UNIVERSITY PARTNERSHIP FOR WORKSITE MEDICAL PROGRAMS WITH INDUSTRY

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INTRODUCTION

Partnerships in the name of prevention between coal companies and university staff can be mutually beneficial, with worker well-being a positive outcome. Cyprus Minerals, a major American mining corporation based in the Denver, Colorado area, has joined with the Department of Preventive Medicine and Environmental Health of the University of Kentucky College of Medicine in Lexington to operate a preventive occupational medicine program at its coal mining operations in eastern Kentucky. Located in the heart of the Appalachian coal fields, Cyprus is one of the leading coal producing companies in the leading coal producing state. Operating both underground and surface mines, and having washing units, laboratories, and office staff, the approximately 1,000 employees in geographically dispersed facilities have access to, and are kept under medical surveillance by, a medical team from the University. This relationship is now four years old, having begun a year after the establishment of the Department of Preventive Medicine and Environmental Health at the College of Medicine, and continues as an ongoing program.

NEEDS AND SERVICES PROVIDED

There are a wide variety of services provided as part of the occupational medicine program. These begin with preemployment examinations, which include standard medical evaluations with special attention being paid to pulmonary function results, chest X-ray, and a mandated drug screen. A program for yearly interim exams has been established for all "at-risk" individuals, defined as any person who spends significant or regular time at a mine site. These yearly interim exams are offered to all employees and are conducted on all three shifts at a location at the mine work sites. The focus of these examinations are on pulmonary function, hearing and vision testing, and a review of the general health status of the individual. Given the locations of the mine, washer, and office sites, there is a background of traditional Appalachian health problems.

These background problems include elevated rates of heart disease, diabetes, and other nutritional problems, as well as problems associated with either poverty or lack of education. Nutritional research specifically done on miners has demonstrated poor eating patterns and it does not appear as if working miners, with their adequate income, will pursue an improved diet with the money available to them.

In addition to the yearly interim exams, the company has established a program for periodic examinations of all employees, cycled by birthmonth, the periodicity depending on age, job category, and similar factors. These exams are offered on a voluntary basis and include a thorough medical review, physical examination, and appropriate laboratory tests.

In addition to these services, many of which serve a preventive function, there is care given for injury evaluations, nonoccupational illness evaluations, and follow-ups for disabled mine employees, both those on short-term and long-term disability. University personnel assist employees with appropriate referrals for both work-related and non-work-related conditions, and the medical staff participates in special projects such as health education, some of which is done through miner re-training activities, and other medically-related activities, such as local blood drives.

PROBLEMS OF SPECIAL IMPORTANCE

Clearly, in any mining population attention to pneumoconioses is of special importance. As part of the establishment of this program a chest X-ray was obtained on all personnel, with a follow-up scheduled for the near future. The prevalence rate of pneumoconioses was small, and the patterns found on X-ray correlated well with specific occupational histories.

As might be expected, a small number of what appeared to be traditional coal workers' pneumoconiosis (CWP) cases were detected. These generally occurred in older miners, most of whom were still working underground. However, a few cases were noted in previous underground miners who were now working at surface operations. Other X-ray abnormalities were more compatible with silicosis, in workers such as drillers and driller helpers who had had a life-long career working in surface operations and who rarely were exposed to coal dust per se.

As might be expected in any general population, other X-ray abnormalities were detected, such as a high prevalence with what appeared to be old histoplasmosis, a common finding in Kentucky, and evidence of old tuberculous infections, as well as pulmonary abnormalities not directly related to mining activity. Each employee was sent a letter with the findings as noted, sharing with them the fact that their X-ray was either normal or abnormal, and a copy of the official report was sent with the suggestion to review matters with one's personal physician or to come to the medical department for further assistance. A significant number of employees who received letters noting a wide range of abnormalities availed themselves of visiting or calling the medical department. Ongoing attention is given to the matter of dust levels at the workplace. With modern mining techniques and ventillation, the dust levels in underground facilities are kept at low levels. At surface operations there is the use of dust-suppression techniques as well as a program for using respirators, as required.

Another special problem related to workers engaged in mining activity is the matter of noise exposure. Baseline audiograms on all employees and all new hires, show that some level of hearing deficit is a common finding in this population. Complicating matters, but amenable to study, is the fact that many employees have other significant non-occupational noise exposures such as hunting and/or trap shooting, motorcycle use, exposure to loud music, use of chainsaws, and other noisy activities. The majority of newly hired individuals also demonstrate hearing loss of some degree, but as part of the preventive health program for company employees a hearing conservation program has been developed, as well as hearing protection being made available to workers.

As noted above, there are special problems in this group of workers related to the background of disease in this area, factors not related to employment.

PROBLEMS IN ESTABLISHING A PROGRAM

Although there has been an excellent four-year cooperative effort between Cyprus Minerals and the Department of Preventive Medicine and Environmental Health, this program was established only after some education on both sides. From a corporate perspective, there was the need to educate both central and local administrators as to the role of an organized medicine program, especially one utilizing the services of a university based 125 to 150 miles from the actual operations. There was some initial resistance by the existing local medical community to the idea of university-based personnel developing and operating a medical program. Another logistical problem was to staff facilities, attempting to utilize as much as possible, local personnel. Because of the relative small size of the medical communities and the small number of well-trained personnel, this in particular has proven difficult.

SOLUTIONS TO PROBLEMS

Needless to say, most real or potential problems were successfully dealt with, which allowed this program to become established and continue to do well over the years. University personnel met with corporate and local managerial staff and there was a mutual exchange of views. The possibility for potential conflict in operating a program was minimized, since corporate policies, passed on from the corporate medical director in Denver, guide the program. The on-site medical staff always remembers that the best interests of the patient comes first and fortunately, corporate and patient interests most often coincide. It was clear that the university staff had much to learn about the day-to-day operation of coal company facilities, and there was a period of education of the members of the Department so that they could better understand the working realities of coal operations. Much of this was done by sharing information. Initially there were many field trips made to mine facilities, including visiting drag line operations, work in active mining pits, washing facilities, laboratory facilities, and underground mines. One continuing aspect of the program is a series of on-going, on-site visits by medical personnel on a regular basis to all operations. This not only continues to educate and reinforce the experience of the medical staff, but allows on-site interaction between the medical staff and miners at times other than those related directly to medical examinations.

The staffing for the occupational medicine program comes from the Department of Preventive Medicine and Environmental Health, based in Lexington. At the most distant facility at the southeastern corner of the state in Middlesboro, there is the main medical department office where all health records are maintained. A medical assistant on the staff is available daily to interact with patients, management, and others as necessary. Traveling from Lexington each week is an occupational physician assistant who spends one day at the medical office in the Hazard, Kentucky area and then travels on to Middlesboro the second day, performing the necessary hands-on medical evaluations required. A board-certified specialist in occupational medicine regularly goes to both sites and is responsible for all patient management questions and oversight of all patient records. Twenty-four hour communications is maintained to mine management for any routine or special problems that may arise.

Recognizing that there is a need for on-site medical evaluations that may occur on days when the Lexington staff are not present, arrangements have been made in both communities served by this program to have local physicians act as surrogates. These local practitioners serve at the request of the program director in Lexington and communicate with him regarding any substantive matters requiring decision making. By having such backup, no time is lost in processing new hires, evaluating injured workers, or in any other way in taking care of the company's needs.

Another aspect of the program which facilitates corporate/university interactions has been the establishment of a joint occupational health committee, which includes the corporate medical director, the director of the university program, safety personnel, and senior human resources management personnel. These individuals act frequently on an informal basis and come together formally to review the status of the program, discuss on-going or potential future difficulties, and to provide general oversight and direction for the program. It is through this mechanism that arrangements can be made to minimize disruption of production time when

yearly interim exams are scheduled, which as noted above are done on all three shifts at the mine sites. For such examinations no more than two hours, and often less, is required to have the individual report for their exam, complete the procedures, and return to their regularly assigned duties.

Another aspect of the program is active involvement and participation with members of the local medical communities. Although based at a University hospital in Lexington, the program director holds courtesy appointments at the two major community hospitals in Hazard and Middledboro, and meets from time to time with individual physicians, medical boards, and hospital administrators. Initial apprehensions that a program such as this would diminish the patient activities of the local practitioners was quickly dispelled as these yearly examinations uncovered many previously unknown conditions, including diabetes, hypertension, heart disease, and other similar problems, which were then referred back to the local practitioners in the community.

ADDITIONAL UNIVERSITY RELATIONSHIPS

In addition to the medical program described above, the interaction between the corporation and the University has been fruitful in other areas. The University has the BRASH (Behavioral Research Aspects of Safety and Health) working group, a research and service organization comprised of individuals from many disciplines. Principle members of this group include educational psychologists, professors in public administration, community health nursing, and behavioral science, as well as the occupational physician who oversees the Cyprus-sponsored medical program. In addition, other associate members of the group include epidemiologists, nutritionists in both home economics and medical anthropology, and many other professional staff from the University. The presence of this group and the excellent working relationship with the coal company have fostered research activities in several areas. The ergonomics group at the University have used miners from Cyprus facilities for simulated mine activities and to better understand oxygen demand and other factors related to mine work. Nutritional work, including detailed surveys by a medical anthropologist, have been carried out by mutual agreement with Cyprus. The offices of the coal company and the activities of the medical program are utilized as a training site for residents in occupational medicine, and these physicians are made welcome at the mine site to learn first-hand about the mining industry. Free access to information has even allowed students in the University's Master of Science in Public Health degree program to utilize corporate medical records for analytical purposes, such as relating hearing loss with particular pieces of equipment and non-occupational causes of hearing loss among the mine employees. As a spinoff from this research, other activities are facilitated and the BRASH group has been especially successful in securing research funds from the United States Bureau of Mines, the NIH, and other similar agencies.

CONCLUSION

The success of this program, focusing as it does on the particular health problems of miners but also providing a wide range of preventively-oriented services, demonstrates that a university medical staff in the field of preventive medicine with its traditional population-oriented approach can successfully cooperate with a centrally-located corporate medical department and local mine management to provide health care services to miners. These mutually agreed to activities make resources available that go beyond the scope of any single practitioner and eliminate many logistical problems for the coal company. This successful university/corporate partnership demonstrates how mutual interactions can be beneficial to both parties.

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Transactions de la VIIe Conférence Internationale sur les Pneumoconioses | *Tome*
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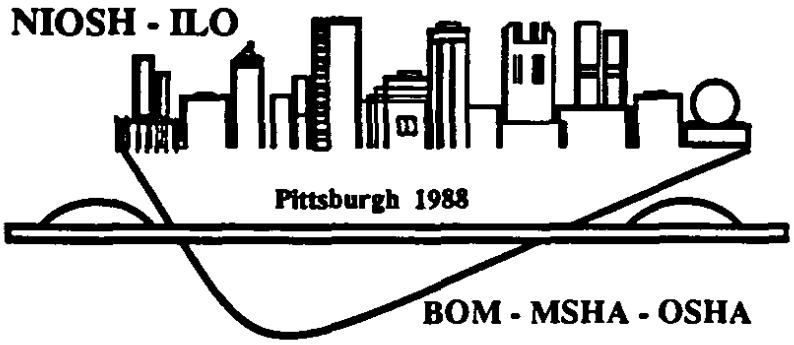

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