

Impact Assessment Report on CSR Project implemented in West Jaintia Hills District, Meghalaya funded under NETC CSR Scheme 2020-2021

Organization/Institution: Corona Care Center, St.Aloysius Hospital Ummulong West Jaintia Hills District

Date: 06-03-2021

Project Assessed: CSR Project on Bio-Medical Waste (BMW) management in West Jaintia Hills District, Meghalaya- Infection Prevention & Control to contain the spread of Covid-19 at the Corona Care Centre.

1. The Impact identified in the project include:

- I. The extent of Prevention & Control of Covid-19 infection in the hospital setting, through robust handling and management of Covid-19 BMW. This is measured by the Hospital Acquired Infection (HAI) Rate at the Corona Care Centre.
- II. Statutory Compliance pertaining to BMW Management Rules 2016 notified under the provision of Environment Protection Act 1986. This is measured by the number of mandatory Statutory Consents granted by the State Pollution Control Board (MSPCB) for the establishment and operation of a Diesel Incinerator at the Corona Care Centre

2. Indicators Identified:

- I. **Outcome Indicators:** The following are the Outcome related Indicators which are measured to understand the effectiveness of the project:
 - i) Quantity of Biomedical Waste Incinerated in the facility
 - ii) Quantity of linens machine washed in the facility
 - iii) Quantity of Sharps waste disposed of in the facility
 - iv) No. of staffs trained on Infection Prevention and Control
 - v) Total no. of Covid-19 patients admitted in the facility
 - vi) Total no. of Covid-19 suspects tested in different quarantine centres of District (MDC hostel, KNGC, JNV, Highwinds hotel) and whose Covid-19 wastes were taken to St. Aloysius Corona Care Centre for Incineration
 - vii) Number of staffs acquired cross infection (Covid-19) in the hospital

II. **Impact Indicators:** The following are the Impact Indicators which are measured for gauging the overall impact of the CSR Project on Infection Prevention & Control pertaining to Covid-19 and on the environment

- i) Hospital Acquired Infection (HAI) Rate, due to Covid-19, was taken as the Primary Impact Indicator to gauge the overall impact of the CSR Project
- ii) No. of Statutory Consents, granted for the CSR project by the Meghalaya State Pollution Control Board(MSPCB), was taken as a Secondary Impact Indicator to gauge the statutory compliance of the project with the provision of the Environment Protection Act 1986

3. Context

Bio-Medical Waste management is one of the most important aspects of Infection Prevention and Control in a hospital setting. From time-to-time Central Pollution Control Board and State Pollution Control Board issue guidelines for strict compliance with the Bio-Medical Waste Management Rules 2016 and Bio-Medical Waste (Amendment) Management Rules 2018 and these rules are notified under the provisions of the Environment Protection Act 1986.

Health and environmental risks arise out of poor infection control practices and unsound environment management systems such as inappropriate disinfection and poor Bio-Medical Waste handling, treatment, and disposal.

The existing poor handling, treatment, and disposal of Bio-Medical Wastes are further compounded by the current situation of the Covid-19 pandemic. Bio-Medical Wastes generated out of diagnosis and care of Covid-19 suspects and patients are considered extremely infectious because of the high transmissibility of SARS-COV-2, the coronavirus that causes Covid-19. Briefly, the types of Bio-Medical Wastes generated from Corona Care Centres include- Personal Protective Equipment (PPEs), Soiled wastes etc.

Central Pollution Control Board (CPCB) in its notification dated 18th March 2020, has categorically instructed that all Covid-19 Bio-Medical Wastes generated from Health care facilities, Corona Care Centre, Quarantine facilities should be sent for incineration. Non-availability of a Common Bio-Medical Waste Treatment Facility (CBMWTF) in far-flung areas of West Jaintia Hills makes it extremely challenging to comply with the statutory provision,as laid down in the BMW Management Rules 2016, and, as notified by Central Pollution Control Board for treatment and disposal of Bio-Medical Wastes generated from

the Corona Care Centre. Non-compliance with the statutory guideline would invite a penalty by the National Green Tribunal.

4. Approach

The MoU for the project was signed on September 7, 2020 between the NETC, represented by Mr. Anil Raghunath Sah, Deputy General Manager of NETC Limited and, the Government of Meghalaya, represented by Shri Garod L.S.N. Dykes IAS, Deputy Commissioner of West Jaintia Hills District. The CSR project was implemented during Financial Year 2020-21. The scope of work is on Infection Prevention & Control at the Corona Care Centre.

The project is implemented at St.Aloysius Hospital Ummulong, a missionary hospital requisitioned by the District Administration in April 2020 to function as a sole Corona Care Center in West Jaintia Hills District. As on 21stDecember 2020, 97 Covid-19 patients were admitted in the hospital and had recovered from Covid-19.

5. Components of the project.

To attain the objectives and to realize the impact of the CSR Project on Infection Prevention & Control and, to comply with the statutory provisions of the BMW Management Rules 2016, the following activities, under the CSR Project, were implemented/taken at the Corona Care Centre

i) Installation of a portable Diesel Incinerator for Treatment and disposal of Yellow & Red Category Covid-19 BMW:

On November 3 2020, a formal statutory approval for establishment of the diesel incinerator, the Consent to Establish (CTE) under section 25/26 of the Water (Prevention & Control of Pollution) Act 1981, was granted by the Meghalaya State Pollution Control Board for treatment & disposal of Covid-19 Bio-medical wastes. A 5kg/HR capacity EC10 model diesel incinerator was successfully installed on November 2nd 2020, by ECO-CLEAN. Statutory approval for operating the Diesel Incinerator, the Consent to Operate (CTO), under section 25/26 of the Water (Prevention & Control of Pollution) Act 1981, was granted by the Meghalaya State Pollution Control Board on November 16 2020. The first cycle of incineration started on November 17 2020. Also, Covid-19 Bio-Medical Wastes brought to the Corona Care Center from the other Quarantine Centers of the

District Administration of West Jaintia hills were being disposed of by incineration in the facility

ii) Procurement of a Washing Machine cum Dryer

The purpose of a washing machine cum dryer is for machine washing of the hospital linens. This will reduce the exposure of housekeeping staffs to the corona virus. An IFB made Eva ZX 6KG washing machine cum dryer was delivered and installed on October 8 2020 by RIZA Electronics Shillong.

iii) Construction of Sharps Pit

The purpose of Sharps Pit is for disposal of Covid-19 Bio-Medical Wastes that belong to the Sharps/white category as per provision of the BMW Management Rules 2016.

iv) Construction of Deep Burial Pit

The purpose of a Deep Burial Pit is for disposal of Covid-19 Bio-Medical Wastes which belong to the Yellow category.

6. Assessment Tools

I. The tools which were used to measure the Outcome Indicators of the CSR Project are given in table 1:

Table-1

Sl. No.	Indicator	Assessment Tool
1	Quantity of Biomedical Waste Incinerated in the facility	Log Book of Incinerator/ CPCB Covid19 BMW APP
2	Quantity of Sharps waste disposed of in the facility	Log Book of Waste Disposal Pits/CPCB Covid19 BMW APP
3	Quantity of linens machine washed in the facility	Log Book of Washing Machine
4	No. of staffs trained on Infection Prevention and Control	Training records
5	Total no. of Covid-19 patients admitted in the facility	Admission Register
6	Total no. of Covid-19 suspects tested in different quarantine centres of District (MDC hostel, KNGC, JNV, High winds hotel) and whose Covid-19 Bio-Medical	Log Book of Waste Collection/District Disease Surveillance Cell of West Jaintia

	Wastes were taken to St. Aloysius Corona Care Centre for Incineration	hills
7	Number of staffs acquired cross infection (Covid-19) in the hospital	Hospital Acquired Infection (HAI) Register of the hospital

II. The tools which were used to measure the Impact Indicators of the CSR Project are given in Table -2

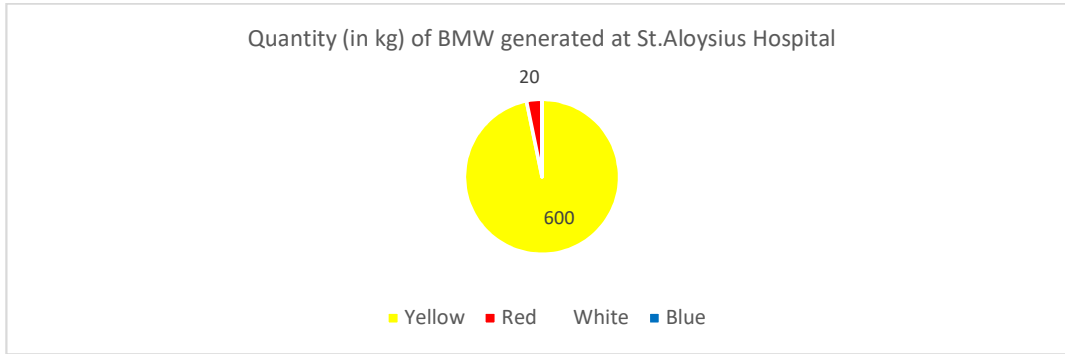
Table-2

Sl. No.	Indicator	Assessment Tool
1	Hospital Acquired Infection Rate (HAI) (due to Covid-19) $\left(\frac{\text{No. of staffs acquired Covid - 19 during duty}}{\text{Total number of Covid - 19 patients admitted in the hospital}} \times 100 \right)$	HAI Register of the hospital
2	No. of Statutory Consents granted by Meghalaya State Pollution Control Board (MSPCB), Shillong	Consent to Establish (CTE) and Consent to Operate (CTO)

7. Results:

I. Outcome Related Results:

- i) Quantity of BMW incinerated in the facility: 600 KG
- ii) Quantity of Sharps waste disposed of in the Sharps Pit: 0 kg (no sharps waste generated)
- iii) Quantity of linens machine washed in the facility: 407 or 155kg(approx.)
- iv) No. of staffs trained on Infection Prevention & Control: 27
- v) Total no. of Covid-19 patients admitted in the facility :97 (as 31st Jan 2021)
- vi) Total no. of Covid-19 suspects tested in different quarantine centres of District (MDC hostel, KNGC, JNV, High winds hotel) and whose Covid-19 wastes were taken to St. Aloysius Corona Care Centre for Incineration:2420
- vii) Number of staffs acquired cross infection (Covid-19) in the hospital: 0



II. Impact Related Results:

- i) Hospital Acquired Infection (HAI) Rate (due to covid-19):0
- ii) No. of Statutory Consents granted by MSPCB :2

8. Discussion of the results

We have seen that the implementation of the CSR project at the Corona Care Center on infection prevention and control has enabled the district administration to manage the Bio-Medical Wastes, generated from the Corona Care Centre, in a safe way and compliance with the statutory provisions of the BMW Management Rules 2016.

The outcome of the project has resulted in a huge quantity of Bio-Medical Wastes which were incinerated in the diesel incinerator. As on February 28 2021, 600 kilograms of Bio-Medical Wastes generated from the care of 97 covid-19 patients which were admitted at the Corona Care Center and the Bio-Medical Wastes generated from the screening and diagnosis of 2420 returnees, primary contacts, secondary contacts and suspects of Covid-19 in various quarantine facilities, entry point of West Jaintia hills District had been effectively and appropriately incinerated in the diesel incinerator. The data are collected from the Log book of the Diesel Incinerator for the period w.e.f. 17th November 2020 to 28th February 2021.

The quantity of Sharps waste is nil because most of the inpatients admitted at the Corona Care Centre did not require any injectables. However, the sharps waste generated from other quarantine centers of the District were not brought to the facility.

All the patients' linens were machine washed and this had help in preventing direct contact between the housekeepers and patients' linens. Bed sheets, bed cover,

and pillow cover were subjected to machine washing. As on December 21 2020, 407 linens of Covid-19 patients – approximately 155 kilograms in weight – were machine washed at the Corona Care Center. The data are collected from the Log Book of the Washing Machine for the period w.e.f. 9th October 2020 to 21st December 2020

Two of the housekeepers and the sister in-charge of the center were given spot demonstration/training on the operation of the diesel incinerator by the engineer of ECO-CLEAN from Guwahati. However, all the 27 staffs posted at the Corona Care Center were given training on Infection Prevention and Control, including management of Covid-19 Bio-Medical Wastes. The training was given at the time of induction of the staffs into the Corona Care Center. An SOP for Infection Prevention and Control, for the process owners, was developed and approved by the Deputy Commissioner West Jaintia Hills. A 7 members Hospital Infection Control Committee was constituted to oversee the different processes of infection prevention and control. The committee was chaired by the Centre Manager of the Corona Care Center. The CSR project coordinator was one of the members of the committee.

To aid in the measurement of the impact of the CSR Project on Infection Prevention and Control a Hospital Acquired Infection (HAI) register was specially designed and printed to capture all the events of Covid-19 cross infections occurring in the hospital. A clinical care & safety indicator, the ‘HAI Rate’ was adopted as a primary indicator to gauge the overall impact of the project on the aforementioned theme. In the Covid-19 era the acceptable limit of HAI Rate is zero. The measured ‘HAI Rate’ for the Corona Care Centre is zero, which is excellent. In other words, none of the staffs’ members, posted at the Corona Care Center, contracted covid-19 infection during the management of Bio-Medical Wastes and during care of covid-19 patients.

A Secondary Impact Indicator, the number of Statutory Consents, granted by Meghalaya State Pollution Control Board(MSPCB), Shillong, for the establishment and operation of the diesel incinerator at the Corona Care Center, was taken to gauge the statutory compliance with the Environment Protection Act 1986. The Consent to Establish (CTE) and, the Consent to Operate (CTO) were granted by MSPCB. However, the impact of the CSR Project on the environment, in particular the Diesel incinerator, can be evaluated only by a Statutory authority, viz., MSPCB/CPCB, based on a set of emission standards.

In summary, the results reported here show the positive impact of the CSR Project on Infection Prevention and Control at the Corona Care Centre and in the community -through appropriate management of the Bio-Medical Wastes generated thereof.

9. Conclusion

The implementation of the CSR project funded under the NETC CSR Scheme 2020-2021 has benefitted the District in terms of tackling the menace of Bio-Medical Wastes, generated out of the diagnosis, isolation and, treatment of Covid-19 patients, and the threat it poses to the health care providers and to the environment.

The installation of a Diesel Incinerator at the Corona Care Centre marks a milestone in the appropriate management of Bio-Medical Wastes in the District of West Jaintia Hills, it being the first ever portable Diesel Incinerator installed at a government run health institution in the state of Meghalaya. The project has enabled the Corona Care Centre and Quarantine Centres, which are managed by the District Administration of West Jaintia hills District, to fully comply with the statutory provisions as laid down in the Bio-Medical Waste Management Rules 2016 and amendments thereof - and hence avoid any penalty by the National Green Tribunal- that might arise from non-compliance with the provision of the BMW Rules 2016

10. Sustainability of the Project

In the event of vacation of the District Administration of the Corona Care Centre, it is proposed that the custody (care taker) of the assets should be transferred to the administrator of St.Aloysius Hospital for taking care of and, efficient utilization of the machinery/infrastructure. However, a written commitment between the hospital administrator and the district administration has been reached, which provides that all the health institutions within the jurisdiction of West Jaintia hills will utilize the CSR Project facilities for treatment and disposal of only the covid-19 Bio-Medical Wastes. This arrangement will be valid till 31st October 2021. It is to be noted that the Diesel incinerator comes with a 1-year maintenance free by the supplier, i.e., free maintenance is valid till November 2 2021. Also, the washing machine cum dryer comes with a 1-year warranty, i.e., free maintenance is valid till October 8 2021.

11. Challenges faced during implementation of the Project

Difficulty in getting the labor for the civil work due to anation-wide lockdown.

12. Supporting documents attached

- i). Copy of Installation certificate of diesel incinerator
- ii). Copy Training certificate of diesel incinerator
- iii). Copy of Maintenance Certificate
- iv). Copy of Consent to Establish (CTE)
- v). Copy of Consent to Operate (CTO)
- vi). Copy of Terms of Supply of Diesel Incinerator
- vii). Copy of Warranty Card of Washing machine
- viii). Running Photos

13. Acknowledgement

We sincerely acknowledge and express our gratitude to North East Transmission Company Limited for the CSR funding (they) committed towards Infection Prevention and Control at the Corona Care Centre– a noble cause in the global fight against Covid-19. And, nevertheless, their commitment towards the environment.

We are thankful to the Sisters of Mercy, under the able leadership of Sister Elsin Arackal, Administrator St. Aloysius Hospital, for their kind gesture by allowing us to run the Corona Care Center in their newly constructed hospital building.

We are thankful to the District Administration of West Jaintia hills for sourcing the CSR funding and, for bearing the expenses on diesel fuel to run the incinerator, not to mention about the logistic support they have extended to run the Center.

We are thankful to the District Rural Development Agency (DRDA) of West Jaintia hills for executing & meeting all the expenses of the Civil Work related to the installation of the Diesel Incinerator and, also for meeting the expenses of the CA audit of the CSR fund.

We are thankful to the Director Health Services (MI) Govt. of Meghalaya and to the District Medical & Health Officer, West Jaintia Hills District, for providing the center with a young and diligent man power. Our thanks to the staffs of the Corona care Center for being the frontline warriors and for their sincerity in accomplishing their job responsibilities.

Our thanks to the District Mission Coordinator (SSA), West Jaintia Hills, for being part of the project.

Our sincere thanks to Meghalaya State Pollution Control Board, Arden Lum Pyngngad Shillong, for guiding us in fulfilling the Statutory requirements of the CSR Project.

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