

Internship at
Punjab Health Systems Corporation, District Hospital-
Fatehgarhsahib, Punjab

By

Sagrika Singh

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The IIHMR University, Jaipur

1, Prabhu Dayal Marg, Sanganer, Airport
Jaipur 302029, Rajasthan
Ph: 0141 3924700, Fax: 3924738
Website: www.iihmr.edu.in

INTRODUCTION

Biomedical waste management has recently emerged as an issue of major concern not only to hospitals, nursing home authorities but also to the environment. The bio-medical wastes generated from health care units depend upon many factors such as waste management methods, type of health care units, occupancy of healthcare units, specialization of healthcare units, ratio of reusable items in use, availability of infrastructure and resources etc.

The proper management of biomedical waste has become a worldwide humanitarian topic today. Although hazards of poor management of biomedical waste have aroused the concern world over, especially in the light of its far-reaching effects on human, health and the environment.

Now it is a well-established fact that there are many adverse and harmful effects to the environment including human beings which are caused by the "Hospital waste" generated during the patient care. Hospital waste is a potential health hazard to the health care workers, public and flora and fauna of the area. The problems of the waste disposal in the hospitals and other health-care institutions have become issues of increasing concern.

The rules for management and handling of biomedical wastes are summarized, giving the categories of different wastes, suggested storage containers including color-coding and treatment options. Existing and proposed systems of health-care waste management are described. A waste-management plan for health-care establishments is also proposed, which includes institutional arrangements, appropriate technologies, operational plans, financial management and the drawing up of appropriate staff training programs. According to **Biomedical Waste (Management and Handling) Rules, 1998** of India "Any waste which is generated during the diagnosis, treatment or immunization of human beings or animals or in research activities pertaining thereto or in the production or testing of biologicals.

The Government of India (notification, 1998) specifies that Hospital Waste Management is a part of hospital hygiene and maintenance activities. This involves management of range of activities, which are mainly engineering functions, such as collection, transportation, operation or treatment of processing systems, and disposal of wastes.

One of India's major achievements has been to change the attitudes of the operators of health care facilities to incorporate good HCW management practices in their daily operations and to purchase on-site waste management services from the private sector

World Health Organization states that 85% of hospital wastes are actually non-hazardous, whereas 10% are infectious and 5% are non-infectious but they are included in hazardous wastes. About 15% to 35% of Hospital waste is regulated as infectious waste. This range is dependent on the total amount of waste generated

Classification of Bio-Medical Waste

The World Health Organization (WHO) has classified medical waste into eight categories:

- ‘ General Waste
- ‘ Pathological
- ‘ Radioactive
- ‘ Chemical
- ‘ Infectious to potentially infectious waste
- ‘ Sharps
- ‘ Pharmaceuticals
- ‘ Pressurized containers

Management

Biomedical waste must be properly managed and disposed of to protect the environment, general public and workers, especially healthcare and sanitation workers who are at risk of exposure to biomedical waste as an occupational hazard. Steps in the management of biomedical waste include generation, accumulation, handling, storage, treatment, transport and disposal.

Disposal occurs off-site, at a location that is different from the site of generation. Treatment may occur on-site or off-site. On-site treatment of large quantities of biomedical waste usually requires the use of relatively expensive equipment, and is generally only cost effective for very large hospitals and major universities who have the space, labor and budget to operate such equipment. Off-site treatment and disposal involves hiring of a biomedical waste disposal service (also called a truck service) whose employees are trained to collect and haul away biomedical waste in special containers (usually cardboard boxes, or reusable plastic bins) for treatment at a facility designed to handle biomedical waste.

Generation and accumulation

Biomedical waste should be collected in containers that are leak-proof and sufficiently strong to prevent breakage during handling. Containers of biomedical waste are marked with a [biohazard](#) symbol. The container, marking, and labels are often red.

Discarded sharps are usually collected in specialized boxes, often called *needle boxes*.

Storage

“Storage refers to keeping the waste until it is treated on-site or transported off-site for treatment or disposal. There are many options and containers for storage. Regulatory agencies may limit the time waste can remain in storage. Handling is the act of moving biomedical waste between the point of generation, accumulation areas, storage locations and on-site treatment facilities. Workers who handle biomedical waste must observe *standard precautions*.”

Treatment

The goals of biomedical waste treatment are to reduce or eliminate the waste's hazards, and usually to make the waste unrecognizable. Treatment should render the waste safe for subsequent handling and disposal. There are several treatment methods that can accomplish these goals.

“Biomedical waste is often [incinerated](#). An efficient incinerator will destroy pathogens and sharps. Source materials are not recognizable in the resulting ash.”

An [autoclave](#) may also be used to treat biomedical waste. An autoclave uses steam and pressure to [sterilize](#) the waste or reduce its microbiological load to a level at which it may be safely disposed of. Many healthcare facilities routinely use an autoclave to sterilize medical supplies. If the same autoclave is used to sterilize supplies and treat biomedical waste, administrative [controls](#) must be used to prevent the waste operations from contaminating the supplies. Effective administrative controls include operator training, strict procedures, and separate times and space for processing biomedical waste

Microwave disinfection can also be employed for treatment of Biomedical wastes. Microwave irradiation is a type of non-contact heating technologies for disinfection. Microwave chemistry is based on efficient heating of materials by microwave dielectric heating effects. When exposed to microwave frequencies, the dipoles of the water molecules present in cells re-align with the applied electric field. As the field oscillates, the dipoles attempts to realign itself with the alternating electric field and in this process, energy is lost in the form of heat through molecular friction and dielectric loss. Microwave disinfection is a recently developed technology which provides advantage over old existing technologies of autoclaves as microwave based disinfection has less cycle time, power consumption and it requires minimal usage of water and consumables as compared to autoclaves.

For liquids and small quantities, a 1–10% solution of [bleach](#) can be used to disinfect biomedical waste. Solutions of sodium hydroxide and other chemical disinfectants may also be used, depending on the waste's characteristics. Other treatment methods include heat, [alkaline digesters](#) and the use of microwaves.

For autoclaves and microwave systems, a shredder may be used as a final treatment step to render the waste unrecognizable.

FATEHGARH SAHIB

Fatehgarh Sahib is a town and a sacred pilgrimage site of Sikhism in the north west Indian state of Punjab.^{[1][2]} It is the headquarters of Fatehgarh Sahib district, located about 5 kilometres (3.1 mi) north of Sirhind.

Fatehgarh Sahib is named after Fateh Singh, the 7 year old son of Guru Gobind Singh who was seized and buried alive along with his 9 year old brother Zoravar Singh, by the Mughal Army under the orders of commander Wazir Khan during the ongoing Muslim-Sikh war of early 18th century.^{[1][2]} The town experienced major historical events after the martyrdom of the sons in 1705, with repeated change of control between the Sikh and Muslim rulers.

The town features historic Gurdwaras, including the underground Bhora Sahib marking the location where the two boys refused to convert to Islam and fearlessly accepted being bricked alive.^{[1][4]} In contemporary times, the town is the site of educational institutions such as the SGPC run Guru Granth Sahib University and Baba Banda Singh Bahadur Engineering College.

History

The city is a historically important settlement 40 kilometres (25 mi) north of the city of Patiala. It is a major pilgrimage center in Sikhism

The Gurdwara Fatehgarh Sahib is the major landmark in the town. It marks the location where two youngest sons of Guru Gobind Singh – 7 year old Fateh Singh and 9 year old Zorawar Singh – were betrayed by their cook and servant Gangu to the Mughal army, seized, asked to convert to Islam and when they refused they were buried alive under the orders of Wazir Khan.^{[1][6]} Their martyrdom on 26 December 1705 has been remembered by the Sikhs by naming the site as Fatehgarh after the youngest boy killed, and by building a large Gurdwara in 1843.^[1] The town is also the location where the Sikhs took revenge by capturing it from Wazir Khan in 1710 and killing him.^{[1][3]} However, the Sikh militia was defeated again few years later and the town remained in the control of Muslim rulers,

including later an appointee of Ahmed Shah Durrani till 1764, when Khalsa recaptured it by defeating and killing the appointee Zain Khan.



Fatehgarh Sahib district

Fatehgarh Sahib district

district

Nickname(s): FGS



Coordinates:  30.38°N 76.23°ECoordinates: 

30.38°N 76.23°E	
Country	 India
State	Punjab
District	Fatehgarh Sahib
Population (2011 census)	
• Total	600,163
Languages	
• Official	Punjabi
Time zone	IST (UTC+5:30)
Website	www.fatehgarhsahib.nic.in
<i>"Fatehgarh Sahib". Sikhtourism. Retrieved 2008-06-30.</i>	

Fatehgarh Sahib district is one of the twenty-two districts of the state of Punjab in North-West India, with its headquarters in the city of Fatehgarh Sahib.

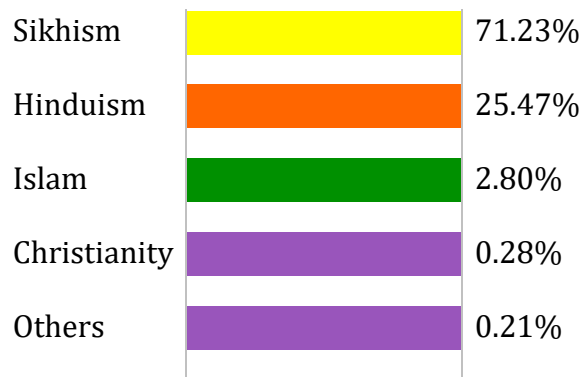
The district came into existence on 13 April 1992, Baisakhi Day and derives its name from Sahibzada Fateh Singh, the youngest son of 10th Guru Gobind Singh, who along with his brother was bricked-up alive on the orders of Suba Sirhind, Wazir Khan in 1704,^[1] and which is now the site of the 'Gurudwara Fatehgarh Sahib'.

As of 2011, it is the second least populous district of Punjab (out of 22), after Barnala.

Demographics

Religion in Fatehgarh Sahib District^[4]

Religion	Percent
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According to the 2011 census Fatehgarh Sahib district has a population of 600,163^[3] This gives it a ranking of 525th in India (out of a total of 640).^[3] The district has a population density of 508 inhabitants per square kilometre (1,320/sq mi) .^[3] Its population growth rate over the decade 2001-2011 was 11.39%.^[3] Fatehgarh Sahib has a sex ratio of 871 females for every 1000 males,^[3] and a literacy rate of 80.3%

PUNJAB HEALTH SYSTEM CORPORATION

Hospital Services at the Secondary level play a vital and complementary role to primary health care. The Government sector is engaged both in preventive and curative aspects of health care. It was realized that District Hospitals, Sub-Divisional Hospitals and Community Health Centres lack basic medical equipment and diagnostic services and have critical gaps in infrastructure. To revamp the whole system, a proposal was drafted to seek assistance from the World Bank. The WB Team visited Punjab in March, 1995, held discussions with His Excellency the Governor, the Chief Minister, the Health Minister, the Chief Secretary and the Secretaries of Line Departments. It also visited a number of medical institutions. As per their recommendations, a workshop was held to ascertain the kinds of improvement required for providing better health care facilities to the people of the State.

The Department of Health and Family Welfare, Punjab, organized a Workshop from 27th to 29th April, 1995 at Kharar in which 33 Senior Doctors including the Director Health Services, all Civil Surgeons, the Deputy Directors and Senior Medical Officers and senior Administrators/ Managers participated. Different groups deliberated on policy issues, surgical, medical and laboratory services and identified the categories of services to be provided at CHC, Sub-Divisional and District Hospitals including requirements in terms of staff, space, instruments and equipment. The Workshop adopted the following resolution: "The group is of the considered and genuine opinion that there should be a fully autonomous and self-sufficient Corporation named Punjab Health Systems Corporation.

This Corporation should be headed by a Chairman, who shall be the Secretary, Health and Family Welfare, Punjab.

The Punjab Health Systems Corporation was enacted through a special Act of Legislation to provide for the constitution of a Corporation for establishing, expanding, improving and administering medical care in the State of Punjab. The Managing Director is the Executive officer of the Corporation and implements the decisions of the Board of Directors and exercises general control and supervision over the hospitals under PHSC. There are 176 Health Institutions under PHSC, out of which are 21 District Hospitals, 2 Special Hospitals, 34 Sub-divisional Hospitals and 119 Community Health Centres. A wide spectrum of health care facilities, preventive, promotive and curative, are provided in these institutions

Civil hospital Fatehgarh sahib

Mission: district hospital Fatehgarh Sahib is a health centre of the people, by the people and for the people. Mission of the hospital is to provide complete ,holistic and affordable health care to all and one from whatever resources and structure health system provides.

Vision: to grow from 100 bedded hospital to 200 bedded by next five years and eventually to a medical teaching institute in future.

District hospital fatehgarh sahib is located at one of the most holy places of Punjab ,where devotees from al corner come from blessings. The hospital is nodal centre at fatehgarh sahib in month of December for jor mel , shok Sabha ,where approx. 12-16lakhs people congregate for religious gathering. Hospital grew from small primary heath centre to district hospital in a period span of 25 years.

Hospital participate in NQAS program run by GOI and state government, enhancing its standards laid by IPHS and improving upon gaps checked from time to time.

Hospital provides curative and preventive health services to its patients in following specialties:

- Emergency and trauma
- Internal medicines, including dialysis
- General surgery
- Skin-leprosy centre
- ENT
- Orthopedics
- Radiology

- gynaecology
- Psychiatry
- Laboratory services
- ICTC
- Isolation wards
- ARV clinic
- Blood bank

Timing: 9am-3pm(winter)

8am-2pm(summer)

Emergency trauma : 24*7(all year)

SWOT Analysis

<i>Strengths</i>	<i>Weakness</i>
• <i>Good support from top level management</i> • <i>Availability of human resources at Urban Health Centers</i> • <i>Fully functional CPMU and Family Planning Bureau</i> • <i>Strong hold over grassroots level implementation</i> • <i>Proximity of private health sector</i> • <i>Good electronic printing media coverage.</i>	• <i>Lack of proper infrastructure to provide all RCH services</i> • <i>Lack of equipments for immunization services</i> • <i>Lack of regular training of health staff of all cadres.</i> • <i>Limited supervision due to lack of mobility support to medical officers and supervisory staff</i> • <i>Weak political motivation and low priority for community</i>

Opportunities	Threats
• <i>Urban Health Project to be launched by state government</i> • <i>Changing mindset of the urban population.</i> • <i>Availability of adequate financial support.</i> • <i>Increased focus of government over urban slums.</i>	• <i>Limited tracking of Migrant population/daily wagers</i> • <i>High Rainfall makes the city prone for flood and Epidemics</i> • <i>Migration (both In and Out migration)</i>

Recommendation

- On finding that there is no team of BMW management in the hospital ,first recommendation was to make a team that will monitor the practice of the BMW management in the hospital.

Sr No	Designation	Name	Signature
1	Nodal Officer	Dr. Sandeep Singh Gill	
2	Nursing Sister	Harmeet kaur	
3	Infection Control Nurse	Naresh Bala	
4	Medical Officer Specialist	Dr. Navdeep Singh Brar	
5	Surgeon	Dr. Parveen Garg	
6	Gynecologist	Dr. Amanpreet kaur	
7	Emergency In-charge	Dr. Kuldeep Singh	
8	Class IV	Jasbir Singh	
9	MRD	Parvinder Singh(MSN)	
9	Chief pharmacist	Sandeep Singh	
10	Store Keeper	Sandeep Singh	
11	Office Superintendent	Amandeep Singh	
12	Security Supervisor		

Senior Medical Officer in
Distt Hospital Fatehgarh Sahib

team was made at the hospital for the BMW and

infection control

- Secondly, lack of PPE is the major concern in the hospital so the team should be responsible to provide proper and sufficient PPE among the staff.
- Training sessions must be conducted in the hospital for the staff as the hospital should not merely depends upon the state office for the training of the staff.



CONCLUSION

- After collecting the primary and secondary data, data analysis was done and certain key findings were obtained. The findings were mainly concerned with practice, lack of team supervision and protection from BMW.
- Recommendations for better and sustained functioning of the BMW practice were given linked with the critical findings:
- The hospital must have a BMW management team that will monitor, supervise the duties in the, management of the waste, it should not be merely the work of nursing in charge.
- Conscious efforts are required by all the staff including doctors, nurses, paramedical staff to ensure the success of BMW management.
- Overall, the hospital follows a good practice in BMW management process and should continue the same by just adding the suggested recommendation to score and ensure a much higher level management process.
- AS= the staff are less in number this can be a reason of getting a good result.