CHAPTER I

INTRODUCTION

If recent history is any guide, there are troubling signs for the hospital community that it may soon be the next “industry sector” to be targeted by environmental law enforcement authorities.\textsuperscript{1-2} Government’s regulatory efforts over the past 4-5 years, suggest growing public concern about human health risks posed by hazardous materials and wastes used and generated by hospitals.\textsuperscript{3-6} Recent environmental enforcement actions by the state pollution control boards/committees illustrate government’s willingness to take hospitals to task for regulatory violations.\textsuperscript{5-8}

Despite the fact that hospitals provide public service facing financial difficulties, hospital administrators can no longer afford to overlook the environmental issues facing the healthcare establishments. Many hospitals, share institutional characteristics that make proactive compliance efforts difficult to achieve and maintain. Most modern environmental regulatory efforts were developed to address pollution caused by manufacturing facilities.\textsuperscript{5} In the manufacturing context, each product typically is the result of a known linear process of material inputs and outputs. This makes the identification of potential sources of pollutants relatively straightforward, because the inputs (potential pollutant sources) are readily identifiable, the finished product is known, and the byproducts (or waste) can be predicted, monitored, and controlled. In contrast to the manufacturing model, the hospital’s goal or “product” is sound medical care.\textsuperscript{9} The key “inputs” to the hospital’s process are not fixed raw materials, but patients and their varied medical needs. Much of the hospital’s use of hazardous materials, and generation of pollutants, are ancillary to the goal of providing sound medical care. The use of material inputs, and therefore the pollutants generated, are unpredictable and can change radically from day to day. Moreover, because the use of materials is dictated by particular patient needs and medical judgment, the changes made to the hospital’s “production process” are not
typically administratively monitored. Therefore, controlling the type, quantity, and concentration of pollutants on any particular day is extremely difficult. 

Hospitals have a multi-faceted management structure. "Management" is the key word in "environmental management," and the very complicated management structure that most hospitals have makes environmental management a difficult task. For example, most hospitals have both administrative and medical managers. The role of the medical staff is to direct and supply the medical care within the hospital. The role of the administrative staff is to ensure that the hospital has the necessary resources available to supply that medical care. While good communication between medical and administrative managers is necessary for overall hospital operation, the two management chains of command are in many respects on parallel tracks where daily operations are concerned. From an environmental management viewpoint, this dual management structure is often further complicated by the fact that different hospital departments exercise independent control over processes that involve hazardous materials use and waste generation. For example, hospital laboratories use and dispose of a range of chemicals used for analytical purposes. Noteworthy, housekeeping departments are responsible for the important job of keeping the hospital clean, use and dispose of chemical disinfectants. The hospital engineering department is responsible for waste incineration, wastewater systems, heating fuel storage, boilers etc. The hospital procurement department is responsible for procuring the chemicals etc. The work of each of these departments & others, and their management affects the hospital’s environmental compliance efforts. Yet, the work of each of these departments is often administratively independent of the other departments. Therefore, this typical hospital management structure complicates the environmental compliance efforts.

Hospitals are also part of the environment. Structure and functions of hospitals are affected by the overall environment and hospitals themselves affect the environment. In fact, hospitals can have major impact on the environment if not properly managed. Issues that need to be broadly looked into are: emissions to water, air emissions, and waste treatment and disposal
in addition to problems arising due to lighting, traffic, air-conditioning, mosquitoes, flies etc.\textsuperscript{10-11} In addition to it, the environmental hygiene within the hospital also has impact on the patients and their relatives, doctors, and paramedical staff. In particular, the hazardous nature of some healthcare wastes needs special attention. Biomedical Waste Management has recently emerged as an issue of major concern not only to hospitals, nursing home authorities but to the environmental and law enforcement agencies, media and the general public also. Awareness of staff and patients about environmental health issues also has the capacity to affect the overall environment of the hospital.\textsuperscript{12}

**Environmental Management**\textsuperscript{13-15} is not, as the phrase could suggest, the management of the environment as such but rather the management of humans’ interaction with and impact upon the environment. The need for environmental management can be viewed from a variety of perspectives. A more common philosophy and impetus behind environmental management is the concept of carrying capacity. Simply put, carrying capacity refers to the maximum number of organisms a particular resource can sustain. The concept of carrying capacity, whilst understood by many cultures over history, has its roots in Malthusian theory.\textsuperscript{13} Environmental management is therefore not the conservation of the environment solely for the environment's sake, but rather the conservation of the environment for humankind's sake. Environmental management involves the management of all components of the bio-physical environment, both living (biotic) and non-living (abiotic). This is due to the interconnected and network of relationships amongst all living species and their habitats. The environment also involves the relationships of the human environment, such as the social, cultural and economic environment with the bio-physical environment.

Environmental management contributes to building a society where support for the environment is practiced comprehensively and effectively through its in-house environmental management activities, its products and services. In nutshell, it refers to the management and control of the
environment and natural resources systems in such a way so as to ensure the sustainability of development efforts over a long-term basis.\textsuperscript{14}

In order to minimize these environmental problems, action should be taken to deal with pollution at source, i.e. waste should be segregated and concentrated within health care institutions, and whenever possible it should be disposed off safely. Also, due consideration must be given to the impact on environment, especially to risk of pollution of water, air and soil, besides aesthetics. No doubt, lots of efforts are being done globally. Pollution Control Boards have been set up in all states to look after environmental matters. Various Acts and Rules have been formulated in this direction. Also, Environmental Management Systems ("EMS") are becoming the coin of the environmental compliance realm. Defining a policy sets an objective for the organization and gives it a direction.

Hospitals in general have been slow to develop an interest in environmental management. In a hospital, environmental compliance should be valued because it is protective of the public health, and there are significant potential liabilities associated with non-compliance. Indeed, health care professionals can be expected to particularly appreciate the public health implications of environmental compliance, since health is their business.\textsuperscript{9} However, hospitals also have a very specific human health priority that may affect the relative priority given to environmental compliance. Put simply, it is the hospital’s core mission to prevent, diagnose, and cure serious (and often acute) injury and illness. The medical care necessary to carry out this mission often involves the acceptance of potential risks involved in the use of hazardous materials (and accompanying waste generation) to address actual serious medical conditions. Hospital staff often tends to resist environmental compliance measures perceived to be inconsistent with the hospital’s core mission. Hospitals can and should act now to prevent this from happening.\textsuperscript{9}

It would, therefore, be interesting to tackle the ‘Environmental Stress’ related management of a healthcare establishment in an urban sphere and draw guiding inferences and analogies for the management of not only healthcare establishments in other urban areas but in the rural complex, a
very poor cousin of the urban one. With this in mind, the present study has been planned with its main focus on “Environmental Management of a Healthcare Establishment” taking Post Graduate Institute of Medical Education & Research, Chandigarh which is considered an island of excellence in the field of medical care and medical education, as an example. It started functioning in 1962 with broad objectives to train postgraduate students of medical services, conduct high quality research relevant to the local and national needs and provide patient care of the highest quality. The first patient to get admitted was on June 23, 1962. The Institute has excelled in all the three core areas namely patient care, medical education and research.\(^\text{16}\)

The patient care loads over the years has been increasing exponentially and now it is becoming unmanageable. From an annual attendance of 1,25,163 out patients and 3,328 admissions in 1963-64, the figure has gone up to 12,21,045 outpatients and 52,164 admissions in 2007-2008 with an annual rate of increase of about 20% to 30%. The Institute provides tertiary care in all the medical and surgical specialties to the patients, who come not only from the neighbouring states but also from far off states like West Bengal and Bihar.\(^\text{16}\)

**Objectives of the study:**

I. To study the present status of environmental sanitation in one healthcare establishment of Chandigarh.

II. To ascertain the status of biomedical waste management system of the selected health care establishment.

III. To ascertain the conformance of the selected healthcare establishment to ISO 14000 standards.

IV. To evaluate the selected healthcare establishment as a Health Promoting Hospital (HPH).
V. To review the existing government policies and legislations regarding hospital environment.