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Research Article

Miscellaneous Waste Management from Vaccination Study Conducted in the Lemba Health Zone in Kinshasa

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Abstract

Health facilities are the main sources of sanitary waste. In healthcare facilities, the main observation is that caregivers have very little involvement in the day-to-day management of waste from vaccination, whereas it should play a central role in the functioning of the sustainable waste management system.

In the Lemba health zone no studies have been conducted on vaccine-related waste management. It is necessary to develop a waste management plan. This work made it possible to carry out a situational analysis of the strategies of waste management linked to the vaccination. We carried out a descriptive cross-sectional study, which was carried out in January to July 2015 in the Lemba Health Zone.

Keywords: Waste Management; Lemba Health Zone

It covered all 43 health units organizing the immunization service and 63 agents involved in immunization activities were interviewed using a structured questionnaire. An Observational Guide was used to observe the behavior of agents in relation to the management of wastes resulting from vaccination. Our sample was exhaustive. The main findings are:

- The majority of the personnel involved in this management eliminate waste (collection, sorting, storage and destruction) according to their type;
- No structure had the modern incinerator with thermostat;
- In 19% of cases, needles and syringes are present even after incineration;
- Substantial cracks or erosions are observed in 80% of the Montfort incinerators;
- Waste management is not included in the operational plan as an activity and no budget is provided for this purpose.
- To improve this management, it is important to develop a project on:
- The construction of modern incinerators in the health zone.
- Training of personnel in waste management.

It is also necessary to develop a management plan related to immunization by involving all stakeholders including the private sector.

Poor management of waste from vaccination remains a major public health concern in the world.

Curative care accounts for about 95%, vaccination 3%, and the remaining 2% correspond to the administration of blood, derivatives and contraceptives. Vaccine waste management remains. A serious health problem because of several complications it caused. What is tragic is that the community is dying because of poor waste management.

In the Democratic Republic of Congo, vaccine safety takes into account six components: The quality of vaccines; The safety of the cold chain; Multi-dose bottle policy; The role of the diluent in vaccination; Contraindications to vaccinations; Reactions to vaccines (EPI-DRC, 2004).

Origin of hospital waste

The origin of this refuse comes from the work done by the man. While working, the latter seeks food, water and oxygen to live better and transforms them into products and services. Finally, we end up with wastes that are secondary products of vital action, processes of production and service delivery [1].

Treatment of refuse

As mentioned above, garbage is part of waste that pollutes the environment. Among these wastes: household waste, litter, ash, mining waste and agricultural waste [2].

Waste disposal strategy

The disposal of garbage in landfills is by far the most common method in the world. Much of this, which is not discharged goes through incineration and others remain in composting (composting). To move to the disposal of this waste, one has to be financed, that is to say it depends on cost, without the financial means this evacuation can not be realizable.

Waste collection

- It avoids the dispersion of waste and isolates the waste from any contact.
- It is done immediately after the use of the receptacle.
- The receptacle should be available at each site where immunization activities are carried out and on a continuous basis.
- Safety boxes must not be filled (100 syringes for a safety box).
- The pickup must be daily.

Discharge

It is the easiest way to do this when you do not have the financial means, but this is only done if the land is not too far from the garbage production.

Indeed, the most efficient means of evacuating waste can be, the pre-collection which is a hygienic preservation, that is to say method of the conservation loan of the household, also there is the collection which takes place to Door or grouping, that is to say, the grouping of garbage, then there is the evacuation which is done by three stages namely: Localization of waste (waste); Identification ; Qualification.

Triage and final disposal

Composting

Composting operations consist of preparing garbage or waste and degrading the organic matter of aerobic microorganisms.

Means of destruction

Incineration

The first finding to burn garbage in incinerators to produce steam while the second called still descriptive distillation, is the process of chemical decomposition of solid waste in an oxygen-reduced atmosphere, this method is very difficult to develop in countries Of the Third World who do not have the necessary elements for this treatment.

The burning in an iron barrel

In the absence of an incinerator, burning in an iron barrel or a protected fireplace is another way of destroying the injection equipment used and the syringes.

The destruction of waste

This is the definitive removal of the possibilities of contact with sharp and sharp objects. Destroying syringes, needles, vials and receptacles is neither an easy alternative nor an ideal solution. Therefore, it is necessary to: Prioritize destruction at the production site, Emphasize methods that are easy to implement, Promote low-cost, reliable techniques, Take environmental guidelines into account, Involve the community and the local community.

Data analysis

The data from the collection sites, recorded on the collection tools by the investigators, were compiled, purified and then codified. For the correct understanding of the results, we deliberately reported the procedures for calculating each variable before the presentation of the results concerned. The data was entered on the Excel software and was processed and analysed using the SPSS 16.0 software. The relationships between variables were tested using the multiple linear correlation test.

Methodology

The Health Zone has a Referral General Hospital, a University Clinic, 16 Health Centres and 27 other structures.43 structures organizing routine immunization activities. It should be noted that the majority of structures are private, although they are integrated into the primary health care policy.

This is a cross-sectional, descriptive study of vaccine-related waste management strategies in the LEMBA Health Zone. The target population of our study consisted of all health workers from 43 structures involved in vaccination. Nurses, waste agents, and midwives who organized the NPC were interviewed in this study.

Our sample size was 43 vaccination units, with one staff per structure vaccinating 43 people, 19 midwives and the EPI supervisor in the Health Zone, making a total of 63 sample. With regard to this study, we preferred the survey method. It allowed us to provide the necessary explanations on the data obtained. Two techniques were used, namely: observation and structured Interview.

Results

After harvesting and analysis of the data, we obtained the results in tabular form.

Relative to the profile 25% of the respondents are nurses and 30% of the midwives and 44% of the auxiliaries of the health. The result also shows that auxiliary agents are more involved in the management of wastes resulting from vaccination.

Knowledge of the quantity of waste from the vaccine activity produced in the health facilities was 15.8%. Knowledge of the number of syringes used per year was 22.2%. Knowledge of the different chronological steps in waste management resulting from vaccination was 23.8%. In 39 out of 43 sanitary facilities, 91% put syringes and needles directly into the safety box.

In 19% of the structures, syringes, needles and empty bottles are carried to the vaccination site on 74% of the packaging and hoods hanging in the vaccination site.

As for transport, 72% of the structures will deposit directly instead of incineration. We also observed the presence of needles and syringes after incineration.

No structure has a modern incinerator either 0% and 40% uses landfill and in other structures we observed the combination of incineration with a craft oven and burial.

The study found that 21.33.3% of the respondents received training in waste management, followed by 42, or 66.7% never received training in waste management resulting from vaccination.

No agent was able to cite the steps of good waste management by order as stated in the design framework. Almost all structures are limited to the collection level of 67%.

No health facility in the LEMBA Health Zone has a schedule for the destruction of waste related to vaccination and 25% of the structures have a person in charge of waste management. We also noted that activities related to good waste management are not included in the operational plan.

This study shows that the age group involved in the management of waste from vaccination is 41-50 years with 60.3% of the total respondents with the average age of 45 years and the difference Type 25 and 15 years.

The same result shows that the majority of the respondents are women, 40 or 63.5%.

The table shows that the primary level represents 57.1%, followed by the secondary level, ie 31.7% of the total number of agents involved in the management of the waste resulting from vaccination.

According to the table above, the agents involved in the management of the waste resulting from the vaccination are post-service vendors, ie 44.4% followed by market gardens with 23.8%.

Discussion

We determined sociodemographic and economic characteristics. Our understanding was that the strategies that the health structures of the LEMBA Health Zone use to manage wastes from vaccination are less effective.

The results indicate that 25% of the respondents are nurses, followed by 30% of birth attendants and 44% of auxiliaries. The same study indicates that auxiliary agents are more involved in the management of wastes resulting from vaccination.

According to the same research, the results with regard to the knowledge on the quantity of the waste of the activity of vaccination produced in the health facilities, is 15,8%. The respondents do not know the number of syringes used per year. Knowledge of the different chronological steps in waste management resulting from vaccination was 23.8%.

The data feels that 39 out of 43 health structures are 91%, the respondents admit to put the syringes and needles directly in the safety box, in 19% of the structures the syringes, needles and empty bottles train at the site of vaccination. 74% of packaging and caps hang in the vaccination site. As for transport, 72% of the structures will deposit waste directly instead of incineration.

According to the practice observed in the treatment and disposal of vaccination wastes shows that no structure has a modern incinerator, ie 0% and 40% use landfill and other structures Observed the combination of incineration with an artisanal furnace and burial.

This leads us to admit that waste management strategies are less effective in our country.

In view of in relation to the disposal of waste resulting from vaccination, it appears that no agent was able to locate the stages of a good waste as in the conceptual framework.

Under the Waste Management Strategy generated by the vaccination activity, no health facility in the LEMBA Health Zone has no planning for the destruction of vaccine wastes and only 25% of the structures Have a person in charge of waste management.

We also noted that activities related to good waste management are not included in the operational plan.

In view of this concerning the respect of the circuit for the disposal of waste resulting from the vaccination, no agent could cite the steps of a good management of the waste in order as said in the design framework.

In view of this on the waste management strategies generated by the vaccination activity, no health facility in the LEMBA Health Zone has a schedule for the destruction of vaccine-related waste.

Compared to the distribution of respondents by age group, it appears that the age group involved in the management of waste from vaccination is that of 41-50 years with 60.3% of the total respondents with the Mean age of 45 years and standard deviation 25 and 15 years.

Regarding sex the majority of respondents are female with 63.5%.

It is found that the primary level represents 57.1% followed by the secondary level with 31.7% of the total number of agents involved in the management of waste resulting from vaccination.

The agents involved in the management of the wastes resulting from the vaccination are post-service salespeople with 44.4% followed by vegetables with 23.8%.

Comparing age, education, training and occupation shows that gender, no-service occupations and level of education negatively influence the proper management of waste Of vaccination.

There is a significant relationship between ($p < 0.05$) the strategies that health structures put in place to manage wastes from immunization and the level of education and occupation. So the strategies that the health structures are going to put in place to manage the wastes resulting from the vaccination must be effective without taking into account the level of study and the occupation [3-17].

Conclusion

Poor management of waste from vaccination remains a major public health concern in the world.

Worldwide curative care accounts for about 95%, vaccination 3%, and the remaining 2% correspond to the administration of blood, derivatives and contraceptives.

The objective of this study was to identify strategies for the management of vaccine wastes in the LEMBA health zone.

Our assumptions were that the strategies that the health facilities in the LEMBA health zone would use to manage wastes from vaccination would be less effective. Are there a significant relationship between the socio-demographic characteristics of the respondents and the poor management of waste from vaccine activity?

The target population consisted of the 43 health facilities in the LEMBA Health Zone. The sample size was 63 agents.

We used the survey method, followed by the interview and the non-probabilistic or accidental sampling. The study is cross-sectional descriptive. We also performed content or categorical analysis. Data processing was done in Excel where data was entered, coded, cleaned and exported in SPSS 16.0 for analysis. The comparison of the data was carried out using a correlation test with degree of significance $P < 0.05$.

Given our results, our hypothesis is confirmed because 42 or 66.7% of the respondents did not receive training in waste products resulting from vaccination. For the proportion, the hypothesis is confirmed (out of 63 subjects: 21 or 33.3% of the respondents accepted that they were trained in vaccine-derived waste.) As for socio-demographic and economic characteristics, The hypothesis is confirmed (there is a significant relationship observed between the strategies that the health structures of the LEMBA Health Zone use to manage wastes resulting from vaccination, age, education level, training occupation Have a negative influence on good waste management.

We believe that these indicators will make it possible to make decisions and guide essential information on the strategies that the health structures of the LEMBA Health Zone use to manage the waste resulting from the vaccination.

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