



Need of CBWTF to Non-Medico Higher Educational Institutes



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Abstract:

Potential diseases generated through biomedical waste of the hospitals is thoroughly discussed by many scholars and researchers but the health impact of biomedical waste generated through non-medico higher education institutes is an ill described area. Present study deals with the biomedical waste generated through different non-medico higher education institutes from Pune territory. Different science laboratories like Microbiology, Zoology, Botany, and Biotechnology are regularly generating biomedical waste and respective waste requires its safe disposal through 'Common Biomedical Waste Treatment Facility (CBWTF)'. In the present study, seventy five higher education institutes generating biomedical waste were selected. Survey was conducted regarding CBWTF. It was found that only three non-medico higher education institutes were reported for availing 'Common Biomedical Waste Treatment Facility'. Others are still following the conventional method of waste disposal. Statistical prediction of potential outbreaks of diseases was recorded.

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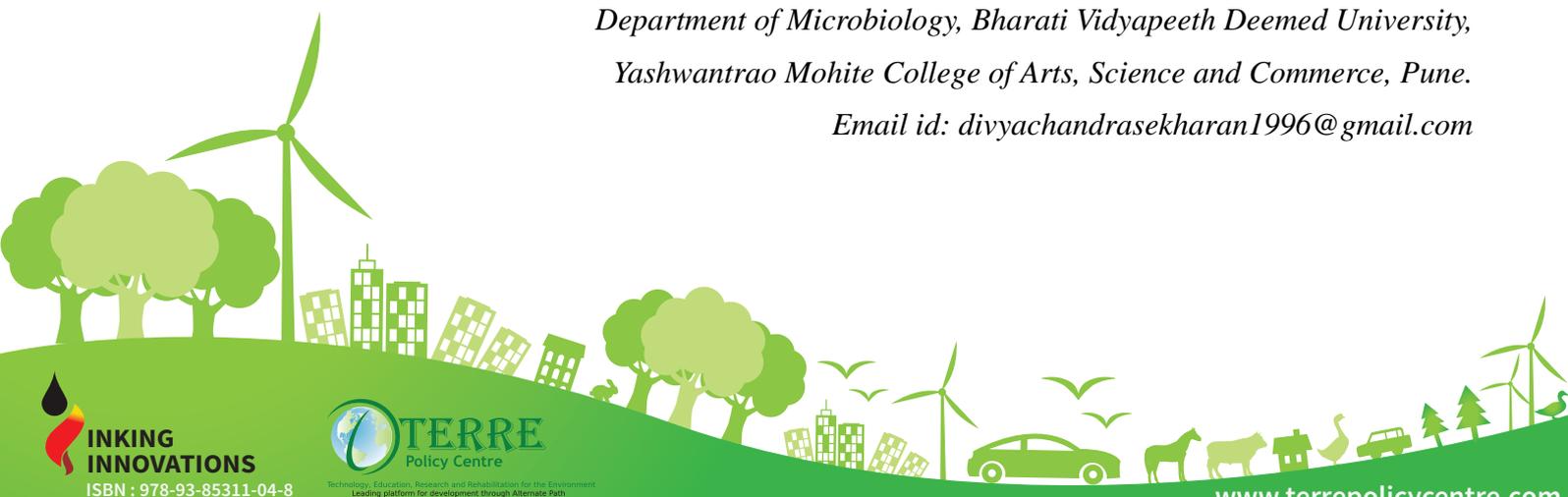
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Introduction:

Generation of biomedical waste takes place through diagnostic practices, vaccination, use of immune sera, research activities and academic activities. It is estimated that 10 to 20 % of biomedical waste generated through health care industries is hazardous with the potential of creating many infectious diseases (Sanjeev R. et al. 2014, Yadannavar M.C.2010). On a global scale, 18-64 % of healthcare institutes are reported to have unsatisfied biomedical waste treatment facility. Effective management of biomedical waste is not only legal necessity but also social responsibility. Reported transmission through biomedical waste includes Hepatitis A (10.64%), Hepatitis B (56.19%), Tuberculosis (8.51%) (Fenwick A. 2006), HIV (74.47%). Bacteriological profile of biomedical waste is dominated by *Escherichia coli* (22.79%), *Pseudomonas sp.* (29.4%), *Staphylococci* (8.82%), *Proteus vulgaris* (5.88%), *Citrobacter sp.* (2.20%) and *Enterococci* (3.67%) (Vichal Rastogi et al. 2011). Waterborne diseases have been remained as a prime cause of mortality (Lewin S. et al. 2007, Fenwick A. 2006, Murray C.J. et al. 1997). It is mandatory to treat biomedical waste as per schedule I and in compliance with the standards prescribed in schedule V of the rule (S. Thirumala et al. 2013). The treatment method includes exposure to microwave, use of disinfectants, shredding, deep burial, autoclaving at 121°C for 15 min, incineration and disposal in secured land fields. Undergraduate and post graduate zoology departments of non-medico higher education institutes generate biomedical wastes including tissue, organs and different body parts. Biomedical waste of Microbiology and Biotechnology departments remain rich in potential pathogens including M.D.R pathogens. Academic and research activities of non-medico higher education institutes produce harmful biological waste. Legally it is not bound to follow biomedical waste disposal rules to such institutes. Hence biomedical waste aroused is disposed of with the community waste and this practice then gets serious threat to community health.

Materials and Methods :

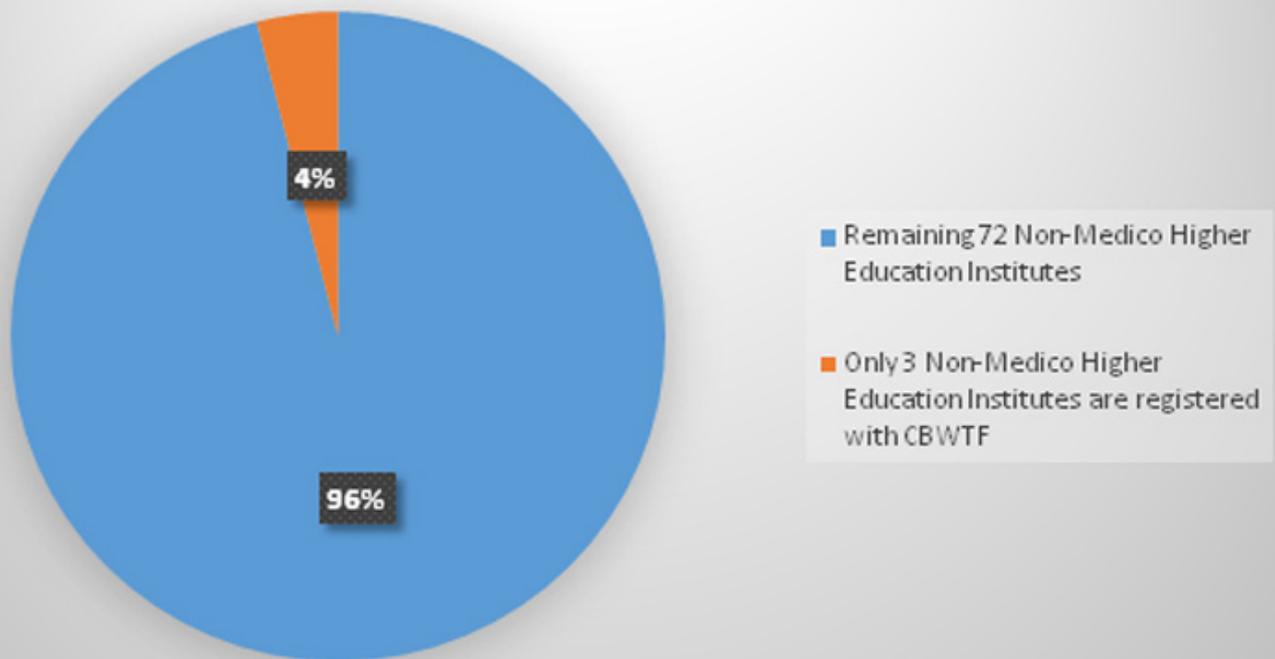
Seventy-five non-medico higher education institutes from Pune, a metropolitan city in Maharashtra state of INDIA having population more than 9.6 million were selected for the study. Survey was carried out following interviews of administrators and faculty members of concerned institutes. The information was verified by central software facility of Pune Municipal Corporation. The information was also further verified from the entry books of regional collection centers.

Result and Conclusion :

Out of seventy-five non-medico higher education institutes, only three were registered with 'Common Biomedical Waste Treatment Facility' (CBWTF) of Pune Municipal Corporation. Daily track record of regional collection center revealed that no single registered non-medico education higher institutes was found on disposing biomedical waste on a regular basis.



75 Non-Medico Higher Education Institutes



Discussion :

Biomedical waste generated through non-medico higher education institutes remain rich in harmful microorganisms. Similar observations were recorded through the hospital based surveys. Such medical and paramedical centers have legal obligation to register with CBWTF. Though it is statutory obligation, about 18 to 64 % of hospitals have reported for unsatisfactory practices of biomedical waste disposal (I.P.E.N. study group 2014). As regulations of Schedule I and Schedule V are non-mandatory for non-medico higher education institutes; serious apathy was observed among the concerned administration. Biomedical waste generated through these institutes may generate epidemics or endemics. Present study is aimed towards creating awareness regarding biomedical waste disposal practices in non-medico higher education institutes.

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