IMPLEMENTATION OF THE OCCUPATIONAL HEALTH PROGRAMME

Many more hours were involved in the organisation of the occupational health programme for Company D than in the actual implementation of the programme, as was true in the other two companies. Changes in the original proposed programme were in part due to difficulties in implementing the health education section of the programme as employee interest fluctuated.

The occupational health programme planned for Company D extended over seven months. A summary of the nurse's activities is set out in Table 9.2. The full schedule may be found in Appendix XXI.

Table 9.2: SUMMARY OF ORGANISATION AND IMPLEMENTATION OF OCCUPATIONAL HEALTH PROGRAMME

| | |
|----------------------|---|
| <u>27 March:</u> | Company profile completed |
| <u>6 April:</u> | Employee assessments commenced. Met with physician regarding consultations Arranged to borrow audiometry machine from Post Office nurse |
| <u>7 April:</u> | Met with Health Department occupational health nurse to discuss educational plans |
| <u>10 April:</u> | Visited Health Department to collect pamphlets and met with Educational Officer, Factory |
| <u>23 April-</u> | Inspector and Hearing Visual Tester. Also met |
| <u>29 April:</u> | with Accident Compensation Corporation Safety Officer and collected posters and brochures. Arranged Red Cross classes Interviews completed. |
| <u>2 May-9 June:</u> | Wrote out health programme and obtained approval from manager. Collected slides and projector for hearing conservation and previewed slides. |
| <u>9 June:</u> | Aids video shown. |
| <u>10 June:</u> | Attended Health & Safety seminar at Company's expense. |
| <u>19 June:</u> | Hearing tests commenced. |
| <u>19 June -</u> | Hearing conservation slides shown. |
| <u>31 July:</u> | Research on stress management course done. Attended A.C.C. Seminar in Wellington at Company's Expense. Back injury prevention video shown. |
| <u>24 August:</u> | First aid films shown |
| <u>6 October:</u> | Evaluation questionnaires distributed |

DISCUSSION AND EVALUATION

All five aspects of programme evaluation are considered. That is:

- . relevance
- . progress
- . efficiency
- . effectiveness
- . impact

(Veney and Kaluzny, 1984)

Data from questionnaire results are used to substantiate evaluation comments. 43 questionnaires (Appendix XIII) were dispensed with pay packets to the employees of Company D, in October 1987. These questionnaires were pre-tested on 973 people during the Occupational Health Pilot Programme in Christchurch. This programme was implemented by the Health Department in February 1985 and continues until 1988. Slight modifications to the questionnaires were made by this nurse. Eight (18%) of the questionnaires were returned plus one from management (Appendix XIV) which was a modified version of the employee form.

Relevance of the Occupational Health Programme

This occupational health programme addressed certain problems within the individual, the company itself and relevant problems in society today. As discussed earlier, one to one counselling was given as necessary to the employee. Within the company, the profile showed a noise hazard and lifting hazards. These were addressed in the programme, as few people were wearing hearing

protection. Accident Compensation Corporation (A.C.C.) showed a significant amount of back injuries for Company D. This is being investigated by A.C.C. since the company does not have records of all these injuries.

There were no qualified first aiders at Company D at the time of the programme, although one has now been appointed. According to the Factories and Commercial Premises Act, a first aider is not required unless 50 people are employed on the premises at one time. The company and this nurse felt that since the factory is located in the country, some way from the hospital, it would be beneficial to have at least one trained first aider on each shift. The first aider acts in liaison with the nurse, whether the nurse be privately employed or a Public Health nurse. A large number of employees stated during the one to one interviews that they would like information regarding first aid (Appendix XIX). Therefore, first aid classes consisting of four lectures was arranged with Red Cross. They would send one lecturer out to the company for the first two sessions and two lecturers for the last two sessions which would include CPR training.

Information regarding food handling was included in the planned programme because of the main type of work at the factory. A film concerning safety in the workplace was planned because of continuous minor accidents at Company D involving cuts with broken bottles. A stress management course was constructed because stress seemed to be an immediate problem at Company D due to reorganisation.

Some of the issues in society today which the occupational health programme was aimed at were AIDS, womens' health, information from general practitioners and skin cancer prevention. It was apparent from questionnaire results that Company D employees wanted mainly work-related health education (67%) and could not see the relevance of other health matters being discussed.

They also still viewed the nurse as a first aider since 44% wanted some care of general ailments and injuries. Parts of the programme thought to be of most benefit by the employees and management were:

- . back injury prevention
- . work place topics
- . hearing tests
- . audio segments
- . lectures on health and safety
- . collaboration with management on the A.C.C.

Rating System

The part of the programme thought to be of least benefit was the AIDS information.

Progress of the Programme

The entire occupational health programme which was planned (Appendix XX) for company D, was not actually implemented (Appendix XXI). The reasons for this are as follows:

- . lack of interest by employees
- . reorganisation of the company which consequently put management under stress making them too busy to participate in certain aspects of the programme
- . numerous machinery breakdowns,

The first aid classes were cancelled in May by the manager because only a few people showed up at the first lecture due to machinery breakdowns. After missing one or two classes, a person could not catch up. These four classes which were cancelled took a large chunk out of the programme.

After arranging a speaker from the "Men for Non-Violence" group to visit Company D, the manager decided that this type of lecture would be too much out of the ordinary, away from health matters. He felt the employees would be rude and not pay attention as had happened in a previous talk by a guest speaker. Therefore, the lecture was cancelled.

The women's health classes were cancelled because the women at Company D could not decide on what topics they would all be interested in. The supervisor (a woman) also stated she didn't

know how many would attend, depending on machinery breakdown.

The Stress Management Course was cancelled because only four people were interested. An invitation was extended to other companies, but they declined. This was after material for the course was obtained by this nurse and after another nurse tutor was consulted to help run the course.

Employee questionnaire results showed very few life-style changes had been made and little change in factory conditions. Therefore expected outcomes of the programme were not being produced. On the other hand, 56% of the employees would have liked the programme to have been longer and a few people wanted this nurse to visit more frequently. This was also illustrated in the responses from 67% of those who completed the final evaluation stating that the amount of time spent by the nurse at Company D was not long enough to develop a trust relationship with her. 67% felt this nurse offered a professional and efficient service. The programme would have been longer with more frequent visits if there was more employee interest.

89% felt the occupational health programme was worthwhile. Although only nine questionnaires were returned, this percentage encourages this nurse to think introducing the programme was of some benefit despite everything. Perhaps under different circumstances and at a different time, the same type of programme can be a success. 56% of the employees who returned questionnaires would like to see the company continue the

occupational health service.

Management feels health and safety motivation needs ongoing input from a health service. The idea of contracting a nurse for occupational health and safety is a feasible one. Four hours per week was suggested by management at a rate of \$30/hour. Management also felt that a regular occupational health service, instead of the temporary one which was offered would be more beneficial.

Following little enthusiasm from employees during the first aid filming session, the rest of the year's health programme was cancelled.

Efficiency of the Programme

Programme results could not be obtained less expensively because this nurse's services were free of charge. This is not an accurate evaluation of efficiency. Some of the benefits of the programme may be seen at a later date because the new safety programme has not yet been completely implemented.

Certain medical problems were discovered in a few individuals who otherwise may not have known about them. This could be of benefit to the company by preventing time off work for illness. Employees also have become more aware of using hearing protection and of lifting properly, therefore, the Company could save money by preventing A.C.C. payouts. The following table illustrates the costs incurred by Company D during this occupational health

programme.

Table 9.3: Expenditure on Occupational Health Programme
(Company D)

| ITEM | COST |
|---------------------------------------|----------|
| First aid class (session one) | \$32.00 |
| Family Planning Officer | 12.50 |
| Video hire | 77.00 |
| Slide projector hire | 15.00 |
| Stationary (approx.) | 25.00 |
| Employers Federation Seminar | 90.00 |
| A.C.C. Seminar | 60.00 |
| Nurse's bus fare to Wellington return | 25.00 |
| Nurse's meal | 10.00 |
| Petrol reimbursement | 255.90 |
| | ----- |
| Total | \$602.40 |

In order to compile an accurate cost-benefit analysis, the occupational health programme would need to be operating for at least one year. The money saved would be illustrated by subtracting costs of the programme from money gained through less

accidents, less time off for illness and doctor's visits, possible increased production and higher quality due to a healthier workforce. Since programme spending was minimal for the company and this nurse, it can be surmised that programme benefits will eventually be sufficient for the cost incurred.

Effectiveness of the Programme

The pre-determined objectives for Company D, as discussed with the manager before programme planning were:

- . increase understanding of occupational health and safety
- . dispense information on current health issues
- . encourage healthy life-style changes
- . identify work-related problems and implement changes where needed
- . consider on-going health services for the company.

Since only 18% of the questionnaires were returned by employees, it is difficult to ascertain whether or not the aforementioned objectives have been fully met.

89% of the employees who did return questionnaires felt their understanding of the aims of occupational health had been increased. This is a satisfactory result since it meets one of the objectives.

The author feels that some information was dispensed on current health issues, but since the programme was discontinued early, other issues weren't highlighted therefore this objective was not fully met.

22% stated they made life-style changes, felt the nurse identified work-related problems and that changes had been implemented in the factory, therefore these objectives were not fully met. The author did identify a number of work-related problems which some of the employees were not aware of. They are as follows:

- . noise
- . lifting
- . handling of hazardous chemicals
- . housekeeping (factory)
- . stress
- . large number of minor accidents
- . ergonomic problems
- . lack of first aiders
- . occasional excessive exposure to heat and cold.

The author also feels that a major change has been partially implemented at Company D, the organisation of the Five Star Rating System. This system is based on management's commitment to health and safety with a written philosophy, objectives and a check list of present methods of dealing with health and safety issues. A.C.C. has been consulted and has met with management

regarding the progress of the system. A safety committee has been set up which meets monthly. Due to the state of reorganisation of Company D, the safety programme is not progressing as quickly as was planned, but a firm basis has been established at this stage.

The author was not satisfied with the effects of programme activities and the need to cut it short. It is difficult to evaluate satisfaction of programme beneficiaries since just 18% of the questionnaires were returned. At present, things do not appear better at Company D as a result of this occupational health programme, but it is hoped the outlook will change when the safety system is fully implemented.

Impact of the Occupational Health Programme

It was not possible to evaluate the occupational health programme in regard to impact since all of the segments could not be implemented. Also the total length of time the nurse was involved was only seven months. In addition, there were not enough questionnaires returned for appropriate impact evaluation.

78% of employees stated that changes had not been implemented in the factory as a result of this programme. Only a few people said changes had been made, which were:

- . more care when lifting
- . general safety awareness
among staff

. appreciation by staff of
company concern

This implies that the programme was not running long enough or perhaps was not intense and dynamic enough to bring about much change.

Conclusion

In conclusion it is felt that through the author visiting Company D and the Company's initiative in sending the nurse to safety and health seminars, that the safety system which the nurse helped construct will have a long term impact on the health and safety of employees. In the author's opinion the entire programme was not a complete failure because people have been made aware of occupational health and management is enthusiastic about a continuing service.

CHAPTER 10

A COMMENTARY ON THE PROJECT

Why Independent Nursing Practice in New Zealand?

Dissatisfaction with the long established methods of health care delivery has now reached a peak. The climate is right for the development of the independent nurse practitioner. Examples of comments often made by users of the health care system are:

- . doctors are too expensive
- doctors do not always give enough information to clients
- . doctors do not always have much time to spend with clients
- . occasionally non-English speaking people and women are intimidated
- . there is a dissatisfaction with a medically orientated system
- . clients have a right to choose their type of health care.

According to the news media, the allocation of money to the Health Department has decreased, therefore there has been no increase of staff to cover community areas, especially occupational health.

Independent practice appeals to nurses who are dissatisfied within bureaucratic organisations. These nurses find no reward for attainment of higher education and creativity as they are not given enough responsibility in decision making. Inflexible working hours make it difficult for the nurse to have a satisfying family and social life. The nurse's wide range of skills and education are not utilised to capacity (the expanded role).

Is There a Special Need in Occupational Health?

Large companies have the money to hire and sufficient numbers of employees to warrant hiring their own occupational health nurses.

The needs of smaller enterprises, which also require health services differ from larger ones:

- . 92% of industries in New Zealand employ fewer than 20 people
- . small industries account for 55% of the private sector workforce
- . have limited financial resources, therefore would probably not hire a nurse
- . inferior environmental conditions and greater chemical exposure
- . inferior inspections.

From the Report of the Department of Labour for the year ending 31 March 1986 there were 382,568 employees in New Zealand. By maintaining a healthy workforce, a proportion of the

aforementioned figure may be kept out of the illness services, thus saving government spending on the treatment section of health services.

Meeting the Needs of Smaller Firms

Glass (1984) quotes Garland who states that the objective of an occupational health service is to alter conditions and practices so that work becomes healthier and safer. One of the ways to meet this objective was voiced at the Occupational Health Conference in Colombo, 1981. That is, that the first aider should act as the primary care giver in a factory with the nurse as liaison officer between first aider and community resources. Every small Company would need to train at least one first aider.

New Zealand tries to meet the needs of small industries through occupational health clinics run by the Department of Health and through visiting occupational health nurses. The problem is that there are too few clinics and too few nurses. Private enterprise seems a feasible option under these circumstances.

THIS OCCUPATIONAL HEALTH PROJECT

This occupational health project involved participation by three small companies in the Palmerston North, Terrace End area. The services of an experienced occupational health nurse were offered. She planned and implemented three separate health and safety programmes in the factories according to the assessable needs of employees.

Following completion of the programmes, data was collected using questionnaires as tools. Evaluation was achieved by analysing questionnaire results. The conclusions reached are as follow;

- . the programmes were rated as "worthwhile" in two out of three companies
- . all employees and management staff became familiar with the aims of occupational health
- . very few life-styles were changed as a result of the programmes
- . more group health education (work-related) was requested
- . the programme time was sufficient
- . an efficient and professional service was offered
- . Cardio-pulmonary Resuscitation was the most beneficial segment of the programme
- . employees would like the occupational health service extended
- . one company wants to continue the service

This nurse author feels all three programmes were worthwhile. The knowledge and experience gained offset the frustrations and limitations of the project.

Frustrations of the Project

Frustrations are involved in any project and this occupational health programme is no exception. One of the main frustrations was not having personal equipment to use for the factories, such as an audiometry machine, video set, movie and slide projectors. This equipment had to be hired and borrowed from the University, which meant extra travel and time.

Some employees were not at work during a scheduled session because of days off or because they were out on joinery jobs. This was frustrating when part of the programme was implemented and people could not take part. If the nurse had been informed ahead of time, programmes could have been rescheduled. This also wastes time and energy.

In general, there was not a full commitment to occupational health by management and staff. Some did not participate. In a small business, this is easily noted by employees. The fact that two companies do not want to continue the health service verifies this.

The state of reorganisation of one company was frustrating because they could not put enough time into implementing the safety programme which was being developed by the nurse. There was a clear recognition of the importance of a satisfactory programme but management had neither the time, nor the staff to implement it. The contracts were for unpaid services by the

nurse, but the need for paid employment later in the year took time away from the project. The time limitations companies would allow for programmes was frustrating because they would have to be presented at lunchtime. Employees occasionally resented this and sometimes went home for lunch so they missed the programme.

Programme cancellation, after arranging resource people and material was also energy and time wasted. This only happened at the dairy company and was quite frustrating. It contributed to the early finish of the programme.

Limitations of Programme

Among the limitations of this programme was the necessary rapid progression as the nurse tried to fit everything into eight months. Under ordinary circumstances, a nurse in private practice would be able to space programme segments evenly throughout the year. Also connected to the fact that the programme was part of a university project was the time taken for collection of data, analysing it and writing a report which took away from the project itself.

As this nurse was not paid for services, there probably was not as much commitment by her as otherwise would have been. She would have visited more regularly and possibly persevered longer with a monetary incentive.

Another limitation was in not having a clinic to work from and in not having an appropriate quiet area for hearing tests. Facilities for presenting the programme were not adequate in two factories. Although some employees felt the nurse spent enough time at the factories to develop trust and friendship, this nurse does not agree. Possibly a year of regular contact is necessary. This aspect is very important in any nurse-client relationship. A questionnaire constructed by this nurse and pre-tested on four other nurses was used for a self-evaluation of the total project (Appendix XXII).

Knowledge Gained From the Project

One of the ways knowledge was gained from this project was through the process of constructing a business plan as part of a requirement for a business studies paper. The business plan was based on purchasing a caravan to be stocked as a clinic (Appendix XXIII). Direct costs and overheads were estimated and subtracted from assumed income (Appendix XXIV). Income was estimated by setting a health service charge of \$40 per hour, by visiting seven companies and spending four hours per week in each - a total of 28 hours per week and \$1120 income. A budget and financial projections were calculated for a three year period. The first year's profit amounted to \$9876 and increased in the second and third years. This shows the independent occupational health nurse business plan is viable.

Conclusion

The knowledge that a better health service for industries is needed is supported by the figures discussed in Chapter 5. There are 24,139 registered and unregistered factories in New Zealand employing 363,228 people (Department of Labour; 1984-5). With only 315 occupational health nurses, there are many people not receiving a health service at work.

The project experience has helped this nurse make a decision regarding independent practice in occupational health and whether or not she will start her own business. At present, with economic conditions in a down-turn the answer is negative.

Although the author will not start a business at this stage, much knowledge has been gained regarding organising a health plan for more than one company. More time and energy were expended in organising and planning of the programmes than the implementing of them. The nurse in her/his own business must be willing to spend this time away from family and social events. Differences were also highlighted between being a mobile nurse and working for one company with a clinic.

The experience has also shown that people are generally interested in information regarding their own health care, but do not always act upon direction given. Completing their job, receiving pay and then going home also appeared a priority with many of the dairy employees. They did not appreciate anything which would disturb this routine.

Finally, the author found that operating as a mobile nurse for small firms involved working closer with management than if employed by one large firm. Figure 10.1 illustrates approximate percentages of time necessary in managing the occupational health service.

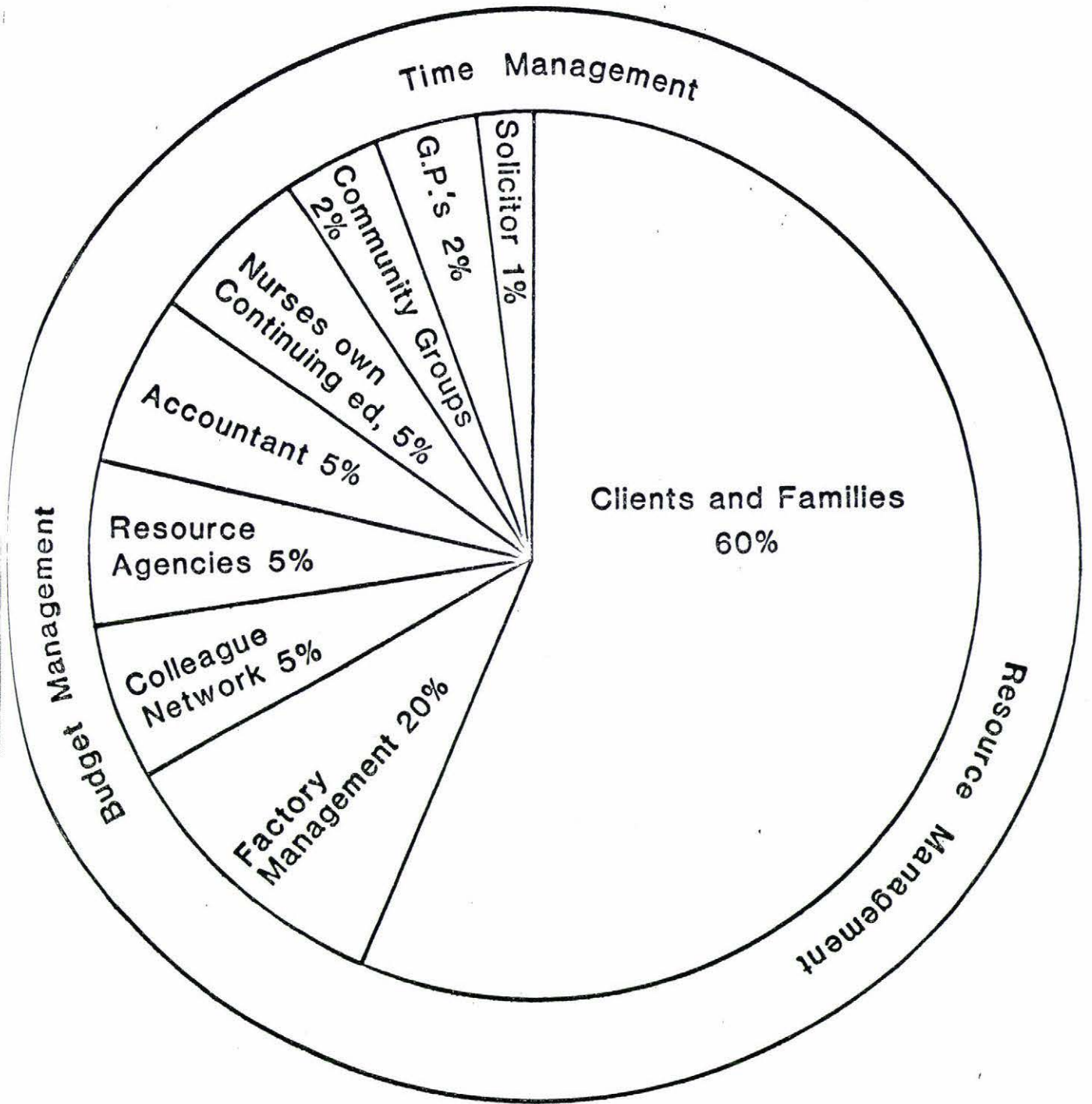


Figure 10.1 Percentage of nurse's time.

CHAPTER 11
THE OCCUPATIONAL HEALTH NURSE IN
INDEPENDENT PRACTICE

Future directions for the independent nurse practitioner in occupational health are set out in this chapter together with advice on setting up in independent practice. The chapter ends with a list of important points for the prospective nurse entrepreneur.

Getting Started

The two most important aspects to consider before starting in independent practice are the realistic assessment of one's own capabilities and the development of a business plan. The nurse must also consider acquiring the services of a physician for consultation.

Figure 11.1 shows the steps involved in getting started, how the nursing process is applied and how resources interact with each other, the clients and the independent practice. There is a continuous process of evaluation going on.

Westpac Bank and Development Finance Corporation both offer guides to starting in private business. The nurse considering private practice would be wise to obtain one of these books and go through it systematically.

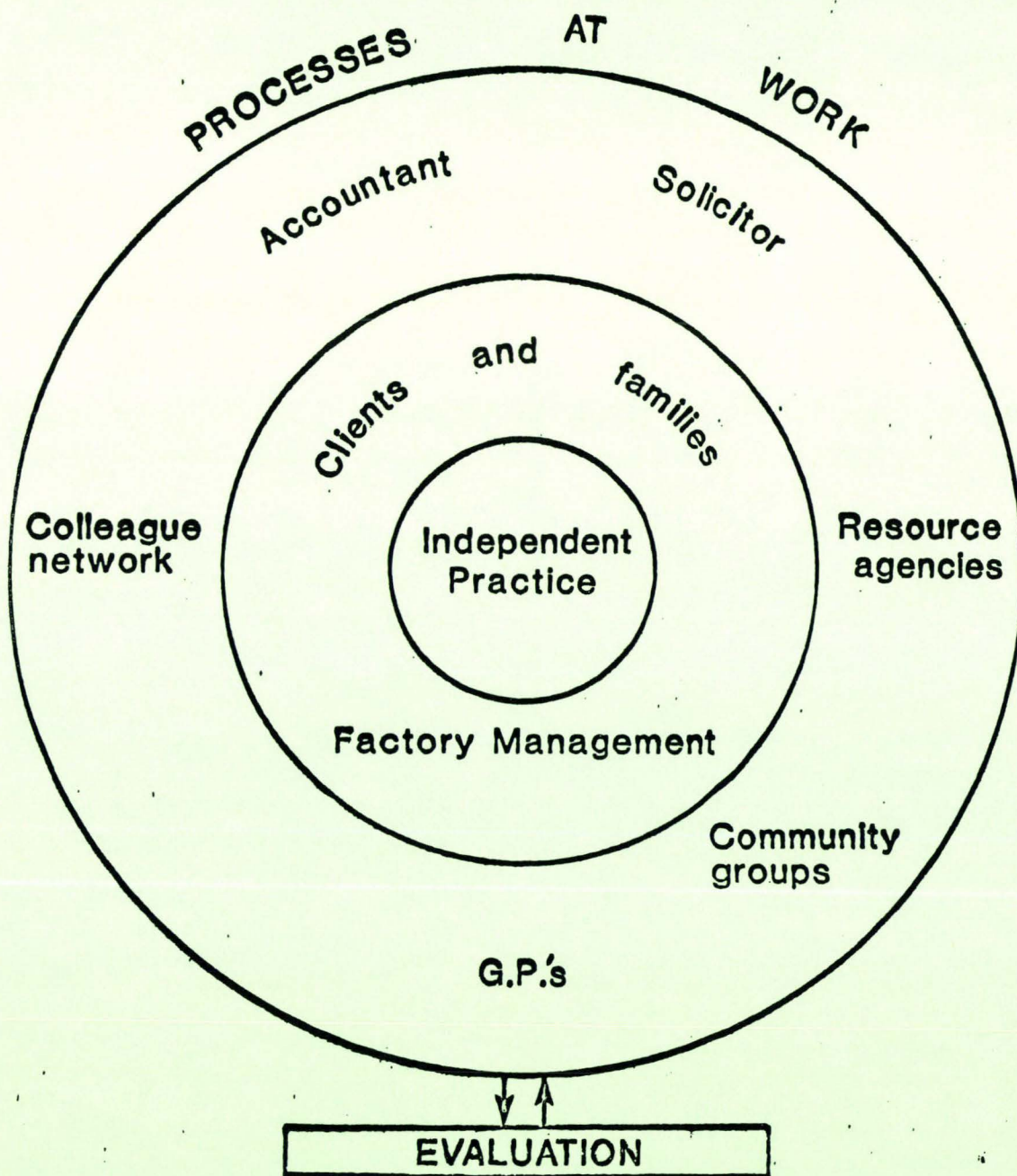
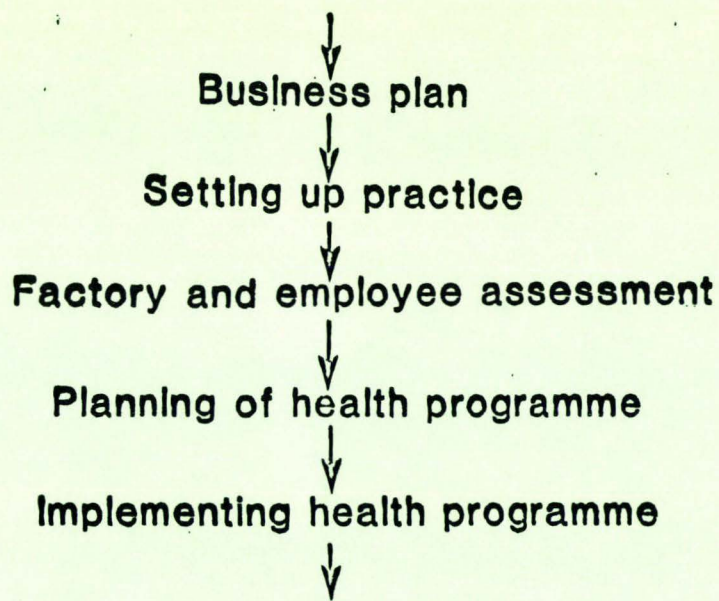


FIGURE 11.1 INDEPENDENT PRACTICE MODEL

The business plan includes self-assessment for the entrepreneur. It is very important to realize strengths and weaknesses in oneself and how private practice and setting up a business could affect family relationships. Assess the risks which would be taken. It is essential to research the market. Any successful business person finds out what consumers want and need and then offers services to meet those wants and needs.

Analyzing the competition in the area is also an important aspect of starting a new business. Find out who the competition is and where it is located. Also what competitive advantages you have over the competition. Ask what advantage does the competition have over you? How do you intend maintaining a competitive advantage in your market area? Is it a physicians - only market? What types of alternative delivery systems exist?

Professional Services

It is important to acquire the appropriate professional help when starting a business. Accountants help with the setting of charges, billing and tax factors. Lawyers may help to draw up contracts and assist with laws and regulations. Development Finance Corporation can also give advice on starting a business.

Attending a class on business management would be worthwhile. There are many hidden aspects to running a business which a manager may overlook and consequently end up losing the business because of these factors. Some of these include cash flow analysis and setting enough aside to pay taxes. There are no taxes the first year, but they triple the second year.

Financial Considerations

Costing is another important factor. How much will it cost? Where will the money come from? Can enough money be made to pay yourself a reasonable salary which you and your family can exist on? Can you afford to not make a profit the first year? Where will extra capital come from in an emergency?

One often neglected area is the development of a relationship with a bank. Initiate contact while you are considered a good financial risk, that is, while employed full-time. Establish a line of credit to facilitate loan applications. How can you select and meet the most appropriate bankers? Friends or colleagues may direct you to bankers who support entrepreneurial ventures and have good financial track records. Women's networks can also offer referrals. Professionals who have recently opened businesses in law, accounting or insurance may also offer helpful ideas. Your relationship with your bank manager could be the most important aspect of your business venture. He/she may offer advice and guidance as well as approve a loan.

Networking

Networking is essential for the success of a business. This is the process of making contacts professionally and socially. The public and other health professionals must become aware of your expertise and availability. Visit the Health Department and doctors in the area and let them know what you're planning.

What Form Should the Business Take?

There are four possibilities of form a business may take. They are sole traders, partnerships, a limited company or a corporation. A sole trader is usually preferable for a family business or for one person in business. A partnership explains itself. A limited company involves 2-25 people and a corporation has shareholders. A sole trader is liable for any debts the company may incur and personal assets could be taken as payment. With a limited company, at least one other person must have invested in it, even if they only pay one dollar. In the past, personal assets could not be taken as payment for debts, only company assets. This law has now changed allowing personal assets to be jeopardized. The corporation exists by money from persons holding shares in the organisation.

Tax Factors

New businesses do not pay taxes on profits the first year they are operating. You are charged the usual personal tax on your earnings at the end of the year and this should be saved from the salary you pay yourself throughout the year.

The second year provisional taxes must be paid. This is figured by taking 45% of profits from the first year and adding an estimated same for the second years profits. The provisional tax is paid in three installments on September 7, November 7 and March 7. One third must be paid in the first installment.

Many businesses have failed because owners don't allow enough money for taxes. The second year, three taxes are to be paid. They are the first years tax (PAYE) and two provisional taxes.

In a sole trader business and partnership the owner is only taxed once, on personal income. But in a limited company or corporation double taxes are paid. This includes a tax on salary and a tax on dividends which is in fact double tax.

Location and Office Planning

While the cost of office space, if an office will be used, is an important factor in selecting a location, cost alone should not determine site selection. Choice of location should also be based on expected client volume and desired proximity to other providers and support services. Office location considerations include proximity to patients homes or work locations, ease of building access, parking availability and access to other nearby services, such as physicians and pharmacy. Competitive factors may also figure in the site selection, and practitioners should assess the number and type of existing health services in locations under consideration.

Once the general location has been determined, the decision whether to lease space in a new or older building may arise. Both situations have their advantages and disadvantages. Leasing space in a new building is generally more expensive than in an older building. However a new office can offer more flexibility in suite design and maybe more concessions in tenant improvement

allowances. An existing suite may offer the opportunity for faster occupancy, but remodelling expenses may be high. Elements of an outpatient suite are described in appendix XXV.

After location and type of clinic has been decided upon, supplies, equipment and materials must be purchased from the supply company which offers the best price, discount, delivery and payment allowances.

Marketing

Before opening of the clinic or mobile health services, advertising should take place. An advertisement could be placed in community papers, free of charge or in the evening paper for a small fee. Approach the community editorial paper writers to interview you for a story on your new enterprise. Try to attend safety and health seminars and other meetings to spread the word of your service by speaking to others. Design some posters to hang on store fronts. Enquire about radio and TV ads and the advertisement section at the theatres.

Dickerson & Nash (1985) began promoting their wellness clinic by making personal appearances. They spoke often to community service organisations and showed a slide/tape presentation about the practice. They ran a discrete professional advertisement in a weekly newspaper and had an attractive Yellow Pages listing in the telephone book. Most clients came to them by word-of-mouth referrals. They also received referrals from other providers.

As mentioned earlier, networking among nurses is essential, and it is very possible one nurse might refer to another who she/he knows is a specialist in some area.

Fees

The services of an accountant can be most helpful when setting fees-for-service. The occupational health nurse who contracts her/his services to a company would be able to charge a higher rate than a practice nurse seeing individual patients. The hourly rate must take into account the extras a nurse would be paid while employed by a hospital. These are uniforms, shoes, holiday and sick pay. The fee must also be enough to cover petrol costs, insurance, and all overheads.

The nurse seeing clients individually in a clinic situation may charge \$8-10 per visit. Visits may last 10 minutes or longer, therefore if the nurse saw six clients per hour, she/he would be making \$48-60/per hour. It must be emphasised that since third-party reimbursement is not practical for visits to nurses, it may not benefit the client financially to visit a nurse instead of a physician unless the nurse keeps her/his rates reasonably low. It still would be beneficial for the client to submit a claim form to his/her insurance company with the nurse's visit on it, if just to let the companies know what nurses are doing. The same is also true in regard to Accident Compensation Corporation. The nurse should apply for reimbursement when treating accidents.

Contracts

The purpose of a contract is to clearly state the expectations of both parties. Whether you plan to work with someone or for someone, a contract is strongly recommended. The contract addresses the responsibilities of the partners to the practice, to each other and if in occupational health, the responsibilities of nurse to management and vice versa.

The contract should include vacation and sick time, fees, hours and days of work, expenses and dissolution of the contract. Out of necessity, a lawyer will usually be required to draw up the contract. Most lawyers are not used to dealing with nurses who are business-minded and most nurses are not used to dealing with lawyers. It usually pays to shop around for an appropriate lawyer. Before making an appointment it is essential to know the usual fee. The lawyer who charges over \$100 per hour is not the appropriate choice, because he is usually established and successful and will not consider a nursing practice to be very important. The best choice is a young lawyer who will consider a nursing business an adventure and who may also be the most economical. The same applies when choosing an accountant.

Regardless of the lawyer chosen, however, it is essential to arrive at the first meeting with a clear idea of what should be included in the contract. Otherwise much time and money will be wasted and the contract may not be appropriate for the particular practice. It is helpful to keep in mind the fact that the lawyer will usually have no frame of reference for nursing practice and will rely on the nurses for that information.

Profit: Slow but Sure

Any private practice tends to start slowly. One way to ease into the situation is to develop a support system prior to beginning the practice. A preliminary referral system can be established by consulting with nurses and physicians practicing in the appropriate specialties within the community. The larger the number of physicians and nurses who are supportive of the new practice, the better the chance for success. Thus the importance of publications cannot be denied: it is essential to project oneself not only as an expert practitioner, but also as a friendly, considerate, intelligent individual.

Sizable profits usually take a year to be realised unless a nurse is working on her/his own with little overheads. It may be useful to hold secondary employment, while getting the business on its feet, just for some extra income.

THE REQUIREMENTS FOR SUCCESS

General Factors

In order for nurses to be successful in independent practice, changes must be made in government policies and legislation governing health services. These include:

- . the recognition, by the Accident Compensation Corporation that the nurse practitioner is a care giver who should receive reimbursement for services rendered. This is the type of policy followed in some states in the U.S.A.
- . the passing of legislation to enable nurses to prescribe specified medications and order diagnostic tests.
- . the provision by the New Zealand Government of a partial subsidy to independent nurse practitioners (in a few cases this does now occur).

In addition, the independent nurse practitioner should be seen as a colleague of the physician, each working in a complementary way to the other and not in competition. To facilitate this, an educational campaign should be launched to inform general practitioners, other medical personnel, legislators and the general public about the contribution which the nurse entrepreneur can make to the health of people in New Zealand.

An Independent Nurse practitioner's Association should be developed to act as a resource centre, set and monitor standards and initiate research.

Specific Aspects

Some of the comments made here could apply to nurses in general who would like to start in private practice. However, this discussion focuses primarily on the occupational health nurse in independent practice.

The first step in planning a business carefully is to complete a business plan which may be obtained from Westpac Bank, Development Finance Corporation or Bennet's Book Store, Palmerston North.

It is important to acquire the appropriate professional help when starting a business. An accountant and lawyer who are in a small practice, as opposed to a large firm, may offer a more personal touch. The nurse should know everything concerning his/her own business to be sure accountants and lawyers are not making mistakes.

When the nurse considers independent practice she/he must weigh the time involved against time necessary for family and friends. Expectations must also be realistic in that there may be disappointments, set backs and cancellations of contracts.

Costing, networking and the wording of a contract are all important factors in starting a successful business. In addition, the occupational health nurses should arrange a probationary period with a company before signing a year's contract for occupational health services. It is also important to develop a rapport with management, as well as employees, for a successful working relationship.

Finally, occupational health nurses intending to practice independently in their own business should become experts in the field of small business management for the following reasons:

- . to maintain a thriving business as competition becomes greater among independent health service practitioners from a variety of professional backgrounds
- . to maintain the high standards of the profession
- . to gain confidence
- . to remain in business for the sake of their creditors and customers who would be directly affected by their failure
- . to be a success.

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A P P E N D I C E S

APPENDIX I

COUNCIL FOR OCCUPATIONAL SAFETY, HEALTH AND WELFARE

A council has been set up within the Department of Labour to deal with occupational safety, health and welfare issues. Matters under action as of 1986 as stated in the Department of Labour Report (1986) were as follows:

1. The council has arranged for the preparation of an information paper setting out the present organisation of occupational safety and health administration in New Zealand. Once completed, copies of the paper will be made available to interested parties.
2. The representatives of the Employers' Federation, the Federation of Labour and the Combined State Unions have presented to the council a discussion paper for the rationalisation of the legislation and administration of occupational safety and health in New Zealand. This matter will form a major part of the council's work in 1986-7.
3. The council is considering a proposal involving the introduction of regulations under the Factories' and Commercial Premises Act 1981 to provide for workers' safety and health representatives and joint worker/management safety and health committees. A working party set up by the

council to consider the matter held six meetings during the year and made considerable progress on developing a draft code of practice and draft regulations. It is expected the council will be able to present a firm proposal to the Government later in 1986.

4. The council set up a committee to develop proposals for assessment of hazards in the planning, commissioning and operation of major industries. This is particularly topical because of the continuing concern arising from a number of incidents that have occurred both in New Zealand and overseas.
5. Following a submission from the Order of St. John, the Council has asked the Department of Labour to prepare a report comparing the New Zealand procedures and requirements for first aid services at work with those in the United Kingdom.
6. The Federation of Labour representatives have asked for a report to be prepared on the current status and future of occupational health centres.
7. The report of the Task Force on Trade Union Education contains recommendations on safety and health training, and the intention is for the council to have an advisory role to the Trade Union Education Authority in this area when it is established.

(p.4)

APPENDIX II

JOB DESCRIPTION

1. TITLE: OCCUPATIONAL HEALTH NURSE
361.1015
2. LOCATION: Hamilton District (Hamilton/Wairakei)
3. OBJECTIVES: Prevent occupational illness and injury, and promote good physical and mental health amongst all Station personnel. Efficiently administer the Division's occupational health programme and provide professional nursing resources for First Aid and Emergency Services.
4. RESPONSIBILITIES:
 - (a) Health Assessment and Monitoring by:
 - (i) Arranging where necessary for all prospective employees (and employees being considered for a change in occupation) to be assessed for physical and mental stability for the type of work they will be required to undertake.
 - (ii) Arranging for all employees to be regularly screened for specific disabilities likely to develop as a result of industrial hazards and in particular carry out specific tests in cases of exposure to:
 - * Excessive noise
 - * Mercury vapour
 - * Asbestos fibres
 - * Polychlorinated Biphenyls
 - * Sulpha Hexafluoride
 - * Arsenic
 - * Stress
 - * Silica dust
 - * Coal dust
 - * Toxic gases
 - * Other toxic substances or hazardous procedures

(iii) Carry out where necessary clinical tests regularly on personnel;

- * Blood pressure measurement
- * Urinary analysis
- * Vision tests
- * Weight and other physical measurements
- * Exercise tolerance

(b) Accident and Disease Prevention

(i) Monitor work areas and identify potential health hazards caused by:

- * Excessive noise
- * Inadequate "housekeeping"

and direct problem to appropriate officers to enable evaluation of potential hazard.

(ii) Make recommendation to management on control of hazards in the work place.

(iii) Advise on and fit devices to protect employees from hazards, especially to issue and instruct in use of ear muffs and plugs.

(iv) Advise on health aspects proposed new processes or substances.

(v) Advise on standards of hygiene (personal and communal)

(vi) Investigate minor work related accidents and ensure proper measures to prevent recurrence.

(vii) Participate in health and safety lectures.

(c) Liaison with Injured or Sick Employees

(i) Arrange to be informed of the occurrence of accidents resulting in serious injury or the prolonged absence through sickness and at appropriate times visit at home or hospital and the spouse at home to ensure:

- * Spouse and children are well cared for
- * Correct documentation (ACC and/or SC) has been carried out

* The employee is attending or being attended to by his/her Doctor, and is receiving prescribed treatment (medication physiotherapy etc)

* Management kept informed of progress and prognosis

(ii) Participate in rehabilitation and resettlement of employees returning to work after injury or sickness.

(d) Health Education and Counselling

(i) Counselling employees and/or spouses for personal health or social problems under the Employee Assistance Programme.

(ii) Plan and implement educational programmes on general health and health aspects of the industrial environment, e.g. hearing conservation, First Aid, personal protection and safety programmes.

(e) First Aid and Emergency Services

Assist in organising and ensuring the provision of adequate services for:

(i) First aid treatment of minor injuries including organisation of first aid supplies and training of personnel.

(ii) Emergency treatment of severe injuries or illness including resuscitation and safe transport to hospital.

(iii) Co-operation with St Johns Ambulance Brigade, Red Cross Association in the training and examining of First Aid personnel.

(f) Epidemiology and Research

(i) Undertake appropriate studies and research and relate to occupational health of employees.

(ii) Be involved in the planning, implementing and evaluating of the nursing service.

(g) Recording and Reporting Responsibilities

- (i) Establish and maintain accurate, complete, confidential, computerised health records on all personnel.
- (ii) Keep appropriate records of all attendances to the health service.
- (iii) Prepare reports for management on working environment assessments, nursing activities, absenteeism, work injuries and accidents.

(h) Co-operation with Other Health Agencies

Promote close liaison with medical practitioners, hospitals, and other community health and social agencies.

5. RELATIONSHIPS

Responsible to: Personnel Officer

Responsible for: (No staff supervision involved)

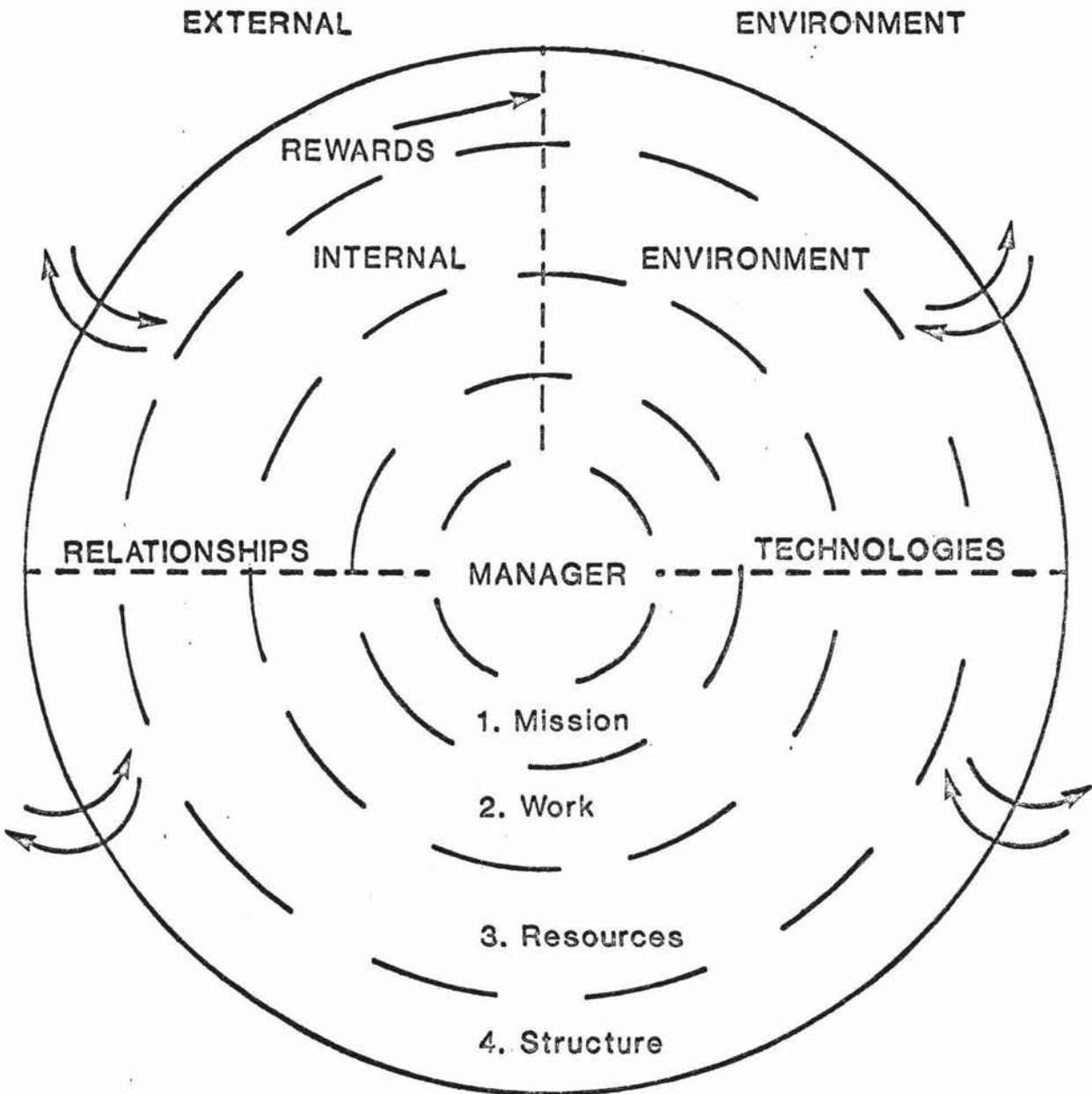
Functional Responsibility: Divisional Medical Officer
District Safety Officer

6. PERFORMANCE CRITERIA

The job of the Occupational Health Nurse is being well done when:

- (a) All the industrial health hazards are identified and when all employees have confidence in the Occupational Health Nurse minimising such hazards, and a competent emergency accident service is available.
- (b) When all employees and their families have confidence in the Occupational Health Nurse during times of stress such as the result of accidents or sickness.
- (c) Harmonious relationships with all other personnel on site and with all other Health agencies is maintained.

APPENDIX 111
KIMBRO-GIFFORD
MANAGEMENT MODEL



(Gifford, A.J. and Kimbro, C.D., 1984, p.40)

APPENDIX IV

INTERVIEW REQUEST

Dear Sir/Madam:

I am writing to request an interview with you concerning the implementation of an occupational health service for your employees.

I am a registered nurse, currently working on my Master's Degree in nursing at Massey University. The implementation of the occupational health service to your business would be part of my second year's work for the degree and would be entirely free for you.

Occupational health is concerned with the appraisal, maintenance, restoration and improvement of the health of workers through the application of preventive health services, the promotion of satisfactory and safe interactions at work through principles of human behaviours.

The objective of my intervention into your business would be to bring to management and employees affordable and accessible health care consisting of health education and prevention of disease, promoting maximum self-reliance of individuals for their own health care and to give the necessary emergency care.

An assessment would first be made of the company and employees, a health service offered and an evaluation at the end of the project. I would like to commence the service approximately in February or March 1987 and to finish the project around August 1987.

I will ring your company for an interview appointment to more fully explain what I would be offering, show where it has been done previously and advise you of my qualifications.

Thank you for your time.

Yours sincerely,

Catherine L. Glick

APPENDIX V
NURSE CONSULTANT

1. Health supervision at place of work
2. Health education
3. Occupational Safety supervision
4. Environmental monitoring and accident investigation
5. Counselling: supporting action, to employee and his family
6. The organisation of an emergency treatment service for accident and illness at work.
7. Work change or modification for rehabilitation
8. Development and maintenance of health records
9. Co-operation with outside agencies
10. Arranging medical investigations
11. Periodic screening e.g. hearing tests, diabetic testing, blood pressure tests
12. Advice regarding protective clothing and apparatus for employees
13. Shop floor visits and observations
14. Provision of posters, pamphlets, etc.
15. Advice concerning first aid equipment
16. Advice regarding Safety Committee
17. Organisation of First Aid classes and keeping certificates up to date
18. Advice regarding A.C.C. forms and regulations
19. Advice regarding factory legislation
20. Maintaining confidentiality of the employee

APPENDIX VI

LETTER OF INTRODUCTION TO EMPLOYEES

27 March 1987

Dear Employee

This is a short note to introduce myself as your Occupational Health Nurse for part of this year.

I am a Registered General Nurse with a certificate in Occupational Health.

I have worked in Companies before as the Health Nurse.

I would like you to help me with the introduction of a Health Care plan for your Company. I am working on this project for my Degree at Massey University.

I would like to get to know you by scheduling a short health interview with you during the next few weeks, I will take your blood pressure, check for diabetes, and discuss pertinent family history with you. All information is confidential between Nurse and Employee, names will not be mentioned in my University work.

This project, which has been encouraged by Unions and Managements is a good opportunity for all Employees to have regular health reviews in working time with some benefits to working environments and accident prevention as an important end result.

You have the right to refuse to be involved, but I hope that all Employees will take this opportunity to take part in your own health care.

Thank you.

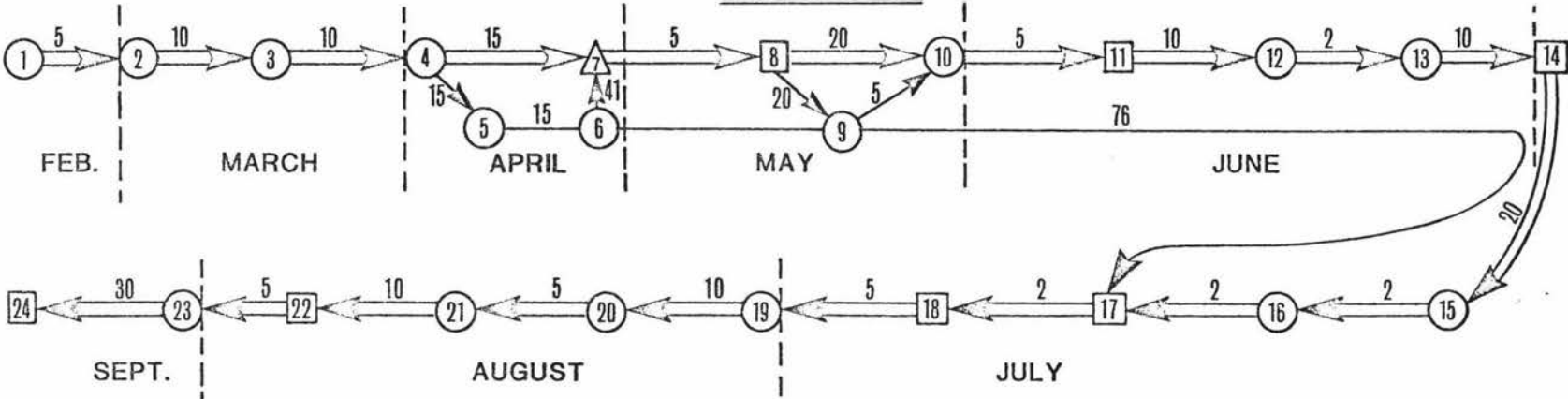
Catherine Glick
Occupational Health Nurse

APPENDIX VII

PERT DIAGRAM

Symbol Code

- Begin or end event
- Milestone event
- △ Interface event
- Workdays for activity denoted by arrow
- ⇒ Critical path
- Constraint on arrowed activity by completion of our product form preceding activity
(Wilson, 1985, p. 203)



APPENDIX VII

| <u>Begin and end events</u> | <u>Activity</u> | <u>Estimated Working Days</u> |
|-----------------------------|--|-------------------------------|
| 1-2 | Talk with managers | 5 |
| 2-3 | Factory profiles | 10 |
| 3-4 | Develop plans | 10 |
| 4-7 | Commence screening programmes (B.P., diabetic) | 15 |
| 4-5 | Start health records | 15 |
| 5-6 | Evaluation and counselling | 15 |
| 6-17 | Continually collecting relevant health teaching material (Reader's Digest, etc) | |
| 6-7 | Make referrals as necessary | 4 |
| 7-8 | Noise level survey | 5 |
| 8-10 | Audiometry testing and issuing proper protection | 20 |
| 8-9 | Record keeping (employee's own and also for thesis and management) | 20 |
| 9-10 | Referrals | 5 |
| 10-11 | Procuring CPR material | 5 |
| 11-12 | CPR classes | 10 |
| 12-13 | Arrange first aid classes | 2 |
| 13-14 | Hold classes | 10 |
| 14-15 | Procure slides and movies for health teaching | 2 |
| 14-18 | Counselling | 20 |
| 15-16 | Collect Health Department literature aids | 2 |
| 16-17 | Hold general health classes, retirement classes | 20 |
| 17-18 | Write evaluation questions | 2 |
| 18-19 | Give out questionnaires | 5 |
| 19-20 | Wait for return of questionnaires | 10 |
| 20-21 | Analyze returns | 5 |
| 22-23 | Discussion with management | 5 |

| | | <u>Hazard level</u> |
|-----|--|---------------------|
| 11. | Fibreglassing | Yes/No _____ |
| 12. | Other plastics manufacturing Which type? _____ | Yes/No _____ |
| 13. | Timber treatment | Yes/No _____ |
| 14. | Other agricultural chemicals or noxious substances Which ones? _____ | Yes/No _____ |
| 15. | Process involving asbestos | Yes/No _____ |
| 16. | Abrasive blasting processes | Yes/No _____ |
| 17. | Does the process involve possibly hazardous levels of: | |
| | i. Dust | Yes/No _____ |
| | Type _____ | |
| | ii. Gasses | Yes/No _____ |
| | Type _____ | |
| | iii. Fumes (Including solvents) | Yes/No _____ |
| | Type _____ | |
| | iv. Do you consider monitoring should be done? | Yes/No |
| | v. Is protective equipment provided? | Yes/No |
| | vi. Do you feel that there is a need for employee education in this area? | Yes/No |
| | vii. Is extraction ventilation provided/ | Yes/No |
| 18. | Is occupational dermatitis a problem in this firm? If so, what is thought to be the cause? _____ _____ | Yes/No |
| 19. | Hazardous Chemicals | |
| | Are potential hazardous chemicals used in processes or stored on the premises? | Yes/No |
| | If so, please specify chemical name or trade name and use: _____ _____ _____ | |

20. Do you have wastes which fall into any of the following categories?
- i. Toxic waste which cannot be disposed of Yes/No
 - ii. Toxic waste not acceptable to local authority Yes/No
 - iii. Toxic waste needing treatment before disposal Yes/No
 - iv. Other waste problems Yes/No

Please specify waste concerned _____

Approximate quantity _____

SECTION B: PROCESSES INVOLVING POTENTIAL PHYSICAL HAZARDS

1. Noise Hazard level _____
- a. Do any of the processes produce excessive noise levels? Yes/No
 - b. Has this firm previously had a noise level survey? Yes/No
By whom? _____ When? _____
 - c. Do you consider a noise level survey necessary? Yes/No
 - d. Is there impact noise? Yes/No
 - e. Have steps been taken to:
 - i. Reduce noise at source Yes/No
 - ii. Isolate or insulate noise Yes/No

If these have failed, is there a need for individual employee protection? Yes/No
21. Are vibrating tools used in this company? Yes/No

22. Is radiation used? Yes/No
- Are any of the following used in this firm? Hazard Level
- a. Ultra violet Yes/No _____
- b. Infra red Yes/No _____
- c. Laser Yes/No _____
- d. Microwave Yes/No _____
- e. Radioactive materials Yes/No _____
23. Do any of the processes involve excessive exposure to:
- a. Heat Yes/No
- b. Cold Yes/No
24. Is compressed air used as:
- a. Breathing equipment Yes/No
- b. A pressure source Yes/No
25. Do workers work in high or low atmospheric pressures? Yes/No

SECTION C: PROCESSES INVOLVING BIOLOGICAL HAZARDS

1. Do workers handle plant, animal or other material which could infect or contaminate them? Yes/No Hazard Level _____
- Material concerned _____
2. Do workers handle food or food products for trade or sale? Yes/No

SECTION D: FACTORY ENVIRONMENT AND HEALTH SOURCES

1. Does the firm employ an occupational health physician? Yes/No
If so, full-time or part-time?
2. Does the firm employ an occupational health nurse? Yes/No
If so, full-time or part-time?
3. Do the public health nurses visit? Yes/No
If so, how often? Weekly, monthly, six monthly, yearly, other _____

4. Does the firm employ certified first aiders? Yes/No
 If yes, how many? _____
5. Does the firm have a safety officer? Yes/No
6. Does the firm have a safety committee? Yes/No
 If yes, who is represented? _____
-
7. Does the firm offer employee assistance programmes? Yes/No
8. Does the firm offer rehabilitation programme? Yes/No
9. Is English the first language of all employees? Yes/No
 If not, what other languages are used?
-
10. Is food prepared on the premises for consumption by the employees? Yes/No
11. Is a tea room provided where employees can consume their own food? Yes/No
12. Would you like further Health Education material (e.g. alcohol, smoking, diets, exercise)? Yes/No
 Which topics? _____

APPENDIX IX

STAFF MEDICAL RECORDS

Name:
 Address:
 Ethnic Group:
 Date of Birth:

Phone No:
 Occupation:
 First Aid Cert:
 Expiry Date:

Physician:
 Reason:
 Present Medication:
 Allergies

Last Time Visited:

HEALTH SCREENING

Blood Pressure
 Diabetic Test
 Pap Smear
 Eye Exam

Tetanus Toxoid
 Audiometry
 Dentist

PAST MEDICAL HISTORY

Childhood diseases:
 Immunizations:
 Accidents:
 Surgical Procedures:
 Chronic Illness:
 Occupational Exposure:

FAMILY HISTORY

Mother: Living / Deceased
 Cause of Death:
 Presence of Familial Tendency Diseases:
 Other Comments:

NAME
 Father: Living/Deceased
 Cause of Death:

PERSONAL HABITS

Use of: - Coffee Tobacco
 Alcohol Drugs

Patterns of Work: - Work
 Rest
 Exercise

Personal or Leisure Time:

Eating habits & types of food:

| | | | | |
|-------|--|----------|--|-------|
| NEEDS | | PROBLEMS | | GOALS |
| | | | | |

EVALUATION & COMMENTS:

APPENDIX X
EDUCATIONAL TOPICS - COMPANY A

| Topic | No. of People |
|---------------------------|---------------|
| Good nutrition and diets | 5 |
| How to quit smoking | 2 |
| Womens' health | 10 |
| Drugs and alcohol | 1 |
| Exercise | 4 |
| CPR | 9 |
| Sports injuries | 2 |
| Relationships | 2 |
| Skin care | 1 |
| Death and dying | 4 |
| Coping with anger | |
| Stress | 6 |
| First Aid | 9 |
| Lifting and backs | 4 |
| Home accidents and safety | 3 |
| Teeth care | 2 |

APPENDIX XI

PROPOSED OCCUPATIONAL HEALTH PROGRAMME FOR COMPANY A

| TOPIC | SPEAKER | DATE | CHARGE |
|---|------------------------------------|-----------|----------|
| Womens' Health: Reproduction and Pregnancy | Family Planning Officer | May 7 | \$25.00 |
| Aid's Video and Lecture | Family Planning Officer | May 25 | \$22.50 |
| Cancer Prevention Video and Lecture | Cancer Society Educational Officer | May 29 | Donation |
| Hearing Conservation Slides | Occupational Health Nurse | June 8 | Free |
| Commence Hearing and Eye Tests | Occupational Health Nurse | June 16 | Free |
| Womens' Health: Premenstrual Tension | Family Planning Officer | June 26 | \$25.00 |
| Contraception and Sexually Transmitted Diseases | Family Planning Officer | July 16 | \$25.00 |
| Proper Lifting Techniques | Occupational Health Nurse | July 30 | Free |
| First Aid | Occupational Health Nurse | August 30 | Free |

| TOPIC | SPEAKERS | DATE | CHARGE |
|---|------------------------------|--------------|----------|
| "Men for Non-Violence" Lecture | Guest Speaker | September 30 | Donation |
| "Near Drowning" film and Safety in the Sun Pamphlets | Occupational Health Nurse | October | Free |
| CPR Film and Practice | Occupational Health Nurse | October | Free |
| Safety in the Workplace Film | Occupational Health Nurse | November | Free |
| Pulling out Talk and Thanks | Occupational Health Nurse | November | Free |

APPENDIX XII

FAMILY PLANNING

QUESTIONNAIRE

ALREADY USEFUL NOT VERY
KNOW USEFUL USEFUL USEFUL

Session One

Womens reproductive organs and functions _____
Womens monthly cycle and coping with pain _____
Balanced diet _____
Benefits of exercise _____
Development of a baby _____
Pregnancy _____
Menopause _____

Any Comments:

Session Two

Pre menstrual tension _____
Signs and symptoms _____
History of menstruation _____
Diet guidelines _____

Was the video "Perhaps it's not only me" useful?

Any Comments:

Session Three

Contraceptive Range available _____
Advantages and disadvantages _____

Any comments:

Given the time restraint, what would you have wanted more or less of?

Were there any aspects of the style of presentation that you liked or disliked?

What life style changes do you propose to make or have made to improve your health?

APPENDIX XIII
EMPLOYEE QUESTIONNAIRE

To assist with the evaluation of the pilot Occupational Health Programme I would be grateful if you would please answer the following questions.

Please tick the appropriate box.

1. Have the visits of the Occupational Health Nurse increased your understanding of the aims of occupational health?

A lot A little Not really

2. Have you made any life-style changes since contact with the occupational health nurse?

Yes No

... if so, what changes? _____

3. Did the nurse identify any work-related health problems of which you were not already aware?

Yes No

... if so, please specify _____

4. Have changes been implemented in your factory as a result of the Occupational Health Programme?

Yes No

... if so, what are the changes and what difference, if any, have they made? _____

5. If the same total time had been available for the programme would a different emphasis have been more beneficial?

Yes No

More time for help with personal problems

More group health education (work related topics)

More group health education (non-work related topics)

Some nursing care of general ailments and injuries

More advice about working methods in particular jobs

More health education on a one to one basis

Other (please specify) _____

| | |
|--|--|
| | |
| | |
| | |
| | |
| | |
| | |
| | |

6. Would you have liked the programme to be longer?

Yes

No

... if so, how would you have liked the extra time to be used? _____

7. Would you have liked the nurse to visit more frequently each week?

Yes

No

... if so, how many hours per week? _____

8. Do you think the amount of time spent by the nurse at your company was enough time for you to develop a trust with her?

Yes

No

9. Did you think the occupational health nurse offered professional and efficient service?

Yes

No

10. Was the Occupational Health Programme worthwhile?

All of it

Most of it

Some of it

A waste of time

11. Which part of the occupational health programme offered was of the most benefit to you? _____

12. Which part of the occupational health programme was of the least benefit to you? _____

13. Would you want your company to continue the Occupational Health Service after November?

Yes

No

14. I would be grateful for any suggestions you would like to make for improving the service: _____

Thank you for your time.

Catherine L. Glick
Occupational Health Nurse

APPENDIX XIV

MANAGEMENT QUESTIONNAIRE

To assist with the evaluation of the pilot Occupational health Programme I would appreciate it if you would please answer the following questions.

Please tick the appropriate box.

1. Have the visits of the Occupational Health Nurse increased your understanding of the aims of occupational health?
 A lot A little Not really

2. Did the nurse identify any work-related health problems of which you were not already aware?
 No Yes (please specify) _____

3. Have changes been implemented in your factory as a result of the Occupational Health Programme?
 No Yes

... if so, what difference, if any, have the changes made?

4. If the same total time had been available for the programme would a different emphasis have been more beneficial?

Yes No

| | Yes | No |
|---|--------------------------|--------------------------|
| More time for help with personal problems | <input type="checkbox"/> | <input type="checkbox"/> |
| More group health education (work related topics) | <input type="checkbox"/> | <input type="checkbox"/> |
| More group health education (non-work related topics) | <input type="checkbox"/> | <input type="checkbox"/> |
| Some nursing care of general ailments and injuries | <input type="checkbox"/> | <input type="checkbox"/> |
| More advice about working methods in particular jobs | <input type="checkbox"/> | <input type="checkbox"/> |
| More health education on a one to one basis | <input type="checkbox"/> | <input type="checkbox"/> |
| (Other (please specify) _____) | | |

5. Would you have liked the programme to be longer?
 No Yes

6. Are there parts of the programme which you feel need follow-up or ongoing input from the nurse?

No Yes (please specify) _____

7. Was the Occupational Health Programme worthwhile?

All of it Most of it Some of it

None of it

8. Which part of the programme offered to you did you think was the most beneficial? _____

9. Did you make any personal lifestyle changes as a result of the occupational health programme?

No Yes (please specify) _____

10. Is the idea of contracting a nurse for occupational health services a feasible one for your company?

No Yes

11. How many hours per week could you envisage a nurse visiting your business? _____

12. What would you be willing to pay a nurse in her/his own business who is contracting to your firm?

\$30/hour \$40/hour \$50/hour ..other _____

13. Please list any other suggestions for improving the service.

APPENDIX XV

ORGANISATION AND IMPLEMENTATION OF THE OCCUPATIONAL
HEALTH PROGRAMME: COMPANY A

The following schedule illustrates organisation and implementation of the Occupational Health Programme:

- 6 April: Arranged with nurse at post office to borrow the audiometry machine to perform hearing tests and discussed her educational programme. Factory profile done
- 7 April: Meeting with Health Department staff to exchange ideas and collect educational aids.
- 8 April: Purchased BM Diabetic testing sticks from chemist.
Rang speaker for "Men for non-violence" talk on the support group.
Rang occupational therapist to discuss holding a stress management course.
Rang a safety supply company regarding lectures on safety.
- 9 April: Personal interviews in progress
- 10 April: Conferred with Hearing Visual Tester at Health Department.
- 14 April: Met with nurse forming her own business in occupational health.
Met with A.C.C. Safety Officer to find out what resource material available and ask about safety lectures. They do not give lectures any longer. Picked up safety pamphlets.
Personal interviews continue.
- 23 April: Talked with nurse at Polytechnic School regarding womens' health lectures.
- 27 April: Rang Cancer Society to arrange lecture and video.
- 28 April: Visited Health Department and A.C.C. again for more brochures and posters.
Visited Massey University library to get information on specific counselling areas.
- 29 April: Visited Polytechnic library and Hospital library to find information for employees.

- 30 April: Attended a free health lecture with video show to see if any of the further showings would be appropriate for factory. Interviews finished.
- 1 May: Met with Educational Officer at Family Planning to arrange four women's health lectures.
- 2 May: Planned programme for the year.
- 4 May: Visited factory to obtain approval for year's health programme - same given.
- 7 May: Investigated where to hire or borrow video set for lectures - options not appropriate. Manager will bring one. Arranged with General Practitioner to give lecture. Introduction of Family Planning Educational Officer. Lecture on womens' reproduction and pregnancy information, women attentive and asked questions.
- MAY HOLIDAYS
- 25 May: Family Planning Educational Officer showed "Aids" video and gave talk on sexually transmitted diseases. Two aids brochures given out.
- 29 May: Cancer prevention video and lecture given by Cancer Society Educational Officer.
- 4 June: Discussed hiring a slide projector for further lectures with manager. Arranged with Health Department to borrow slides on hearing conservation. Talked with Family Planning Educational Officer to confirm Aids lecture and ask how other class had gone. Arranged slide projector hire from photographic shop and video hire from video movie shop.
- 5 June: Collected slides and brochures for Hearing Conservation lecture from Health Department.
- 8 June: Collected slide projector - showed slides and ran tape on hearing conservation first at home to insure proper viewing. Hearing Conservation slides and tape shown. Pamphlets given out.
- 16 June: Commenced hearing and eye tests.

- 17 June: Hearing and eye tests continue. Three referrals made to General Practitioners for hearing loss.
- 26 June: Letter constructed to manager to be reimbursed for petrol used: State Services rates. Same given to manager who will get approval from Board of Directors. Pre-menstrual Tension video shown by Family Planning Officer. Short talk given and pamphlets distributed.
- 7 July: Talk given by General Practitioner on "What you should get from your Doctor". Good participation.
- 16 July: Collected video machine at University to use in film showing. Lecture by Family Planning Officer on "Contraception and Sexually Transmitted Diseases". Video and flip chart used. All employees invited.
- 22 July: Collected questionnaire forms which had been filled out by the women re: Womens' Health lectures.
- 30 July: Collected video set from University again. Good lifting techniques. Video narrated by Len Ring shown. Brochures on proper techniques and relaxation exercises given out.
- 31 July: Conferred with Visual Hearing Tester at Health Department re: results of hearing tests.
- 15 August: Wrote to A.C.C. office requesting first aid films.
- 19 August: Pre-screened first aid films.
- AUGUST HOLIDAYS
- 20 August: Collected movie projector from University for film showing and returned it afterwards. Two first aid films. One produced in Britain and the other in America. Covered different emergency situations. Practical demonstration and talk afterwards.
- 14 Sept: Asked manager about having a speaker from "Men for Non-Violence" group come to talk. Same approved.

- 15 Sept: Arranged with representative from "Men for Non-Violence" group to come 30 Sept. at 1 p.m. in order to see both shifts of employees.
- 28 Sept: Posted notice at company regarding the coming lecture.
- 30 Sept: Collected video machine and met speaker from non-violence group. He delivered a talk, but video machine would not work "Men for non-violence" speaker. Male employees only.
- 5 October: Questionnaires distributed to employees.

APPENDIX XVI

PROPOSED EDUCATIONAL PROGRAMME FOR COMPANY H

| TOPIC | SPEAKER | DATE | TIME | COST |
|---|---------------------------|----------|-------------|--------------------------------|
| Hearing Conservation slides and tape | Occupational Health Nurse | June 11 | 12.15-12.30 | Rental of slide projector \$15 |
| Aids video | Family Planning Officer | June 15 | 12.15-12.45 | \$11 speaker 12 video hire |
| Hearing Tests | Occupational Health Nurse | June 24 | All day | Free |
| Men for Non-Violence | Co-ordinator of group | July 8 | 12.15-1.00 | Donation |
| Back care video | Occupational Health Nurse | July 29 | 12.15-1.00 | Free |
| First Aid Films | Occupational Health Nurse | Sept. 7 | 12.15-1.00 | Free |
| Cardio pulmonary resuscitation and practise | Occupational Health Nurse | October | 12.15-1.00 | Free |
| Safety in the workplace film | Occupational Health Nurse | October | 12.15-1.00 | Free |
| Near Drowning slides | Occupational Health Nurse | November | 12.15-1.00 | Free |
| Final Talk and pulling out | Occupational Health Nurse | November | 12.15 | Free |

APPENDIX XVII

ORGANISATION AND IMPLEMENTATION OF THE OCCUPATIONAL

HEALTH PROGRAMME: COMPANY H

- 6 April: Requested audiometry machine from P.O. nurse - she consented for a later date.
- 7 April: Met with Health Department Occupational health nurse to discuss educational ideas.
- 8 April: Talked with speaker for "Men for Non-Violence". Talked with N.Z. Safety Co. about giving safety lectures.
- 10 April: Met with P.O. nurse to confirm borrowing audiometry machine and to discuss her health education programme.
Met with Health Department nurses and hearing visual tester.
Also obtained pamphlets, posters and hearing graphs.
Bought B.M. sticks for diabetic testing.
- 14 April: Met with another nurse in her own business to exchange ideas.
Met with A.C.C. and picked up brochures.
- 16-28 April: Interviews commenced and continued.
- 28 April: Rang Asthma Society for employee and obtained article on asthma from Massey.
- 1 May: Met with Family Planning Educational Officer regarding "Aids" lecture.
- 2 May: Made written plan of health programme for the year.
- 6 May: Visited Company H to get programme approval.
- 7 May: Phone calls made inquiring where to borrow video machine.
- MAY HOLIDAYS
- 4 June: Talked with Family Planning Officer to confirm "Aids" showing. Arranged slide projector hire and video machine hire.
- 5 June: Collected Hearing Conservation slides from Health Department.
- 8 June: Dropped by factory to investigate where slide show can take place.

- 11 June: Collected slide projector and previewed slides and tape at home. Hearing Conservation slides shown at factory.
- 15 June: Rang Company H manager to ask him to make an announcement about video show at 12.15 p.m. Collected video machine and nurse's own T.V. Had to return to hire shop before show because video sound would not come through. Show postponed until 3 p.m. when everything went satisfactorily. AIDS video shown.
- 16 June: Returned video machine to hire shop and video movie to Family Planning Officer's home. Picked up audiometry machine at Post Office.
- 24 June: Hearing tests commenced.
- 8 July: Lecture and video on non-violence shown. Guest speaker.
- 24 July: Notified manager as to date of lifting technique and back injury lecture. Went to factory to put notice up. Picked up pamphlets at Health Department. Previewed video at University.
- 29 July: Went to factory after collecting video machine and T.V. only to find too few employees there to make it worthwhile - they were all out on jobs. Must arrange another date.
- 31 July: Visited Health Department to consult hearing visual tester regarding results of hearing tests.
- 17 August: Collected video and T.V. again. Back injury prevention video shown.
- 7 Sept: Collected movie projector from University and returned it afterwards. First aid films shown and demonstration given.
- 30 Sept: Rang manager to get approval for CPR training next week.
- 1 Oct.: Arranged CPR video and mannequin from Coronary Care Unit at Hospital. Arranged to borrow video machine from University.
- 6 Oct.: CPR video shown and practice on mannequin done.
- 12 Oct.: Questionnaires dispensed.
- 6 Nov.: Questionnaires collected.

APPENDIX XVIII

EDUCATIONAL TOPICS - COMPANY H

| Topic | No. of People |
|-------------------------------|---------------|
| Nutrition and Diets | 5 |
| Quitting smoking | 6 |
| Womens' health | 0 |
| Drugs and alcohol abuse | 2 |
| Exercise | 10 |
| Resuscitation | 15 |
| Sports injuries and treatment | 10 |
| Relationships | 2 |
| Skin care and good hygiene | 2 |
| Death and dying | 0 |
| Coping with anger | 0 |
| Stress | 4 |
| First aid | 16 |
| Lifting techniques | 10 |
| Home accidents | 5 |

APPENDIX XIX

EDUCATIONAL TOPICS - COMPANY D

| Topic | No. of People |
|-----------------------------|---------------|
| Nutrition and diets | 2 |
| Quitting smoking | 8 |
| Womens' health | 4 |
| Drugs & alcohol abuse | 1 |
| Exercise | 3 |
| Resuscitation | 11 |
| Sports injuries & treatment | 6 |
| Relationships | 4 |
| Coping with anger | 2 |
| Stress | 5 |
| First aid | 11 |
| Lifting techniques | 3 |
| Home accidents | 2 |

APPENDIX XX

PROPOSED EDUCATIONAL PROGRAMME FOR COMPANY D

| TOPIC | SPEAKER | DATE | TIME | COST |
|----------------------|---|----------|-------------|----------|
| First Aid | Red Cross Nurse | May 12 | 1.30-3.30 | \$32 |
| First Aid | Red Cross Nurse | May 19 | 1.30-3.30 | \$32 |
| First Aid | Red Cross Nurse | May 26 | 1.30-3.30 | \$32 |
| First Aid | Red Cross Nurse | June 2 | 1.30-3.30 | \$32 |
| Aids Video | Family Planning Officer | June 9 | 12.15-12.45 | \$12.50 |
| Hearing Tests | Occupational Health Nurse | June 19 | All Day | Free |
| Hearing Conservation | Occupational Health Nurse | June 23 | 2 p.m. | Free |
| Violence | Group Coordinator | July 1 | 1.30-2.30 | Donation |
| Back Care | Occupational Health Nurse | July 28 | 1.30-2.30 | Free |
| Stress Management | Occupational Health Nurse & Nursing Tutor | August 4 | 1.30-3.30 | \$50 |
| " | " | Aug. 18 | 1.30-3.30 | \$50 |

| TOPIC | SPEAKER | DATE | TIME | COST |
|---|---|----------|-----------|------|
| Stress Management | Occupational Health Nurse & Nursing Tutor | Aug. 25 | 1.30-3.30 | \$50 |
| " | " | Sept. 1 | 1.30-3.30 | \$50 |
| Womens' Health | Family Planning Officer | Sept. 8 | 1.30-3.30 | \$25 |
| " | " | Sept. 15 | " | " |
| " | " | Sept. 22 | " | " |
| " | " | Sept. 29 | " | " |
| What you should get from your doctor | Medical Practitioner | Oct. 6 | 1.30 | Free |
| Food Handling | Occupational Health Nurse | Oct. 13 | 1.30 | Free |
| Safety in the work-place | Occupational Health Nurse | Oct. 20 | 1.30 | Free |
| Safety in the Sun | Occupational Health Nurse | Oct. 27 | 1.30 | Free |
| Final talk and pulling out - further health programme | Occupational Health Nurse | Nov. 3 | 1.30 | Free |

APPENDIX XXI

ORGANISATION AND IMPLEMENTATION

OF THE OCCUPATIONAL HEALTH PROGRAMME: COMPANY D

The following schedule illustrates the work involved in organising and implementing the occupational health programme in Company D.

- 26 March: Met with Deputy Principal Nurse at Health Department to see their occupational health assessment card.
- 27 March: Sample health card given to Company's secretary to type one out for each employee. Company profile completed.
- 1 April: Picked up order form from Company D and purchased BM sticks for diabetic testing.
- 4 April: Devised evaluation forms for programme.
- 6 April: Met with General Practitioner to ask permission to use him as a consultant. Talked with Post Office nurse to borrow audiometry machine. Commenced employee assessments.
- 7 April: Met with Health Department occupational Health nurse to discuss educational plans for this nurse's factories.
- 8 April: Rang speaker regarding "Men for non-violence" group asking if he could present a lecture. Rang occupational therapist regarding stress-management classes.
- 10 April: Visited Post Office Nurse to discuss her educational programme and confirm borrowing audiometry machine. Met with Health Department Educational Officer, Factory Inspector and Hearing Visual Tester. Obtained pamphlets, posters and hearing graphs and regulations.
- 14 April: Met with another occupational health nurse in independent practise to compare ideas. Met with Accident Compensation Corporation (A.C.C.) to ask about safety lectures and see what resource material available.
- 22 April Collected pamphlets at A.C.C. and arranged for safety officer to assess management systems of Company D.

Bought Factory and Commercial Premises Act and Machinery Act at Government Printers for Company D Manager.

Met with Red Cross Nurse and arranged for her to do four lectures at Company D commencing 12 May for four weeks.

- 23 April: Discussion with Company D Manager regarding first aid classes and A.C.C. assessment.
- 29 April: Took Aid's brochures to Company D for wages clerk to give out with pay packets.
- 2 May: Made written health programme plan.
- 4 May: Rang manager to find out how many people for Red Cross Class.
Rang Red Cross to let them know.
- 5 May: Rang Company D to remind wage's clerk to hand out Aid's brochures.
- 6 May: Met with manager to get approval for rest of health programme.
- 8 May: Inquiries to numerous places regarding borrowing or hiring video. Company D will hire their own video set.

MAY HOLIDAYS

- 18 May: While this nurse on holiday, wrote to company D manager regarding an AIDS issue at their factory.
- 4 June: Talked with Company D manager regarding the letter and its effect.
Consulted Family Planning Educational Officer regarding Aids video and lecture.
- 5 June: Collected slides and brochures on hearing conservation from Health Department.
- 8 June: Previewed hearing conservation slides and tape first at home.
- 9 June: Collected lecturer for Aid's show and went to Company D.
Aids Video shown.
- 10 June: Attended Health and Safety Seminar at company's expense.
- 18 June: Rang manager to request employees wear ear muffs for hearing tests starting the next day. Asked approval for lecture about violence, but manager felt people wouldn't listen or be polite - lecture cancelled.

19 June: Rang to reserve slide projector.
Commenced hearing tests.

23 June: Collected slide projector.
Hearing conservation slides shown.

26 June: Devised letter to request petrol money
reimbursement from company.

8 July: Consulted group which gives stress management
lectures, cost obtained.

9 July: Discussed stress management class price with
Company D Manager. He prefers that occupational
health nurse do the course.
Requested Stress Management guideline book from
Auckland.

15 July: Met with Family Planning Officer to get notes on
stress management classes.
Spent two hours at company for consultations.

22 July: Met with nurse tutor regarding sharing Stress
Management classes with this nurse.

23 July: Attended A.C.C. Seminar in Wellington, fully paid
for by Company D.

24 July: Previewed video on back injury prevention.

28 July: Collected video machine from university.
Photocopied back exercise information for
employees.
Back injury prevention video shown.

31 July: Compared hearing tests to last years tests at
Health Department.

3 August: Rang Company D manager to see how many people for
stress class - only four so classes cancelled.

4 August: Visited Company D to discuss writing of safety
programme.

16 August: Commenced work on written safety programme.

19 August: Met with Safety Committee group and manager to
discuss written safety programme.

24 August: Collected movie projector from university.
First aid films shown.

6 October: Evaluation questionnaires distributed.

APPENDIX XXII

OCCUPATIONAL HEALTH NURSE QUESTIONNAIRE

1. Was the occupational health programme in the three factories worthwhile?

| Company | Yes | No |
|---------|-------------------------------------|-------------------------------------|
| D | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| A | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| H | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

2. Were the hours allotted each week enough?

| | Yes | No |
|---|-------------------------------------|-------------------------------------|
| D | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| A | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| H | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

... any comment? *People did not visit nurse at D Company when extra time was spent there. At Companies A and H people would have visited if nurse was there extra hours per week.*

3. Was the nursing process constructively implemented?

| | Yes | No |
|---|-------------------------------------|--------------------------|
| D | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| A | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| H | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

4. Did the management and employees seem interested in the programme?

| | Yes | No |
|---|-------------------------------------|--------------------------|
| D only management | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| A only employees | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| H but could allot less time than others | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

5. Was management supportive?

| | Yes | No |
|--|-------------------------------------|--------------------------|
| D but were very busy | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| A but couldn't attend | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| H did attend sessions and let nurse give each of chosen lectures | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

6. What would the charge per hour need to be if in own business? \$40/hr

7. Is a mobile clinic necessary or not worthwhile? *Not worthwhile*

8. What were the strengths of the programmers? *personal interviews - the company profiles - the topics of education - the speakers - management's support*

9. What were the limitations of the programmes? *- had to progress too rapidly within 8 months.
- writing up Massey work took time away from the programme
- as nurse was not paid, probably not as committed
- data are not cut and dry percentages since some people fall into more than one category
- limited by having no clinic to work from or proper area for hearing tests
- not having time to develop trust and friendship of employees which is very important*

10. Would factories within a smaller radius be more economical?

Yes No

11. Could more than three companies be adequately covered?

Yes

No

... How many? 5-7 if actually in own business

12. What further equipment will be required? - Audiometry machine - VCR - movie projector - slide projector - otoscope - scale - Medikit - pregnancy test kit - urine test sticks - ear syringe - stethoscope - filing cabinet

13. What were some of the frustrations of the programme?

- not having own equipment and having to borrow or rent
- some employees not at work when lectures are scheduled - that means returning another day when most are there
- not full commitment by management - only paid lip service to project
- state of reorganisation of one company was so chaotic that management couldn't put enough time into the safety programme and safety committee organisation
- nurse not getting paid, therefore need to accept other nursing jobs which again take time away from the project
- limit of time company gives nurse for lecture periods
- employees refusing interviews, not coming to lectures and being rude when are at lectures
- unavailability of resource people
- cancellation of various programme parts

14. Was support forthcoming from outside agencies?

Yes

No

15. Was networking with other nurses important?

Yes

No

16. Is it feasible to actually start an occupational health consultancy?

Yes

No

APPENDIX XXIII

FINANCIAL DATA

MANAWATU MOBILE OCCUPATIONAL HEALTH SERVICE EQUIPMENT AND
SUPPLIES LIST

| <u>Equipment</u> | <u>No. needed</u> | <u>Cost</u> |
|-------------------------|-------------------|-------------|
| Audiometry machine | 1 | \$ 196.00 |
| Patient weight scale | 1 | 45.00 |
| Medikit (emergency box) | 1 | 45.00 |
| Pregnancy test kit | 1 | 29.00 |
| Urine tests | 1 bottle | 21.00 |
| Ear syringe | 1 (150 mls) | 30.00 |
| Otoscope | 1 | 180.00 |
| Stethoscope | 1 | 30.00 |
| Filing cabinet | 1 | 220.00 |
| Rubbish basket | 1 | 34.00 |
| Supplies & stationery | | 560.00 |
| | | ----- |
| | | \$1,390.00 |

ASSETS

Current Assets

Cash \$10,000

Fixed Assets

Caravan 5,200

Car 19,000

Equipment 830

\$35,030

BREAKEVEN ANALYSIS

| | |
|----------------|----------------|
| Fixed Costs | \$40,674/annum |
| Variable costs | 3,609 |
| Total income | 54,320 |

Thus:

$$\text{Breakeven point} = \frac{\text{FC} \times \text{total income}}{\text{total income} - \text{variable costs}}$$

Breakeven point = \$43,569 annually

Breakeven point per month = \$3,631.00

Customers needed per month at Breakeven

| | |
|---|------------------------|
| Assumptions: Average unit selling price | \$40.00 |
| Average revenue per customer per month | 720.00 |
| Customers needed per month | $\frac{3731}{720} = 5$ |

APPENDIX XXIV
FINANCIAL PROJECTIONS

| ITEM | YEAR 1 | YEAR 2 | YEAR 3 |
|--------------------------|--------|--------|--------|
| NET SALES | 54,320 | 59,752 | 77,600 |
| Cost of materials used | 2,494 | 2,743 | 3,563 |
| Total direct costs | 2,494 | 2,743 | 3,563 |
| GROSS PROFIT | 51,826 | 57,009 | 74,037 |
| Office Overheads | 126 | 139 | 153 |
| Sales Costs | 690 | 0 | 0 |
| Administration overheads | 43,134 | 40,807 | 45,536 |
| Total overheads | 41,950 | 40,946 | 45,689 |
| NET PROFIT | 9,876 | 16,063 | 28,348 |
| CUMULATIVE PROFIT | 9,876 | 25,939 | 54,426 |

Assumptions:

That sales will have expanded to cover ten industries by the third year.

Taxes - Provisional

Nil taxes except PAYE are paid the first year in business. The second year, you must pay 1/3 of the total taxes owed on the first year's profits. This is figured 15c up to \$9,500, 30c to 30,000. The first one third payment will be \$1025 on September 7, this amount based on \$9876 profit the first year. The second payment on November 7 of same year is also \$1025 and on March 7 of the third year is the terminal payment of \$1025. Also during the third year provisional taxes are paid on profits from the second year which are forecasted to be \$16063. The first 1/3 of the taxes on this amount is \$1658, due on September 7, the next third, \$1658 due on November 7 and the last third or terminal tax of \$1658 due March 7 of the next year. In total, \$2050 for provisional tax needed in 1988, and \$4341 needed in 1989. Profits are large enough to cover this.

FINANCIAL PROJECTIONS

| ITEM | YEAR 1 | YEAR 2 | YEAR 3 |
|---------------------------------|---------------|---------------|---------------|
| <u>Office Overheads</u> | | | |
| Repairs to caravan | \$ 126 | \$ 139 | \$ 153 |
| <u>Sales Costs</u> | | | |
| Advertising | 690 | 0 | 0 |
| <u>Administration Overheads</u> | | | |
| Owner's salary | 26,000 | 28,600 | 31,460 |
| Superannuation | 600 | 600 | 600 |
| PAYE | 6,372 | 7,155 | 8,013 |
| Insurance | 168 | 185 | 204 |
| Postage | 120 | 132 | 150 |
| Printing & stationary | 240 | 264 | 300 |
| Professional fees | 500 | 550 | 1,000 |
| Bank charges | 8 | 9 | 10 |
| General | 600 | 660 | 1,000 |
| <u>Depreciation</u> | | | |
| Caravan | 832 | 874 | 699 |
| Car | 1,760 | 1,848 | 1,478 |
| Plant | 63 | 77 | 76 |
| TOTAL OVERHEADS | 48,096 | 41,093 | 45,143 |

APPENDIX XXV
ELEMENTS OF AN OUTPATIENT SUITE

| Quantity | Description | Square feet |
|----------|---|-------------|
| _____ | Exam/treatment room @ 100 to 120 sq ft (You will need one exam room for every 4,200 annual 20-minute visits in an office open 40 hours per week operating at 70 percent efficiency. Figures should be adjusted if hours open or duration of visits vary.) | _____ |
| _____ | Special procedures room @ 150 sq ft, if required. (Total number of exam and procedure rooms _____) | _____ |
| _____ | Waiting room @ 25 sq ft per exam and procedures room (80 sq ft minimum) | _____ |
| _____ | Toilets @ 30 sq ft each (Plan two per 15,000 annual visits) | _____ |
| _____ | Nurse station @ 80 sq ft per occupant | _____ |
| _____ | Clerical office @ 80 sq ft per occupant | _____ |
| _____ | Private offices @ 120 sq ft each | _____ |
| _____ | Lounge/conference room @ 20 sq ft per person | _____ |
| _____ | Storage @ 80 sq ft per 5,000 annual visits | _____ |
| _____ | Other needs (define spaces) | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| | Total net square feet | _____ |
| | (Factor to cover circulation space) | x1.39 |
| | Estimated gross square feet required | _____ |
| | | _____ |