

Compliance Status of Bio-medical Waste Management Rule's, 2016 in Veterinary Institutions of Madhya Pradesh State



2018



Central Pollution Control Board
Regional Directorate, Bhopal



मध्य प्रदेश में आज भी अधिकतर पशु चिकित्सालयों से उत्पन्न जैव चिकित्सीय अपशिष्ट को नगरीय ठोस अपशिष्ट के साथ ही निष्पादित किया जा रहा है या खुले में जलाया जा रहा हैअर्थात जैव चिकित्सा अपशिष्ट प्रबंधन नियम, 2016 का गंभीर उल्लंघन ।

Bio Medical Waste generated from most of the veterinary hospitals of Madhya Pradesh is still being dumped with Municipal Solid Waste or burnt openly.....it means gross violation of Bio Medical Waste Management Rule's 2016.

कार्यकारी सारांश

आज जैव-चिकित्सीय अपशिष्ट देश और दुनिया के लिये एक बहुत बड़ा पर्यावरणीय संकट बनता जा रहा है। जैव-चिकित्सीय अपशिष्ट के उचित वैज्ञानिक निपटान हेतु केंद्र सरकार द्वारा पर्यावरण संरक्षण अधिनियम, 1986 के अंतर्गत, जैव-चिकित्सीय अपशिष्ट प्रबंधन नियम सर्वप्रथम 1998 में बनाए तथा समयानुसार इसमें संशोधन किया जाता रहा है, वर्तमान में जैव-चिकित्सीय अपशिष्ट प्रबंधन नियम 2018 प्रभावी है। उक्त नियम बनाने का मूल उद्देश्य इस अपशिष्ट का वैज्ञानिक व सुरक्षित तरीके से निष्पादन सुनिश्चित करना व जैव संक्रमण को समाप्त करना है। इस परिपेक्ष्य में पशु चिकित्सा संस्थानों को भी इस नियम के दायरे में सम्मिलित किया गया है।

जैव-चिकित्सीय अपशिष्ट के मुख्य स्रोत अस्पताल, नर्सिंग होम, डिस्पेंसरी तथा प्राथमिक स्वास्थ्य केंद्र होते हैं। इनके अलावा विभिन्न मेडिकल कॉलेज, पशु चिकित्सालय, पशु चिकित्सा कॉलेज, पशु रिसर्च सेंटर आदि से भी बड़ी मात्रा में यह अपशिष्ट उत्पन्न होता है। इस अपशिष्ट में मुख्यतः एनाटोमिकल वेस्ट, इंजेक्शन, काँच, प्लास्टिक व दवाओं की बोतलें, उपयोग किए गए आईवी सेट, दस्ताने, संक्रमित रुई, बैंडेज व अन्य जैव-संक्रमित सामग्री होती हैं।

मध्य प्रदेश में वर्तमान में लगभग 1000 से अधिक पशु चिकित्सा संस्थान हैं जिनसे प्रत्यक्ष या अप्रत्यक्ष रूप से जैव-चिकित्सा अपशिष्ट उत्पन्न होता है। वर्ष 2018 में पशु चिकित्सालयों में जैव-चिकित्सीय अपशिष्ट प्रबंधन नियमों के अनुपालन की वर्तमान स्थिति का अध्ययन केंद्रीय प्रदूषण नियंत्रण बोर्ड के क्षेत्रीय निदेशालय, भोपाल द्वारा किया गया। उक्त अध्ययन में पशु चिकित्सा संचालनालय के सहयोग व एक प्रश्नावली के माध्यम से प्रदेश के विभिन्न जिलों में स्थित पशु चिकित्सालयों की जानकारी एकत्र की गई जिसके आधार पर कुछ पशु चिकित्सालयों का औचक निरीक्षण किया गया। अध्ययन के दौरान चिकित्सकों, प्राध्यापकों, राज्य प्रदूषण नियंत्रण बोर्ड के अधिकारियों, सी.बी.डब्ल्यू.टी.एफ.संचालकों से भी चर्चा की गई।

अध्ययन में पाया गया की वर्तमान में पशु चिकित्सा संस्थानों में जैव-चिकित्सा अपशिष्ट प्रबंधन नियमों के अनुपालन की स्थिति बहुत चिंताजनक है तथा अधिकांश शहरी क्षेत्रों में भी जैव-चिकित्सीय अपशिष्ट का अवैज्ञानिक तरीके से ही निष्पादन किया जा रहा है तो उपनगरीय व ग्रामीण क्षेत्रों की स्थिति की कल्पना की जा सकती है। निरीक्षण में भोपाल के अधिकतर व इंदौर के आंशिक पशु चिकित्सालयों में ही

नियमों का परिपालन देखा गया। अध्ययन में ज्ञात हुआ कि अधिकांश पशु चिकित्सा संस्थानों ने मध्यप्रदेश प्रदूषण नियंत्रण बोर्ड से प्राधिकार ही प्राप्त नहीं किया है जबकि वैधानिक रूप से यह अनिवार्य है। आज भी अधिकांश स्थानों पर जैव-चिकित्सीय अपशिष्ट को नगरीय ठोस अपशिष्ट के साथ ही निष्पादित किया जा रहा है अथवा खुले में जलाया जा रहा है जिससे जैव-चिकित्सा अपशिष्ट प्रबंधन नियमों के औचित्य पर ही प्रश्नचिन्न लग जाता है। पशु चिकित्सा संस्थानों में नियमों से संबंधी जागरूकता, स्पॉट सेगरिगेशन, वेस्ट संग्रहण कि बुनियादी सुविधा, वेस्ट मैनेजमेंट संबंधी डॉक्युमेंट आदि का अभाव देखा गया। यह देखा गया कि जैव-चिकित्सा अपशिष्ट प्रबंधन हेतु जिम्मेदार संस्थानों के बीच पत्राचार तो हुआ परंतु जमीनी कार्यवाही नहीं हुई और विडंबना यह कि इस हेतु कोई जिम्मेदार भी नहीं।

अध्ययन से ज्ञात हुआ कि पशु चिकित्सा संस्थानों को जैव-चिकित्सा अपशिष्ट प्रबंधन हेतु राज्य शासन से कोई प्रथक वित्तीय मदद भी प्राप्त नहीं हो रही है, तथा पशु कल्याण समिति की आय से ही न्यूनतम प्रबंधन किया जा रहा है। चर्चा के दौरान यह भी पाया गया कि कुछ पशु चिकित्सालयों के कर्मचारी नियमों से पूर्णतः वाकिफ भी हैं व कार्य करने कि इच्छाशक्ति भी है परंतु संसाधनों कि कमी व वित्तीय प्रावधान ना होने के कारण विधिक प्रावधानों का अनुपालन कर पाने में असमर्थ हैं। चूंकि पशु चिकित्सालयों से उत्पन्न अपशिष्ट कि मात्रा अधिक नहीं होती व इसे नॉन-बेडेड श्रेणी में रखा गया है इस कारण भी इस क्षेत्र पर अधिक ध्यान नहीं दिया गया है। सी.बी.डब्लू.टी.एफ. संचालकों द्वारा भी इस क्षेत्र में अपनी सेवाएं देने के संबंध में अधिक रुचि नहीं दिखाई गई है जिसका मुख्य कारण संस्थानों का सी.बी.डब्लू.टी.एफ. कि सदस्यता ना लेना, संस्थानों का दूर्वर्ती क्षेत्रों मे स्थित होना एवं भुगतान में विलंब की आशंका है।

यद्यपि वर्तमान में पशुपालन विभाग व मध्यप्रदेश प्रदूषण नियंत्रण बोर्ड द्वारा जैव-चिकित्सा अपशिष्ट प्रबंधन के अनुपालन की दिशा में कार्य प्रारंभ किया गया है तथा जिला स्तर के कुछ पशु चिकित्सालयों को प्राधिकार प्रदान किया गया है, परंतु जैव-चिकित्सा अपशिष्ट प्रबंधन नियमों की मूल अवधारणा को सार्थक करने के लिए मध्यप्रदेश शासन से समय सीमा में कार्य निष्पादन के निर्देश जारी होने के बाद ही वास्तविक कार्य मूर्तरूप ले सकेंगे।

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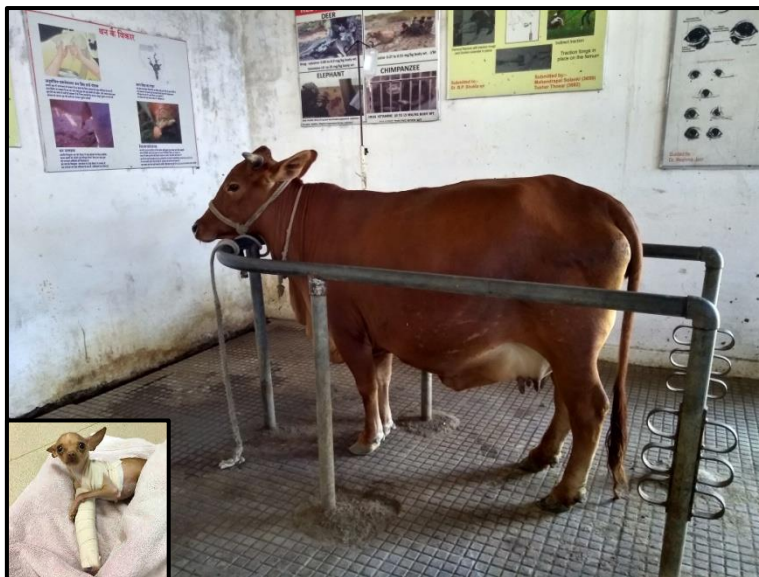


Compliance Status of Bio-medical Waste Management Rule, 2016 in Veterinary Institutions of Madhya Pradesh State

1.0 Introduction :

Veterinary hospitals are providing health services to the livestock in rural and urban communities. The Bio-medical waste (BMW) generated during veterinary treatment, unless disposed off properly, can result in epidemics. In Madhya Pradesh systematic approach for proper disposal of veterinary wastes were not observed by and large and in present scenario most of the BMW is being managed in a casual way. Veterinary hospital wastes are generally not treated properly and buried in inappropriate manner. The veterinary waste has been classified into different categories like anatomical, infectious, sharps, pathological, chemical etc. However, in last couple of months the veterinary department has made efforts regarding compliance of Bio-medical Waste Management (BMWM) Rules through coordination with State Pollution Control Board but it appears to be too little and too late.

The negligence towards waste management by veterinary hospitals draws urgent attention because ambit of the rule has been increased and



even BMW generated during household treatment is also considered for safe disposal. The study conducted by Regional Directorate, Bhopal observed that most of the veterinarians are unaware of their legal responsibilities. Poor waste management, inappropriate transportation and unscientific disposal measures are the major issues. However, veterinary waste is just emerging from its “neglected” status by legal intervention and guidelines specifically governing its

handling and disposal. The Bio-medical Wastes generated from veterinary practices, clinics and hospitals have included as health care facilities with minimum requirements and assigned the same status as human Health Care Waste (HCW).

‘Bio-Medical Waste’ is defined as discarded waste produced during the treatment and immunization of human and animals. The Government of India specifies that BMW management is a part of hospital hygiene and maintenance activities. It was observed during the field visits that the implementation of BMWM, Rules 2016 is insufficient in most of the veterinary hospitals and institutions. Most of the Veterinary Hospitals and institutions have been found to dispose the BMW in an improper and indiscriminate manner, at many places it is being disposed in municipal bins along with other solid waste. Hon’ble National Green Tribunal also issued direction time-to-time to the State Government and



Discussion with veterinary staff

concerned departments through its various orders regarding safe and scientific disposal of BMW. In order to identify the root cause of poor compliance status of BMWM in veterinary sector, the Regional Directorate CPCB, Bhopal conducted a study in the state of Madhya Pradesh. The observation of study are presented in the report w.r.t. CPCB, Head Quarter letter no F.No.B-31011/BMW(58vol-II)/2017/WMD-I/12956 Dt.06.12.2017. The details of the study and observation are given below:

2.0 Objective and method :

The main objective of the study is to identify the available practices regarding scientific management of BMW in terms of their impact on environment. The important issue in environmental protection is the planning for collection, transportation, processing and disposal of BMW.

All the Veterinary hospitals, animal houses, animal diseases diagnostic labs etc. come under the ambit of Bio-medical Waste Management Rules, 2016 & 2018 and are required to comply all the stipulated conditions. The study conducted in veterinary hospitals, research centre and dispensaries to assess the general compliance status of Bio-medical waste management in veterinary institutions of Madhya Pradesh.

A questionnaire was prepared, in coordination with waste management division of Head Quarter Delhi and the same was made available to all the veterinary institutions in the state through veterinary Directorate Bhopal and sought the requisite information pertaining to waste generation, segregation, collection, treatment, disposal and compliance of BMWM norms.

On the basis of available data, dry field visits were carried out in the selected Veterinary Health-Care Facilities (VHCFs) to verify the compliance status of BMWM. During the visit, interaction was held with Veterinary Doctors, Paramedical Veterinary Staff, Contract Workers on issues related with waste management. Interaction was also done with the professors of veterinary college, Common Biomedical Waste Treatment Facility (CBWTF) etc. on academic, administrative and technical issues related to waste management.

3.0 Categories of Waste:

The waste generated from veterinary hospitals during the treatment and diagnosis is primely classed under three categories as discussed below:

3.1 Animal waste :-



‘Animal waste’ means any discarded materials, infected body parts, blood or bedding, originated from animals contaminated with an agent infectious to humans or from animals inoculated during research, production of biological or pharmaceutical testing with infectious agents.

Teeth, hair/fur, claws/hooves or bone fragments are not considered as bio-medical waste. Biological refers to the preparations that are made from

living organisms and their products, which are used in diagnosing, immunizing or treating animals are considered as BMW.

3.2 Laboratory waste :-

‘Laboratory waste’ means a specimen or culture discarded in the course of veterinary practice or research. This includes wastes contaminated by genetically or imported biological material. Laboratory waste also includes cultures and stocks of infectious agents. Culture dishes, syringes, and devices used to transfer, inoculate or mix cultures refer to items that have come into contact with high concentrations of infectious agents considered as BMW.

3.3 Wastewater :-

‘Wastewater’ generated from operation theater washings, domestic use, floor washing, dermatology section and laboratory sink washings etc. has to be disinfected before final discharge. It is general practice, usually in all the veterinary hospitals, to discharge wastewater in public sewer without any treatment. However, as per norms VHCFs are required to ensure segregation of liquid chemical waste at the source and ensure pretreatment or neutralization prior to mixing in public sewer.

4.0 VHCFs setup in Madhya Pradesh.

The Veterinary Department in MP has various district establishment to cater the required needs as discussed in the following sub sections.



State veterinary hospital

4.1 State Disease Investigation Labs :

The main function of the lab is to carry out disease investigation (DI) in the state through a network of laboratories located at various divisional & district places. The state D.I. Lab. Bhopal is working as a reference lab to all other laboratories working in MP State. The laboratories associated with routine pathological examination of blood, fecal, milk, culture & sensitivity screening of dairy animals for Brucella, Tuberculosis & Jhones disease and screening of poultry farms for important diseases like Salmonellosis etc. the BMW generated during the diagnosis and investigation is handed over to CBWTF for scientific disposal.

On the same pattern 42 divisional disease investigation labs were also established in Sagar, Rewa, Gwalior, Indore, Jabalpur and other districts of MP for collection of samples and diagnosis of local diseases.

4.2 State veterinary hospitals :

A State veterinary hospital has been established at Bhopal, which caters to the need of veterinary treatment in Bhopal district and also work as a referral hospital because this hospital is equipped with all modern testing equipment with specialized treatment.

To provide the veterinary treatment 50 district level polyclinic, 1012 Veterinary Care Facilities(VHFs), 1585 veterinary medicine distribution centres, 38 mobile veterinary units and

27 ambulatory clinics have been established in the State and most of them are located in suburban or rural areas. The treatment provided is by the veterinary doctors and para-veterinary staff.



Veterinary treatment

4.3 Institute of animal health and veterinary biological, Rasalpur, Mhow-

This institute is involved in large-scale production of veterinary biological and other ancillary preparation as per the demand of the field as per prescribed standard under Schedule F-I (This contains regulations and standards for vaccines) of Drugs and Cosmetics Rules. The Bio-medical waste from this institute is sent to the Common Biomedical Waste Treatment Facility (CBWTF), Indore.

4.4 State Animal reproduction centre:

In Madhya Pradesh State a total of 08 animal reproduction centres are located, viz. one each at Bhopal, Tikamgarh, Shajapur, Khargoun, Sagar, Chhindwara, Balaghat, and Panna. Various species of cow like Jersey, Murra, Sahiwal, Kenkatha etc. are kept here for milking and breeding purpose.

4.5 Private Veterinary Clinics:

Besides government veterinary institutes, few private veterinary practitioners also provide treatment through their establishments in urban areas. It was observed that as compared to government veterinary hospitals, the private veterinary clinics located in urban areas are more aware of the BMW, Rules and managing the waste comparatively in better way. It was also observed that the small veterinary clinics operated from home are yet not obtaining authorisation from Madhya Pradesh Pollution Control Board (MPPCB) and BMW is being disposed along with domestic waste.



5.0 Responsibilities of VHCFs under Rule.

According to BMWM, Rules 2016 every 'occupier' (administrative controller of the VHCF) has responsibility for safe management of BMW, few of them are stated as follows:

1. Take all necessary steps to ensure that bio-medical waste in handle without any adverse effect on human health and the environment.
2. Obtain consent and authorization from prescribed authority.
3. Make a provision within the premises for a safe, ventilated and secured location for storage of segregated biomedical waste in colored bags or containers.
4. Pre-treat the laboratory waste, microbiological waste, blood samples, and blood bags through disinfection or sterilization on site.
5. Not to give treated bio-medical waste with municipal solid waste.
6. Provide training to all its health care workers and others, involved in the handling of bio-medical waste at the time of induction and maintained records.
7. Immunize all its health care workers and others, involved in the handling of bio-medical waste for protection against diseases including Hepatitis B and Tetanus.
8. Ensure segregation of liquid chemical waste at sources and ensure pre-treatment.
9. Maintain and update on day to day basis the bio-medical waste management register and display the monthly record on its website.
10. Make available the annual report on its website.
11. Establish a system to review and monitor the activities related to bio-medical waste management.
12. Maintain all record for a period of five years.



6.0 Observations of field visit :

To verify the compliance status of the above responsibilities, field visits were carried out randomly to some VHCFs in the State. The key observations made during the visit are as follows:

6.1 Consent and Authorisation status:

It was observed that the veterinary department has recently started process of obtaining consent and authorization from the MPPCB and also obtain membership of the CBWTFs in the respective areas. However, no data could be made available by veterinary Directorate as how many VHCFs have obtained the authorization and how many are still in the process. The reason for not obtaining authorization by VHCFs are either the occupiers are not aware of authorization process or it is not a priority work for them.

During the last couple of years the MPPCB has issued notices to the veterinary department consequently the department has started taking authorization. As the veterinary hospitals come under the non-bedded category of hospitals, according to rule hence MPPCB issued one-time authorization for 15 years which is renewed on every 03 years subject to the compliance status of BMWM. As per the available data only the veterinary hospitals of Bhopal district and Hoshangabad have the valid authorization and remaining VHCFs of other districts of Madhya Pradesh have still not obtain the authorization. The veterinary hospitals of Indore region are also applying for obtaining the authorisation. As per the discussion held with senior officers of Directorate, it was informed that presently only State and District veterinary hospitals have initiated to obtain consent and authorization. District polyclinics, sub-urban VCFs, District DI labs etc. have yet not initiated the process of obtaining authorization so far.

BMW AUTHORIZATION FORM-BB Rule 10

M.P. Pollution Control Board
E - 5, Arera Colony
Bhopal 46, Bhopal
Tels :

Veterinary Hospital, Sadar Manzil (375002)

Under the Rule-10 of the Biomedical waste (Management and Handling) Rules, 2016 framed under the EPACT 86

Authorization for operating a facility for Collection, Generation, Handling Any Other
Manner, Reception, Storage, Treatment of biomedical wastes

BMW AUTH NO: BMW-309086, VALID UPTO: 31/12/2032

Application Inward No: 67437, Date: 31/08/2017

BMW Id: 375002

C.A. No: 0

File No: (Out No: 15671)

In exercise of power conferred by this Board and after scrutiny of above referred application, Superintendent /
Incharge of Veterinary Hospital, Sadar Manzil at Fatehgarh, Bhopal Tal: Hajar Dist: Bhopal is here
by granted an Authorization to operate Health Care facility for Collection, Generation, Handling Any Other
Manner, Reception, Storage, Treatment of biomedical wastes on the premises of
Veterinary Hospital, Sadar Manzil (375002) situated at
Bhopal (M.C. No: 15671) Under

CBWTF Reg. No: BMW-309084, Valid Upto:

1. The Authorization is granted for 0 nos. of beds with generation of

Type of Waste Category (kg/Month)	YELLOW	WHITE (Translucent)	RED	BLUE
Qty permitted for Handling	0.00	0.00	0.00	0.00

category of biomedical wastes (i.e. nos. Nos/Month)

2. This BMW Authorization shall be in force for a period of 15 year, Valid Upto 31/12/2032 (15 Years)

3. This Authorization is subject to the conditions stated in the Annexure-I attached here with and to such other conditions as
may be specified in the Rules for the time being in force under the Environment (Protection) Act 1986.

4. The authorization shall comply with the provisions of the Environment (Protection) Act, 1986 and the rules made there
under.

5. The authorization or its removal shall be produced for inspection at the request of an officer authorized by the prescribed

Authorization of veterinary hospital

6.2 Quantum of waste generation

The veterinary hospitals fall under non-bedded hospital category and treatment etc. is mostly done at site, hence like other non-bedded, waste generation from veterinary hospitals is very minimal. As learnt during discussion with veterinary hospitals authority that it is practically not feasible to take most of the ailing animals like cow, buffalo, horse etc. to the hospitals and in such case treatment is most administrated at the site and the BMW generated during the treatment is disposed off in unscientific manner.



Based on the study data on an average basis 100 gm/HCF/day to 1000 gm /HCF/day waste is generated from hospitals. The waste generated during the treatment is mostly glass sharps, needles, injection ampoules, gauzes etc. Non-point generation of the BMW like household treatment and treatment in rural areas, pose a major challenge to manage owing to distant location and smaller quantum of waste.

6.3 Segregation and Storage

Segregation is the key of effective waste management and should be done at the source of generation e.g. all veterinary care activity areas, diagnostic facilities, operation theatres, treatment rooms, dermatology section etc. The responsibility of segregation should be with the generator of biomedical waste *i.e.* veterinary doctors, paramedical personnel, medical technicians etc. The bio-medical waste should be segregated in colour coded bins as given in schedule-I of BMW Rule, 2016.



As per the provision of BMWM, Rule's the waste has to be segregated at source in colour-coded bins but it was observed that most of the VHCFs do not have having the proper colour coded bins at generation points and the entire waste is collected in common bins. Some of the hospitals were found to have colour coded bins but only a single colour bin was made to use for collection of all the types of biomedical wastes.



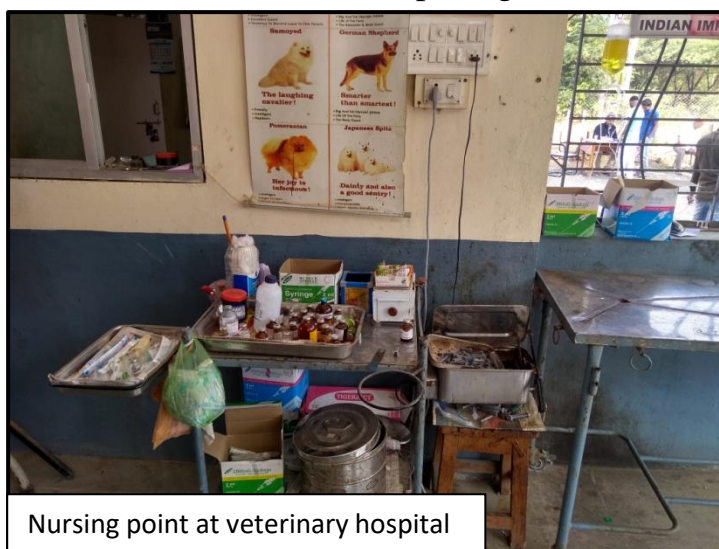
As per the BMWM Rules 4 (b) and CPCB guidelines for management of Health Care Waste 2018 chapter 2 point no.2.5 every occupier has to make a provision within the premises for a safe, ventilated and secured location for storage of segregated BMW in colored bag or container in the manner as specified in schedule-I to ensure that their shall be no secondary handling and the BMW shall be directly transported for the appropriate treatment or disposal as the case may be as prescribed in Schedule-I. But it was observed during the field visits, lack of segregation practices results in the mixing of hospital wastes with general wastes which result into turning the whole stream of wastes into a hazardous mess. Moreover, inappropriate segregation and non availability of central waste collection room. Most importantly, there is no mechanism to ensure that all the collected and segregated wastes reach their final destination i.e. CBWTF or deep burial site without any mishaps. It was also observed that there is no mechanism to ensure that the waste treatment is done within the prescribed time limits. This is concluded because no proper documentation for management of waste is maintained by any veterinary hospital/institution.

6.4 Collection and transportation

As per the BMWM, Rules waste has to be segregate at source and stored in colour coded bins and after requisite treatment waste has to hand over to CBWTF for disposal. But it was observed that only a few VHCFs which are located in the vicinity of urban area with access to CBWTF or VHCFs falls on the route of CBWTF vehicle are generally handed over the waste to CBWTF for

treatment. As most of the VHCFs located in suburban and rural areas and having no access to CBWTF hence those VHCF are disposing the waste in backyard of hospital. It is a violation of the BMWM, Rules 2016 section 4(a & b).

It was also observed that due to less quantity of waste and unavailability of proper approach road up to veterinary hospitals in rural areas CBWTFs are not interested to lift the waste.



Nursing point at veterinary hospital

The waste storage facility inside the hospitals was also not found satisfactory in most of the hospitals, isolated waste storage facilities were not available and all the generated waste stored in a casual manner.

It was observed that some of the VHCFs of Bhopal and Indore having the membership of CBWTF and waste is being collected by the CBWTF as per mutual agreement and transported through dedicated vehicles. Intra-mural transportation of waste within HCF in district hospitals where four or more wards available is being done in unprofessional manner and no covered cart or trolley used for this.

6.5 Final Disposal:

During the study it was observed that the generated and collected BMW is generally disposed off in three ways i.e. incineration (5% to 10%) deep burial (15% to 20%) and disposed along with



Open burning of BMW

municipal solid waste (70% to 80%). Very less VHCFs, obtained the membership of CBWTF and the waste which is generated from member hospitals are being incinerated by respective CBWTF. The remaining hospitals that are not having the membership of CBWTF are disposing their waste

through deep burial or just throwing at the backyard of the hospital in an unscientific and unsafe manner. Moreover, the deep burial was also not being done as per the standards are given in schedule-II point 05 of BMWM, Rules 2016. During the visit, it was observed that most of the VHCFs are not provided isolated and wire fenced deep burial pit. Most of the pits found damaged and abandoned even caretaking staff does not know the purpose of its construction.



It was observed that during the study most of the VHCFs are disposing their BMW along with MSW and it is routine disposal practice which has been adopted since long it is a violation of the BMWM, Rules 2016 4(b & f). During discussion with veterinary doctors it comes to know some of the District veterinary hospitals obtained the authorisation from MPPCB but till date they have not associated with any CBWTF as they have no fund or expenditure head for it and they are waiting for the necessary instruction from State government side.

6.6 Wastewater treatment

Wastewater treatment still remains a grey area in all the veterinary institutions. Although institute claim to have a water management system, there is nothing specific about management of liquid waste in health-care facilities. As the VHCFs comes under non-bedded category hence they shall dispose of infectious liquid waste only after treatment by disinfection as per schedule-II (6) of the BMWM, Rules 2016. During the discussion, with veterinary hospital officials there is no clarity on plants that need to be installed and officials also told that it



might not be feasible for smaller VHCFs to treat water. According to the rules, health-care facilities are required to ensure segregation of liquid chemical waste at the source and ensure pre-treatment or neutralization prior to mixing with other effluent generated from health-care facilities (ensure treatment and disposal of liquid waste in accordance with the Water Prevention and Control of Pollution Act, 1974 (6 of 1974)).

But it was observed that during the visit the facilities are struggling with the installation of such plant and are directly discharging the wastewater into the sewer line as they have no fund for installation of the treatment system and lack of awareness about the rules.

According to the BMW Rules 2016 discharge wastewater generated from a veterinary health-care facility into the municipal sewage system after adequate pre-treatment is a preferred method if the municipal sewage-treatment plant fulfils the local regulatory requirements.

It is important that none of the veterinary institute have liquid effluents treatment system. It is required that Health-care facilities should provided effluents treatment system for specialized areas such as operation theatres (OTs), labs, dermatology section etc.

6.7 Pharmaceutical Waste

According to the rules, health-care facilities should either send discarded/expired medicines back to the manufacturer or dispose-off them in a yellow bag that will be ultimately incinerated by the CBWTF. As informed by Veterinary official, total 1585 veterinary medicine distribution centre established in State and all the medicine distributed before the expiry, however proper record was not maintained.



Since the take-back system by the drug manufacturers is not readily available in the State. The hospitals which are associated with CBWTF handed over the expired medicine to CBWTF for disposal but these kinds of hospitals are very few and remaining hospitals disposed the date expired medicines either dumped in backyard or throwing it into MSW bins. It is a violation of the BMW, Rules 2016 section 4(b).

6.8 Vaccination

In BMW, Rules have made Hepatitis-B and tetanus vaccination compulsory for health-care staff but still, the entire health-care staff are not covered under it. It was observed that most of the staff not vaccinated and the department have no policy for compulsory vaccination. Most of the veterinary hospitals have not maintained the vaccination record. It was also observed the HCFs has outsourced the housekeeping work and contract employee collect and stored the waste as per their own knowledge and wisdom as no training programme related to BMW handling has been organized for them so far.

As per BMW Rules, 2016 every VHCF must ensure that a comprehensive health check-up of staff involved in BMW handling is carried out at the time of induction and proper record shall be maintained in prescribed format as given in Annexure-05 of guideline of management of Health Care Waste. The VHCF needs to maintain the immunization record of the staff with dates of immunization and due date of the first dose, second dose, and booster dose but this kind of system was not observed during the field visits of VHCFs. It is a violation of the BMW, Rules 2016 section 4(h).

6.9 Personal protective equipment (PPE)

As per the BMW Rules 2016 and CPCB guideline of management of Health Care Waste (2018) in chapter 5 point no.5.4 it is the responsibility of the



BMW handling without PPEs

in-charge of the health care facility to ensure the occupational safety of the health care workers and other staff involved in BMW. Provision of PPE is a requirement but the fact remains that due to cost and inconvenience issues, most of the health-care staff is not able to use them. Gloves and masks remain the most-used PPE but it is not easily available at most of the centres. It was observed that most of the biomedical waste management staff not wearing any PPEs and worked in very casual manner because they are not aware and not trained about the risk involved in the work. It is a violation of the BMW Rules, 2016 section 4(i).

6.10 Awareness and Training:

According to the BMW Rules, 2016 section 4(g) training is must for all HCFs staff at the time of induction and thereafter at least once every year and the proper record has to be maintained. It was observed that during the random inspections of VHCFs the awareness level w.r.t. segregation, collection and reporting with VHCFs and most of the staff associated with biomedical waste management has poor awareness, while 20 to 25 % of facilities have no awareness about the Rules and its provisions. Posters related to waste segregation was also not available in most of the VHCFs, especially in suburban and rural areas. The training related to basic BMW, Rules were not organized for middle and lower level staff, however higher officers of department aware about the rules but its compliance part was found very weak hence. It is a violation of the BMW, Rules 2016 section 4(g).

The content of the BMW training i.e. need analysis, schedule, trainer,

course material, record maintenance etc. has been explained in guideline of management of Health Care Waste in chapter 5 point no.5.8 and at least at district level training programme must be organized by veterinary department in consultation with MPPCB.



Veterinary treatment vehicle

6.11 Budget provision for BMWM.

During the visits of various VHCFs its came to know that for the Biomedical waste management no separate budget head provided. In general, health-care facilities felt that having a separate budget head and adequate funding for it helps to sustain a waste management programme in the VHCFs. In the present management system, budget of miscellaneous expenditure and Pashu Kalyan Samiti is being utilized for BMWM. It was observed that due to unavailability of fund VHCFs are not able to obtain authorization and membership of CBWTF.

As per schedule –III of the BMWM Rules, 2016 every state government required to allocate adequate fund to VHCFs for management of BMW. Veterinary department may have a dedicated budget for BMWM as a part of the annual budget of the VHCFs. Such budget must include both recurring and non-recurring cost expected to be incurred by all VHCFs related to BMWM.

Madhya Pradesh government may include this budget for the BMWM in the yearly programme implementation plan for approval and funding from central government. As suggested under the Swachh Bharat Abhiyan sufficient fund is available for sanitation and hygiene and some portion of the fund must be provided for bio-medical waste management. The various budgets heads as mentioned in Guideline of management of Health Care Waste in chapter 5 point no.5.9.under which the grant may be obtained from the central government.

6.12 Annual reports and record keeping.

Annual report submission to prescribed authority is compulsory for every VHCFs on or before 30th June for the period from January to December of the preceding calendar year as mention in Rule 13 of BMWM Rules, 2016 and Guideline of management of Health Care Waste chapter 5 point no.5.3.1 but it was observed that only a few, less than 2% of VHCFs

REG.NO.- 0888, VETERINARY HOSPITAL BHADBHADA ROAD
Bhadbhada Road, Bhopal
Category = Veterinary
Annual Report of Bio Medical Waste - 2017

Month	Yellow	Red	White	Blue	Total
Jan					0.00
Feb					0.00
Mar					0.00
Apr					0.00
May					0.00
Jun					0.00
Jul					0.00
Aug					0.00
Sep	0.00	1.00	0.00	1.30	2.30
Oct	0.00	0.00	0.50	1.20	1.70
Nov	0.00	0.00	0.00	2.00	2.00
Dec	0.20	2.00	1.00	9.00	12.20
Total	0.20	3.00	1.50	11.50	16.20
Avg. per month	0.08	0.75	0.38	3.38	4.59

Incineration Waste	0.30
Autoclave Waste	18.00

CBWTF: Bhopal Incinerators Ltd.
6/5, Sector-H, Industrial Area
Govindpura, Bhopal
Ph: 0755-2580915

Annual report

submitted the annual report and the remaining 98% neither aware about it nor submitted to MPPCB. The VHCFs associated with CBWTF are a little bit aware of the compliances but those who are not a member of any CBWTF or located in the remote area are not much aware of the implementation of Rules.

Most of the VHCFs are not maintained proper record of daily or monthly waste generation as per category. It is a violation of the BMWM, Rules 2016 rule 4(n).

7.0 Discussion held with CBWTFs:

As per discussion held with CBWTF operators of MP most of the VHCFs not obtained the membership of CBWTF as they have no instruction from the government side and unavailability of fund for waste management. The CBWTF operators also not entrusted to collect the waste from VHCFs as less quantity of waste generation, remote location of VHCFs, Non-point source waste generation, uncertain payment of fees and bills etc. on an average basis CBWTF operator charges Rs. 5000 per month/HCF for waste collection and disposal even VHCFs not able to pay it as there is no budget provision for it.

8.0 Discussion held with Veterinary College Professors:

BMW generated from VHCFs can be managed only by awareness or education to the veterinary doctor and para-veterinarian staff hence it is important the content related to BMWM must be in the syllabus of veterinary degree courses. During the discussion held with professors of veterinary college it came to know that Veterinary Council of India under the Ministry of Agriculture and Farmers Welfare, GoI has notified minimum standards of veterinary education-Degree Course (B.V.Sc.& A.H.) Regulations, 2008, on 08 July 2016 in which under the chapter *Veterinary Public Health & Epidemiology* subheading *Environment Hygiene* BMWM related course content has been include in syllabus.

9.0 Scoring of VHCFs Based on the study score has been calculated for each visited VHCFs with respect to compliance status. The details of score and method of score calculation as follow:

9.1 Method adopted to score the Veterinary hospitals

S. No.	Compliance points	Details of Compliance points	Weightage	Scoring method
01	Authorisation status	Valid	20	If authorisation is valid = 20 If authorisation applied for renewal = 10 If authorisation not obtained = 0
		Applied for renewal		
02	BMW Segregation	Segregation as per colour coding	10	Proper segregation = 10 Partial segregation = 05
		Segregation in two bins		
03	BMW Collection	Covered containers	10	If container with proper colour and lid= 10 If container without colour and lid= 05
		Open containers		
04	BMW Storage	Isolated location with proper labelling	05	Isolated location + Lock & key + Ventilation = 10 Lock and key + Ventilation = 05 Isolated location + Lock and key = 08 Isolated location + Ventilation = 07
		Lock and key	03	
		Ventilation	02	
05	BMW Disposal	CBWTF membership	30	Waste disposal through CBWTF = 30 Waste disposal through deep burial = 20
		Deep burial		
06	Awareness related	BMWM Rules	04	BMWM Rules + Use of PPEs + Vaccination = 10 Use of PPEs + Vaccination = 07 Vaccination = 03 BMWM Rules + Use of PPEs = 07 BMWM Rules + Vaccination = 07
		Use of PPEs	03	
		Vaccination	03	
07	Documentation	Annual Report submitted	10	Annual Report submitted + Waste records = 10 Waste records = 05 Annual Report submitted = 05
		Waste records maintenance		
Total			100	

Score	75-100	50-75	25-50	0-25
Status	Very Good	Good	Poor	Very Poor

9.2 Scoring of Veterinary Hospitals, Madhya Pradesh
(w.r.t. the compliance of Biomedical Waste management rules 2016)

S.No	Veterinary Hospital	Authorisation status	Segregation	Collection	Storage	Disposal	Awareness	Documentation	Compliance Score (100)
1	District Investigation Lab, Bhopal	20	10	10	5	30	7	0	82
2	Jhangribad, Bhopal	20	0	5	8	30	4	0	67
3	Sadar Manzil, Bhopal	20	5	10	5	30	10	5	85
4	Bhadbhada, Bhopal	20	5	10	7	30	4	5	81
5	Bharatpur, Sidhi	0	0	0	0	0	7	0	7
6	Rampur, Sidhi	0	0	0	0	0	7	0	7
7	Amlaha	0	0	0	0	0	0	0	0
8	Hoshangabad	20	0	0	0	0	7	0	27
9	Babai	0	0	0	0	0	0	0	0
10	Sohagpur	0	0	0	0	0	0	0	0
11	Madhav nagar Ujjain	0	0	0	0	0	7	0	7
12	Lalpur, Ujjain	0	0	0	0	0	7	0	7
13	Snehataganj, Indore	10	10	10	10	30	10	5	85
14	Chhavni, Indore	0	0	0	0	0	7	0	7
15	Rajmohhla, Indore	0	0	0	0	0	0	0	0
16	Veterinary College, Mhow	20	5	5	10	30	10	0	80
17	Inst. of AH&V Biological, Mhow	20	10	10	10	30	10	5	95
18	Ashta	0	0	0	0	0	0	0	0
19	Sehore	0	0	0	0	0	0	0	0
20	Vidisha	0	0	0	0	0	7	0	7

Score	75-100	50-75	25-50	0-25
Status	Very Good	Good	Poor	Very Poor

10.0 Field visits and other observations:

To assess the BMW, Rules implementation field visit of some of the VHCFs has been carried out. The details as given below:

1. **State disease investigation lab, Bhopal** - The state DI lab visited on 10.10.2018. It was observed that the DI lab has valid authorization upto 2032. The staff aware are about the BMW and waste segregated in color coded bins. Proper records related to BMW is not maintained which is also required as per rule however basic compliance was found satisfactory.
2. **State Veterinary hospital, Jahangirabad Bhopal** - The State Veterinary hospital visited on 10.10.2018. The total OPD of this hospital is about 250 to 280. It was observed the hospital having valid authorization upto 2032 but staff not aware about the BMW and waste not segregated in color-coded bins however, the hospital having the membership of CBWTF and waste disposed off through it. Proper records i.e. waste generation log book, annual report, vaccination records etc. were not maintained which is mandatory requirement as per the rule.

3. **District veterinary hospital, Sadar Manzil, Bhopal** –

This district hospital comes under polyclinic category it was visited on 01.10.2018. This hospital having the



valid authorization up to 2033 and all the BMW disposed of through CBWTF. The hospital submitted the annual report of last year. It was observed in totality that hospital manage the BMW according to rule except for proper segregation and wastewater treatment. Overall management of BMW was found satisfactory.

4. **Veterinary hospital, Bhadbhada, Bhopal** – This district hospital comes under polyclinic category it was visited on 15.11.2018. This hospital having the valid authorization upto 2033 and have the membership of CBWTF. It was observed that color coded bins were available at hospital, however, all the waste is being collected in the yellow bin, it shows segregation is not done in accordance to rules. Overall management of BMW was found satisfactory.
5. **Veterinary hospital, Bharatpur, Sidhi** – This district hospital comes under polyclinic category, it was visited on 22.11.2018. This hospital does not have the valid authorization and not obtained membership of CBWTF. All the BMW is being collected in a common box and disposed along with other waste. The hospital having deep burial pit but the pit was found filled with garbage.
6. **Veterinary hospital, Rampur, Sidhi** – This district hospital comes under polyclinic category it was visited on 23.11.2018. This hospital does not have the valid authorization and not obtained membership of CBWTF. The hospital does not have deep burial pit and BMW is being collected in common box along with other waste and disposed of through Municipal Corporation. It was observed that used needles, vials, syringes etc. stored in the corridor in a cardboard box in a very casual manner. During the discussion it came to know that veterinary staff not aware about the BMW, Rules 2016.



7. **Veterinary hospital, Amlaha** – This veterinary hospital was visited on 30.11.2018. This hospital does not have valid authorization and not obtained membership of CBWTF. All the BMW is being collected in a common box and throwing at back yard of the hospital in open place. During the visit, it was observed there is no segregation method adopted

for BMW collection and generated. It was observed that BMW is being burnt outside in unsafe manner.

8. **District veterinary hospital, Hoshangabad** – This district hospital was visited on 03.12.2018. This hospital have the valid authorization up to 2033 and except valid authorization all the remaining points of BMW is being violated because they are not aware about the provisions of BMW Rule's 2016. It was observed all the solid waste generated from hospital including BMW is being collected in common bin without any safety precaution and just disposed in MSW bin lying outside the premises. Proper segregation, record keeping, immunization of staff associated, training of staff etc. all the points were found non-complying. Till date hospital not obtained membership of any CBWTF, as CBWTF demanding Rs.5000/- per month for services and hospital does not have any fund provision for it.



9. **Veterinary hospital, Babai** - This district hospital comes under polyclinic category, it was visited on 03.12.2018. This hospital does not have the valid authorization and not obtained membership of CBWTF. The hospital have small deep burial pit and all generated waste is being disposed off in it. The condition of deep burial pit was very poor and sharps, needles, empty vials etc. scattered around the pit. During the discussion it came to know that veterinary staff not aware of the BMW Rules, 2016.
10. **Veterinary hospital, Sohagpur**- This district hospital comes under polyclinic category, it was visited on 03.12.2018. This hospital does not have the valid authorization and not obtained membership of CBWTF. All the BMW is being collected in a common box and disposed along with

other waste. The hospital does not have deep burial pit and all sharps, syringes etc. collected at back side of the hospital for further disposal with MSW. As informed by doctor mostly empty glass bottles is being reused for providing the medicine like tincture iodine, turpentine oil etc.

11. **Veterinary hospital, Madhav Nagar, Ujjain-** This district hospital comes under polyclinic category it was visited on 10.12.2018 this hospital located at the centre of the Ujjain city and top bureaucrats live in this area.

This hospital does not have the valid authorization and not obtained the membership of any CBWTF. The BMW is being collected in common bins along with other waste and disposed in MSW container of Municipal Corporation, Ujjain. It was observed that used needles,



vials, syringes etc. stored in a cardboard box and kept at back side of the hospital in a very casual manner. During the discussion it came to know that hospital staff aware about the BMW Rules but entire compliances was found very poor.

12. **Veterinary hospital, Lalpur, Ujjain** - This district hospital was visited on 10.12.2018. This authorization was expired in 2013 and after that hospital hasn't applied for renewal. It was observed all the solid waste generated from hospital including BMW is being collected in common bin without any safety precaution and just disposed in back side of the hospital and burn openly in the interval of 3 to 4 days. Proper segregation, record keeping, immunization of staff associated, training of staff etc. all the points were found non-complying. Earlier, the hospital had obtained the membership of CBWTF but due to escalation of service charges and expiry of contract time hospital discontinued the membership and presently disposal of waste is being done in unscientific manner.

13. **Veterinary hospital, Snehlataganj, Indore** - The Veterinary hospital Snehlataganj visited on 21.12.2018. The hospital have applied for authorization, however the hospital having the membership of CBWTF and waste disposed of through it and proper records i.e. waste generation log book, annual report, etc. were maintained. The total OPD of this hospital is approx. 80 to 100 animals. The hospital staff aware about the BMWM Rules and all the segregation is being done in color coded bins, needle cutter was available and found functional. The posters related to waste segregation were displayed at generation points. The hospital also provided isolated waste storage room in accordance to rules. The positive attitude observed in staff towards overall management of waste. Overall management of BMW was found satisfactory.

14. **Veterinary hospital, Chhavni area (near GPO), Indore** - This veterinary hospital was visited on 21.12.2018. The hospital not have valid authorization and not obtained the membership of CBWTF. The total OPD of this hospital is approx. 20 to 30 animals daily. It was observed all the solid waste generated from hospital including BMW is being collected in common



bin without any safety precaution. As informed by hospital in-charge all the generated BMW is being transported to Snehlataganj hospital for further disposal in the interval of 4 to 5 days however no record has been maintained in this regard. Overall compliance was found poor.

15. Veterinary hospital, Rajmohhla (near Mhow Naka), Indore - This veterinary hospital visited on 21.12.2018 this hospital located at the centre of the Indore city. This hospital does not have the valid authorization and not obtained membership of any CBWTF. The BMW is being collected in common bin along with other waste and disposed along with MSW. It was observed used needles, vials, syringes etc. stored in a plastic bucket and kept in a very casual manner. During the discussion it came to know that hospital staff not aware about the BMW Rules. As informed by hospital staff the glass and plastic items is being sold to local kabadi and remaining waste is being burn at back side of hospital. Overall management of BMW was found very poor.



16. College of Veterinary Science and AH, Mhow –The Veterinary College, Mhow visited on 21.12.2018. The college having the membership of CBWTF and waste disposed of through it and proper records of waste generation is maintained. The total OPD of this hospital is approx. 15 to 20 animals daily. The hospital staff aware about the BMW Rules but segregation is not being done in color coded bins, needle cutter was available and found functional.

17. Institute of Animal Health & Veterinary Biological Product, Mhow – The Veterinary Institute, Mhow visited on 21.12.2018. The institute having the membership of CBWTF and waste disposed of through it and proper records of waste generation is maintained. The BMW is being collated in colored bin. On average basis 500 to 700 gm BMW (mostly egg shells) generated on daily basis. Overall management of BMW was found satisfactory.

18. **Veterinary hospital, Ashta-** This hospital comes under polyclinic category, it was visited on 21.12.2018. This hospital does not have the valid authorization and not obtained membership of CBWTF. All the BMW is being collected in a common box and disposed along with other waste. The hospital does not have deep burial pit and all sharps, syringes etc. collected at back side of the hospital for further disposal at MSW site.



Nursing point at veterinary hospital

19. **Veterinary hospital, Sehore-** This district hospital comes under polyclinic category it was visited on 24.12.2018. This hospital does not have the valid authorization and not obtained membership of CBWTF. All the BMW is being collected in a common box and disposed along with other waste. The hospital does not have deep burial pit and all sharps, syringes etc. collected at back side the hospital for further disposal at MSW site. It was observed the hospital staff not aware about the BMW, Rules. The empty ampoules, used needles, small medicine bottles were found scattered in the premises.
20. **Veterinary hospital, Vidisha** - The Veterinary hospital Vidisha visited on 29.12.2018. The total OPD of this hospital is approx. 40 to 50 animals. The hospital staff aware about the BMW Rules and all the waste is being collect in common bin. The posters related to waste segregation were not displayed at generation points. As informed by present officer all the BMW is being dispose off with MSW. The compliance status of BMW, Rules was found unsatisfactory however the housekeeping was found satisfactory.

(Dr. Anoop Chaturvedi)
Senior Scientific Assistant

11.0 RECOMMENDATIONS

Based on the field visits, interaction held with veterinarians and data obtained from Directorate of animal husbandry and VHCFs it is recommended that the following important points may be conveyed to the stakeholders through Animal husbandry department, Government of Madhya Pradesh for better implementation of rules in veterinary institutions of the Madhya Pradesh State:

1. All the VHCFs must obtain the consent and authorization from prescribe authority i.e. MPPCB.
2. The 'State department of animal husbandry and veterinary' needs to grant license to VHCFs with a condition to obtain authorization from prescribed authority for BMWM.
3. To comply all the provisions as mention in BMWM Rules, 2016 and CPCB guidelines of management of Health Care Waste 2018.
4. A separate budget provision should be made by the State government at the policy level for better management and implementation of various provisions of rules. The state government may allot or divert some portion of fund of Swachh Bharat Abhiyan for bio-medical waste management.
5. To coordinate with MPPCB regarding organizing awareness and training program at district level w.r.t. segregation, collection, storage, and proper documentation.
6. The symbol of bio-hazardous must be painted on walls of storage site and waste collection bins.
7. All the VHCFs must ensure spot segregation in color coded bins in accordance to Schedule-1 of BMWM, Rules 2016 and make a provision within the premises for safe, ventilated and isolated storage of BMW.
8. All the VHCFs must be instructed for not to dispose the BMW in municipal bins and strictly stop the open burning of the BMW.
9. All the VHCFs which are not associated with any CBWTF or located in remote area may dispose the BMW in deep burial pit only rather than throwing in MSW bins and must obtain permission from MPPCB.

10. All the VHCFs must ensure proper documentation w.r.t. waste generation and disposal and update on day to day basis. The annual report must be submitted to MPPCB before the 30th June of every year.
11. The wastewater must be pretreated or neutralization prior to discharge into the sewer and comply with standard of liquid waste as per Schedule –II of BMWM Rules, 2016.
12. To provide appropriate and adequate PPEs and ensure occupational safety of all health care workers involved in BMWM. The health check up camps must be organized with regular time interval.
13. All the staff engaged in BMW handling including contract or casual labor must be vaccinated for Hepatitis B and Tetanus and proper record should be maintained.
14. All the veterinary practitioner must be instructed to collect back the BMW generated during the treatment at household and in remote locations and shall be handover to nearest VHCFs for safe disposal..
15. The BMWM related rules and regulation must be taught and explain in detail through professors of veterinary institutions.
16. Establish an in-house system to review and monitor the activities related to BMWM through committee. The committee shall be meet once every six months and collect the feedback from VHCFs and resolved the BMWM related issues on priority basis.

Conclusion

In the view of the above it is clearly indicate that Veterinary department of MP is not serious about the compliance and provisions of the BMWM Rules and Guidelines. Therefore direction under Section 5 of Environmental (P) Act 1986 may be issued to State veterinary department of government of Madhya Pradesh regarding compliance of all the norms of BMWM Rules and Guidelines.

Instruction may also be given to Madhya Pradesh Pollution Control Board as it is prescribed authority for compliance of the BMWM, Rules in the state.

(Dr. P.K. Behera)
Regional Director

Photographs of visit



Discussion of Regional Director with veterinary officer



Veterinary treatment



OT of veterinary hospital



Treatment of animal in veterinary hospital



Treatment of animal in veterinary hospital



Treatment of animal in veterinary hospital



Proper segregation of waste



Proper segregation of waste



Mixing of BMW with other waste



Mixing of BMW with other waste



Improper collection of BMW



Collection of BMW with other waste



Overflow deep burial pit



Garbage filled in deep burial pit



Open storage of BMW in premises



BMW stored at back side of hospital



BMW stored at corridor of hospital



BMW stored in corridor of hospital



BMW burn openly



BMW outspread in open ground



BMW outspread from deep burial pit



BMW dumped in MSW container



BMW mixed with MSW



BMW mixed with MSW



Open burning of BMW



BMW spread in open field



Open burning of BMW

Name of the CBMTF
Address of the CBMTF with contact details
Name of the HCF
Month & Year

Bhopal Incinerators Limited
6/5, Sector-4, Industrial Area, Govindpura, Bhopal. Ph: 2580515

Quantity of Bio-Medical Waste Generated by HCF (Kg)

Date /Category	Yellow (Yellow)	Red (Red)	White (White)	Blue (Blue)
1				
2				
3				
4	5		5	5
5	4			5
6				5
7	14			
8	14			
9	14			
10	050			30
11	5			5
12				
13				
14				

Waste collection log book of hospital



OT of a veterinary hospital



Veterinary hospital



Dermatology division of hospital



Dermatology division of hospital



Swimming pool of veterinary hospital

List of Annexure

1. The questioner for data collection.
2. Sample copy of the Authorization issued by MPPCB.
3. Sample copy of an 'Annual report' submitted by VHCF.
4. Sample copy of the waste logbook maintained by VHCF.
5. Sample copy of CBWTF membership of VHCF.

Abbreviation

BMWM	Bio Medical Waste Management
BMW	Bio Medical Waste
CBWTF	Common Bio-medical Waste Treatment Facility
CPCB	Central Pollution Control Board
DI labs	District Investigation lab
HCFs	Health Care Facilities
HCW	Health Care Waste
MPPCB	Madhya Pradesh Pollution Control Board
OPD	Out Patient Department
VHCFs	Veterinary Health Care Facilities

Important links :

1. <http://cpcb.nic.in/bio-medical-waste-rules/>
2. <http://envfor.nic.in/content/gsr-234e16-03-2018-bio-medical-waste-managementamendment-rules-2018>
3. http://cpcb.nic.in/cpcbld/wast/bioimmedicalwast/Common_Bio_Medical_Waste_treatment_facilities.pdf
4. http://cpcb.nic.in/uploads/hwmd/Guidelines_healthcare_June_2018.pdf