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Guest Editorial

Health Care Waste Management: Are we Serious ?

"Hospitals are intended to heal the sick, but they are also the sources of infection. Ironically, advances in medicine are partly responsible for the fact that, today, hospital infections are a leading cause of death in some parts of the world."

(The World Health Report 1996-Fighting disease, fostering development)

Problem definition

" Ebola" has alerted the entire world about need for serious effort towards safe and sound health care waste management and infection control at all times and everywhere. A stitch in time saves nine and if we do not act, we may need to pay for it like what West Africa had to pay. Hand hygiene is the primary measure to reduce infections. Though the action is simple, the lack of compliance among health-care providers is problematic throughout the world. Following recent understanding of the epidemiology of hand hygiene compliance, new approaches have proven effective. The Global Patient Safety Challenge 2005–2006: "Clean Care is Safer Care" is focusing part of its attention on improving hand hygiene standards and practices in health care and on helping to implement successful interventions.

Data from World Health Organization

Of the total amount of waste generated by health-care activities, about 80% is general waste. The remaining 20% is considered hazardous material that may be infectious, toxic or radioactive. Every year an estimated 16,000 million injections are administered worldwide, but not all of the needles and syringes are properly disposed of afterwards. Health-care waste contains potentially harmful microorganisms which can infect hospital patients, health-care workers and the general public. Health-care waste in some circumstances is incinerated and dioxins and furans and other toxic air pollutants may be produced as emissions. Exposure to dioxins and furans may lead to the impairment of the immune system, the impairment of the development of the nervous system, the endocrine system and the reproductive functions. WHO has established a Provisional Tolerable Monthly Intake for dioxins, furans, and polychlorinated biphenyls. The unsafe disposal of health-care waste (for example, contaminated syringes and needles) poses public health risks.

Unsafe health-care waste management leads to death and disability

Health-care activities lead to the production of waste that may lead to adverse health effects. Most of this waste is not more dangerous than regular household waste. However, some types of health-care waste represent a higher risk to health. These include infectious waste (15% to 25% of total health-care waste) among which are sharps waste (1%), body part waste (1%), chemical or pharmaceutical waste (3%) and radioactive and cytotoxic waste or broken thermometers (less than 1%). Sharps waste, although produced in small quantities, is highly infectious. Poorly managed, they expose health-care workers, waste handlers and the community to infections. Contaminated needles and syringes represent a particular threat and may be scavenged from waste areas and dump sites and be reused. WHO has estimated that, in the year 2000, injections with contaminated syringes caused

- 21 million hepatitis B virus (HBV) infections (32% of all new infections)
- Two million hepatitis C virus (HCV) infections (40% of all new infections)
- 2,60,000 HIV infections (5% of all new infections)

Epidemiological studies indicate that a person who experiences one needle-stick injury from a needle used on an infected source patient has risks of 30%, 1.8%, and 0.3% respectively to become infected with HBV, HCV and HIV. In 2002, the results of a WHO assessment conducted in 22 developing countries showed that the proportion of health-care facilities that do not use proper waste disposal methods ranges from 18% to 64%.

Personal Experiences

We had the opportunity to visit health care institutions across Bangalore City, Karnataka and Gujarat States, Kalmunai, Galle, Hambanthota in Srilanka (post tsunami), NAD province in Indonesia (post tsunami), Papua New Guinea and recently Ghana. We know from health and environmental professional across countries of South East Asia Region in many consultations and training and capacity building exercises conducted at Healthcare Waste Management (HCWM) Cell, at Department of Community Medicine at Bangalore. "Attitude" of health professionals, availability of final treatment options for management of health care waste, lack of training and capacity building opportunities stand out to be major obstacles. Cost of composite material for filling teeth makes dentists continue to use Mercury for which containment measures at source of use and generation requires meticulous care. In many places, major gaps are found in the practice of Universal precautions. Inspite of these imitations, "Star" areas of work in different locations give us hope. Some of the include BMW rules 1998, amendments subsequent to this, " Mercury free" hospitals in Delhi; meticulous segregation practices in certain institutions, development of Common Biomedical treatment facilities across India, training attempts by Environment Management and Policy Research Institute across Karnataka, appointment of Officers to oversee HCWM by Karnataka Heath Systems Development Project (KHSDP) in Karnataka, advocacy efforts by Indian Society of Hospital Waste Management (ISHWM), use of non-burn technology like autoclaving in select institutions like Tata Memorial Hospital, Mumbai stand out as good efforts in this direction.

Impressions

But we are too far from creating safe and sound environments for our own colleagues health professionals and health care workers. Attitudinal change of health care professionals, research, adoption of safe and sound technologies appear to be means to an end.

Probable Solutions

Strengthening Infection control and waste management control committees in every health care institution, ensuring that standard Operative Procedures (SOPs) for segregation at source, disinfection before disposal, practice of Universal precautions are in place; ensuring design and development of antibiotic policies, standard treatment guidelines, surveillance of Hospital Acquired Infections; systems for surveillance of needle stick injuries and post exposure prophylaxis for Hepatitis B and HIV/AIDS. All these are much needed activities which require to be taken on war footing. Medical Council of India (MCI), Rajiv Gandhi University of Health Sciences (RGUHS), Deemed Universities like Sri Devaraj Urs Academy of Higher Education and Research (SDUAHER), Kolar have HCWM and Infection control in the Health Professional curriculum. There is need for strengthening teaching and training strategies, design and development of "Best Practice" demonstration sites, research for use of alternate technologies for the containment, disinfection, final management of health care waste. There is need for "Best Practices" in common biomedical treatment facilities, health monitoring of workers in these facilities, proper compensation, welfare, training and capacity building measures to ensure use of safety devices and equipment. Environment impact monitoring, research for better avenues for the management of glass, plastic, metal needs focus. Health care waste management needs to be developed as: culture: not as rules that need to be followed and let us put all efforts in this direction. Reduce, Recycle and Reuse; Lie Cycle approach , Zero Waste concepts are the "Manthra".

References

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