Occupational and environmental medicine: sustainable development?

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Occupational medicine is evolving to meet the needs of the 21st century. There is a need to define the remit of occupational and environmental medicine in order to facilitate the development and maintenance of requisite competencies, the establishment of educational goals for practitioners and production of a professional product for the global market place. The delivery of occupational health services will be underpinned by quality assurance systems.

Key words: Competence; health surveillance; occupational and environmental medicine; public health; quality assurance; rehabilitation; risk communication; sustainable development.

INTRODUCTION

The development of occupational medicine has been long, and influenced by social developments as much as, if not more than, advancements in medical science. The observations, writings or lectures of Agricola, Paracelsus, Ramazzini, Hamilton, Thackrah and Hunter, to name but some of the 'movers and shakers' of their day, described the ill health effects of working environments and challenged both industry and society to improve. The industrial revolution, which began in the United Kingdom during the latter half of the eighteenth century, initiated such rapid social change that the environmental and health effects of industrial production methods overwhelmed the societal infrastructure, leading to environmental pollution, insanitary living conditions and occupational diseases. Early editions of Hunter’s The Diseases of Occupations illustrate the changes and their effects. Similar changes have occurred wherever there has been industrial development, such that occupational medicine and occupational health have become concerned with the ill health effects of a global economy.

One effect of taking a global perspective of the production of wealth has been the consideration of the need to control the consumption of natural resources and the effects of industrial emissions or the accidental escape of hazardous materials into the environment. International occupational and environmental medicine in the twenty-first century will take place within organizations that conduct their business across national borders facing laws and regulations, standards of practice, and ethical codes from a variety of sources, including countries, governments, international organisations and trade blocks. The increased international movement of labour will mean that even nationally based organizations will have to increase their awareness and understanding of the global marketplace.

What are the challenges facing occupational medicine? There are several issues to confront:

1. clarification of the raison d'être of occupational and environmental medicine,
2. the development and maintenance of requisite competencies,
3. the development and maintenance of quality-assured clinical practice.

WHAT IS OCCUPATIONAL AND ENVIRONMENTAL MEDICINE?

Historically, occupational medicine has been concerned with the diagnosis of occupational disease resulting from dirty and uncontrolled workplaces. Whilst this is likely to remain an important function of occupational medicine globally, occupational medicine practice in the so-called developed nations has become concerned with the assessment of fitness for work, the rehabilitation of workers who are absent from work, tertiary prevention as well as health surveillance in the workplace. This has
been described in the Netherlands, but is true elsewhere. Fundamental to these processes is the ability to identify hazards and to assess risks to health (Figure 1). Risk management is concerned with evaluating risks and taking appropriate action. This may take place at one of several levels (individual, company, community and society) and it may take the form of risk elimination, risk reduction, risk transfer or risk acceptance. Decisions taken in the context of risk management require, therefore, a careful consideration of needs, robust decision-making processes and effective risk communication. Sadhra and Rampal refer to a framework for risk assessment embracing collaborative involvement of stakeholders. It was proposed by the Commission on Risk Assessment and Risk Management to engage the various federal agencies in the US in solving public health and environmental health problems. The process begins with the formulation of a problem in the context of public and environmental health, followed by the identification and evaluation of the risks. The options for risk reduction are listed and evaluated with reference to social, economic, ethical and legal constraints or needs. The final decision is taken after all the stakeholders have been consulted. A similar process is likely to take place at company level or, indeed, at individual level, albeit perhaps less explicitly. Occupational medicine can contribute to such processes where there is a question about fitness for work, the relationship between health and the work environment or about the effects of industrial emissions on the community at large.

The practice of occupational medicine is recognized as a contributor to the overall improvement of the public's health. In many countries the term 'occupational medicine' has been surpassed by the term 'occupational and environmental medicine'. The American College of Occupational and Environmental Medicine aims to promote optimal health and safety of workers, workplaces and environments by education of health professional and the public, stimulating research, enhancing quality of practice, guiding public policy, and advancing the field of occupation and environment medicine.

In the UK the national health promotion strategy Saving Lives: Our Healthier Nation identifies workplaces as one of the important settings for achieving reductions in coronary artery disease, mental ill health, cancer, accidents, and diseases caused by the transmission of blood-borne viruses. There is also a national strategy for dealing with major chemical incidents, ensuring that directors of public health receive advice from regional centres staffed by medical toxicologists and occupational physicians. The specialist training of occupational physicians and the experience of giving clinical management advice based on the analysis of exposures to hazards makes them important partners in this multi-disciplinary service.

**THE DEVELOPMENT AND MAINTENANCE OF COMPETENCIES**

Occupational medicine is recognized as a medical speciality in many countries of the world. In 1996 it became recognized as a specialty within the European Union. This means that use of the term 'specialist' in European legislation relevant to occupational medicine will require an understanding of what the term signifies, with respect to the training and the expected competencies. The development of a European network of occupational physicians (European Association of Schools of Occupational Medicine; European Network of Societies of Occupational Physicians; the Union of European Medical Specialties) has highlighted differences both in the way that occupational physicians are trained and practice in the member states. Differences exist also with respect to the US and Australasia. In a global marketplace there will be advantages in defining a set of core knowledge, experience and competencies that will equip occupational physicians for practice in the twenty-first century and which will be relevant to the needs of employers.

Some progress has been made at the European level to achieve this. A modified Delphi technique has been used to assess the level of agreement between occupational physicians from 23 countries in the European Union and European Trading Area. In the initial round of questioning the participants were asked to rank eight different subject areas and then to rank the importance of knowledge, experience and competence for each area. In the second round respondents were asked to place each of the items within the 24 sections of the questionnaire in rank order. Occupational hazards to health was the highest ranking section overall and with respect to the assessments of knowledge, experience and competence. Management scored lowest overall and for knowledge and experience. Environmental medicine was scored just higher than management, with assessment of disability above that. The results painted a picture of a high level of agreement about the importance of the main topic areas,
but also a very conventional one. Further work will be required to examine whether potential employers of occupational physicians, or purchasers of occupational health services, agree with the results. A previous survey comparing the opinions of occupational physicians, managers and union representatives about the importance of different aspects of service revealed that there was a consensus about advice on the work environment and advice on ill health retirement. Rehabilitation of sick workers was rated highly by occupational physicians, but less so by managers. Health promotion and first aid was valued by trades' union representatives.

The requirement for maintenance of knowledge, skills and competencies is likely to become formalized over the next few years. In the UK, at least, this requirement will be linked to re-registration. The process of continuing medical education or continuing professional development exists in a number of countries already. Much of the participation in continuing medical education is centred on the acquisition and renewal of knowledge. However, in an era when the public appears to be increasingly concerned about the behaviour and incompetence of doctors it seems likely that greater attention will be paid to maintaining and improving the processes and outcomes of clinical interactions. A competent occupational physician must be able to communicate at levels of an organization and to understand how to intervene effectively on behalf of patients or managers. However, the advice given must be consistent with good medical practice and be evidence-based.

THE DEVELOPMENT AND MAINTENANCE OF QUALITY-ASSURED CLINICAL PRACTICE

Quality of clinical practice may be defined in various ways. Jarman has listed the following components as quality criteria: availability, appropriateness, effectiveness, acceptability and efficacy. Quality assurance is an established concept in industry and some occupational health services have implemented quality assurance systems. Corporate responsibility for quality in the UK National Health Service (NHS) healthcare providers became a statutory duty in April 1999 and there are likely to be knock-on effects from this for both the public and private sectors. Clinical governance is defined as a system through which NHS organizations are accountable for continuously improving the quality of their services and safeguarding high standards of care by creating an environment in which excellence will flourish. The systematic approach to quality will include the setting of standards for the various aspects of clinical practice and rigorously auditing compliance. Over the ensuing years there will be the development of clinical guidelines to assist clinicians, with the aim of reducing unacceptably wide variations in practice, where this is held to be clinically important. Evidence-based guidelines will be helpful if the evidence on which they rely is sound and they are relevant and applicable. In addition, we must not lose sight of the fact that occupational medicine does not operate in a cultural vacuum. This is true particularly when considering international occupational and environmental medicine.

It may be necessary to temper practice relying on research-based evidence, taking into account the value system where the practice takes place.

The challenge for the development of evidence-based guidelines will be the current lack of studies assessing the results of interventions in the workplace. Research priorities must be altered to give less priority to cross-sectional multivariate epidemiological surveys and more to large-scale intervention studies measuring outcomes. The cost to industry of occupational health practices is enormous. Much of the activity of occupational health services is required by legislation. Even though a cost-benefit analysis may have been conducted prior to the introduction of the legislation, it is unlikely that the clinical evidence used was strong.

The development of occupational and environmental medicine must be concomitant with the developments that are taking place in the global economy and in society. We are moving into an era where there will be an emphasis on sustainable development in industry. Sustainable development in occupational and environmental medicine will be achieved by ensuring that the practice of occupational physicians meets the needs of individuals, companies and communities. This requires establishing the validity of occupational health practice, the competency of occupational health practitioners and assuring the quality of occupational health services.

REFERENCES


