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BIOMEDICAL WASTE – SITUATION ANALYSIS AND SOME SUGGESTIONS

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It is a well known fact that biomedical waste (BMW) is potentially dangerous to the community and even after more than 17 years of implementation of BMW management rules, still its disposal remains a problematic area, although the regulators are trying hard to make sufficient implementation. There are various actions which have been undertaken for its proper implementation. As per the rule, each hospital or nursing home has to register with the state level authority and has to submit the report to the state authority every year by 31st January. The compiled report of all HCF (Health care facilities) needs to be submitted to Central Pollution Control Board (CPCB) by 31st March of each year. The CPCB has provided a compiled report on the web page of CPC[1], which was accessed in first week of July 2015 and the author prepared the following situation analysis.

The table below is showing interesting information. As per World Bank report[2], India had 0.7 beds per 1000 population. But above record (table 1) shows that the bed strength of country rose to 1.4 beds per 1000 population in 2013 (calculated beds / Indian population), which is almost double. In last four years the numbers of CBWTFs have increased from 188 in 2010 to 198 in 2013. There is an observed gap in the use of CBWTF and using own BMW treatment & disposal facilities. However this gap has reduced from 15% in 2010 to 9% in 2013. The waste generated per bed per day is almost constant i.e. 0.24 kg/day/bed in 2010 and 0.27 kg/day/bed in 2013. There are nearly 5% of the registered health care facilities who are violating rules and the pollution control board has issued them a notice.

Table 1: Basic information

Key area / year	2013	2012	2011	2010
No. of HCF	1,68,869	1,59,838	1,51,222	1,39,594
No. of beds	17,13,742	16,12,600	14,59,286	14,20,563
No of CBWTFs in operation	198	190	179	188
No of CBWTFs under installation	28	29	22	17
No of HCF using CBWTFs	1,31,837 (78%)	1,21,279 (76%)	1,12,187 (74%)	98,764 (71%)
No.of HCF using own management & disposal facilities	22,245 (13%)	21,870 (14%)	23,361 (15%)	20228 (14%)
Gap in own facility and CBWTFs use	9%	10%	11%	15%
BMW generated in kilograms per day	4,84,000	4,16,000	4,07,773	3,50,325
BMW generated in kilograms per day per bed	0.28	0.25	0.27	0.24
HCF violating rules	7,894 (4.6%)	12,990 (8.1%)	5472 (3.6%)	6653 (4.8%)
Notice issued	4,391 (55.6%)	11,583 (89.1%)	3585 (65.5%)	5829 (87.6%)

I enjoyed analyzing these reports. While analysis, I personally found some missing information in the reports. If CPCB starts to collect the missing information, they can monitor the waste management in a better way. As per my personal opinion, the points which need to be incorporated in the report are:

1. The number of HCF is divided into three categories, primary, secondary and tertiary HCF. In further report if type of HCF is mentioned, it will help us to understand the distribution of beds in the secondary and tertiary hospitals. The primary care centers and nursing homes may not have indoor facilities. Thus it will help to understand the bed distribution and waste production pattern.
2. In this report, category of waste is not available. The BMW generated in kilograms per day per bed is 0.28 kg/day per bed. It looks like that the reported data is for infectious waste only, as it matches with 10-15% of infectious waste from total waste generated per bed per day. But what about plastic waste and non-infectious waste details, it can be collected for better understanding.
3. The report lacks information about radioactive and cytotoxic waste. They are potentially dangerous for community in different ways. If authority plans to collect data on the same, it will be helpful to track such hospitals in future.
4. There is no clarity on liquid waste. The report does not contain any information on liquid waste, although in the last committee meeting the CPCB had made a committee on liquid waste disposal.
5. Many hospitals impart training and capacity building workshops. If they follow a yearly reporting system, it will help to monitor hospital's involvement in capacity building of staff.
6. As per BMW rules, each hospital needs to report an accident or an injury to the authority. There is no data found in the yearly report. This is a key to understand the needle stick injury pattern and its incidence in a year. Also if hospital reports accidents like spillage of blood on the floor of ward or operation theater, leakage of BMW bags and similar other accidents to the authority, it will further help us to understand the dangerous aspect of wastage management.
7. One more suggestion is to monitor the Hepatitis-B vaccination programme by the authority. All hospital staff should receive Hepatitis-B vaccine as per recommended guidelines. This will be of great help to the hospital staff and community.
8. In addition, state pollution control board should spare about 5% to 10% of the registration fees collected at the health care facilities for the purpose of research and generation of evidence. There are many gaps in the available report of biomedical waste and are required to be fulfilled. This research fund will be helpful to generate new knowledge and technology in context to our country. Every year pollution control board can invite applications from health care people, medical and paramedical students or research associates. A Team of experts may further evaluate the proposals and the best 10 proposals can be granted adequate funds.

This is a neglected topic from many aspects. I hope our researchers, funding agencies; authority and hospitals will take this seriously and contribute to form a healthy community.

References:

1. http://www.cpcb.nic.in/Bio_medical.php Last accessed in July 2015
2. http://data.worldbank.org/indicator/SH.MED.BEDZS Last accessed in July 2015

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