REPORT

KAP-SECOND
(Knowledge, Attitude and Practices)

SUSTAINABLE HEALTHCARE WASTE MANAGEMENT PROJECT, HUBLI-DHARWAD

By

HEALTH CARE WITHOUT HARM AND TOXICS LINK
SECTION-I

1.0. Knowledge, Attitude and Practice (KAP-II)

1.1. Introduction:

The Hubli-Dharwad Sustainable Healthcare Waste Management Project was set out to help the hospitals and clinics of the district improve their practices so that they can reduce harm and save money. Health Care Without Harm and Toxics Link with the support of Deshpande Foundation have been working with Hubli Dharwad Municipal Corporation (HDMC) for last year. Since, the knowledge and attitude have a vital impact on the behaviour of the people, all HDMC staff have been trained once and ongoing training is conducted on a monthly basis to refresh knowledge and to introduce new staff members to the subject. Training of trainers has commenced to create a pool of people experienced in passing on their knowledge and give the HDMC to capability of maintaining high standards of waste management in the long term. During the last year of the project, two model wards (Chitaguppi and Old Bus Stand Hospitals) and two model clinics (Ganesh Pet and Navanagar) have been set up to demonstrate best practice.

The aim of knowledge, attitude and practice (KAP) second was undertaken in early 2009 to review the existing health care waste management status in the project area after one full year of intervention. The results of the study provide the key data, which shows improvement in status of knowledge, attitude and practices on biomedical waste management in the twin city, Hubli Dharwad.

Objectives:
1. Analyzing the overall bio medical waste management status Hubli Dharwad.
2. Assessing the knowledge, attitude and practice of the health care staff in Hubli-Dharwad
Impact assessment of the bio medical waste management intervention in Hubli-Dharwad

1.2. Sampling and Methodology

There are a total of 176 hospitals in Hubli-Dharwad, including 72 facilities that only deal with outpatients. Under the KAP survey a total 13 health care facilities of the twin city, Hubli-Dharwad were selected for the study. Of these 13 facilities, 8 facilities belonged Hubli Dharwad Municipal Corporation (HDMC) wherein the sustainable healthcare waste management Project was intervened and of the 8 HCMC facilities, the 4 HDMC health care facilities have the good practice models (two model wards and two model clinics). A total of 114 respondents were interviewed randomly from the 13 selected facilities. Of the 114 respondents, 59 respondents belonged to facilities under HDMC (project intervention sites) and 37 respondents were from the faculties with model wards. The data was collected with the help of interview schedule prepared on the various aspects of bio medical waste management. Apart from the interview, the data was also collected through observation method. With the aim to assess the bio medical waste management status in the Hubli-Dharwad and the impact of the project in the first year of intervention, the data was purposefully analyzed at two levels i.e. overall bio medical waste management status at all the health care facilities and the comparative assessment of HDMC health care facilities (Project Intervention site) Non- HDMC health care facilities. The data was analyzed by using SPSS package.

1.3. General Profile of the respondents and facilities:

1.3.1. Age of the respondents:

Of the total 114 respondents 15 per cent of the respondents were in the age group of 20-30 years of age, 24 percent were in the age group of 31-40 years, 24 per cent were 41-50 years of age and 37 per cent were above 50 years.
1.3.2 Gender: The fig. 4 shows that of 114 respondents 83 per cent were female and 17 percent were male.
1.3.3. **Designation of the respondents:** The figure 2 shows that of 114 respondents seven per cent of the respondents were doctors, about 63 per cent were paramedic, about 6 per cent were student, about 33 per cent were auxiliary staff and one of the respondents was a surgeon.

![Bar chart showing designation of interviewees](image)

1.3.4. **Educational qualification:** The figure 3 shows that out of 114 respondents about 3 per cent of the respondents were post graduate, about 9 per cent of the respondents were graduates, about 66 per cent were educated up to secondary level, about 17 per cent were educated up to primary level and remaining about 16 per cent were illiterate.

![Bar chart showing education qualifications](image)

1.3.5. **Type of Facility of the respondents:** Fig 1 shows that of 114 respondents about 21 per cent of the respondents belonged to medical college, about 21 per cent belonged to
private hospital/nursing home, about 18 percent were from dispensary and about 40 percent of the respondents belonged to maternity health center.

1.3.6. Number of beds in facilities: Fig 6 shows that 33 per cent of the respondents belonged to more than 100 bedded health care facilities, 28 per cent belonged to 01-25 bedded facilities, 27 per cent respondents belonged to 26-50 bedded facilities and remaining 12 per cent respondents belonged to 51-100 bedded health care facilities.
1.4.0 FINDING AND ANALYSIS:

1.4.1. Knowledge about waste management policy: Of the total 114 respondents about 76 per cent of the respondents were aware of the biomedical waste management rules, about 25 percent knew the name of the rule, while only about 16 percent respondents had the knowledge of the year of the rule passed and about 60 per cent of the respondents responded positive about the waste management committee in the health care facility. Though the knowledge about the name of the rules among the respondents has increases after the initiation of the project in the area from 10 per cent to 25 per cent but still needs to be improved.

1.4.2. Responsibility for the waste management: Figure 8 shows that majority of the respondents felt that each staff member has crucial role to play in waste management and felt that it is teamwork. The majority of the respondents felt that the waste management should be responsibility of the all staff member such as head of hospital (94 %), head of department (90%), nursing superintendent (98%), pharmacist (84%) and lab supervisor (87%). While, before the inception of the project most of the respondents had the view that head of the hospital and nursing supervisor were responsible for the waste management. This indicates that the project has made considerable improvement on the attitude towards the responsibility of the staff about waste management.
1.4.3. Knowledge about Centralized Treatment Facility (CTF): Figure 9 shows that about 59 per cent of the respondents were found to be aware of the authorization of the facility by state pollution control board for the treatment of biomedical waste by a centralized facility. However, about 94 per cent of the respondents were aware of that their waste was collected by the authorized centralized facility.

1.4.4: Frequency of collection of waste: Figure 10 shows that majority of the respondents (75 per cent) mentioned that collection of waste from their health care facility by centralized facility takes place on daily basis. Eight per cent of the respondents
mentioned that their facility getting the service of collection of waste by CTF on alternative days and 10 per cent of them said waste collection service takes place weekly (5 per cent) and irregular (5 per cent). However, the percentage of the respondents who pointed out that the collection of waste is taking place in their health care facilities on daily basis has increased from 64 per cent to 75 per cent, but still there is a scope of improvement in the disposal of waste.

![Fig 10: Frequency of waste collection by CTF](image)

1.4.5: Availability of treatment and disposal options: The figure 11 reveals that of the total respondents about 91 per cent of the respondents mentioned that their health care facilities were having the facilities of ‘segregation of waste into coloured containers’ and ‘collection of waste by authorized waste disposal agents’, while about 66 per cent and 65 per cent of the respondents mentioned that their health care facilities having the facilities of ‘chemical disinfection’ and ‘autoclaving’ respectively.
1.4.6: **Usage of waste treatment and disposal facilities:** Figure 12 shows that about 91 per cent of the respondents mentioned that their health care facilities were utilizing the facilities of ‘segregation of waste into coloured containers’ and ‘collection of waste by authorized waste disposal agents’, while about 66 per cent and 65 per cent of the respondents mentioned that their health care facilities having the facilities of ‘chemical disinfection’ and ‘autoclaving’ respectively. A small number of the respondents did not know about the disposal. The above two figures i.e. 11 and 12 shows that if the treatment & disposal facilities are available are being utilized them.

![Fig 11: Availability of treatment and disposal options](chart)

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<table>
<thead>
<tr>
<th>Service</th>
<th>Yes %</th>
<th>No %</th>
<th>DK %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Segregation into colored containers</td>
<td>91.2</td>
<td>8.8</td>
<td></td>
</tr>
<tr>
<td>Containment</td>
<td>97.4</td>
<td>0.9</td>
<td></td>
</tr>
<tr>
<td>Chemical disinfections</td>
<td>65.8</td>
<td>0.9</td>
<td></td>
</tr>
<tr>
<td>Burial</td>
<td>93.3</td>
<td>0.9</td>
<td></td>
</tr>
<tr>
<td>Deep burial</td>
<td>98.2</td>
<td>0.9</td>
<td></td>
</tr>
<tr>
<td>Autoclave</td>
<td>99.1</td>
<td>0.9</td>
<td></td>
</tr>
<tr>
<td>Collection by recyclers</td>
<td>91.2</td>
<td>0.9</td>
<td></td>
</tr>
<tr>
<td>Collection by authorized agents</td>
<td>98.2</td>
<td>0.9</td>
<td></td>
</tr>
<tr>
<td>Burning</td>
<td>83.3</td>
<td>14.9</td>
<td>1.8</td>
</tr>
<tr>
<td>Incineration</td>
<td>58.8</td>
<td>35.1</td>
<td>6.1</td>
</tr>
</tbody>
</table>
1.4.7: Segregation of waste: The figure 13 shows that majority of the facilities i.e., 95 per cent of the health care facilities were found to be segregating their waste.
4.8: Segregation responsibility: The figure 14 shows that majority of the respondents mentioned that the nursing staff & auxiliary staff in their health care facilities do the segregation of waste and 35 per cent said that it is done by the auxiliary staff only, while only 5 per cent and one per cent respondents mentioned that the segregation is the responsibility of the nursing assistant and doctors respectively. In fact, all staff who produce waste should segregate it at source, to prevent contamination of recyclable waste and possible harm if waste handlers are left to segregate waste later.

![Fig 14: Who does segregation](image)

1.4.9: Knowledge about colour coding: The figure 15 shows that majority of the respondents (85 per cent) were found to be aware about the usage of colour codes for the disposal of the waste, while 15 per cent were not aware of the colour coding. After the project intervention the knowledge of the respondents about the colour coding system had slightly increased from 83 to 85 per cent but still there is a scope of improvement.

![Fig 15: Knowledge about colour coding](image)
1.4.10: **Usage of colour coding:** The figure 16 reveals that about 77 per cent and 83 per cent of the respondents mentioned that their health care facilities were using the red and blue colour bags/containers respectively for the disposal of waste, while about 66 and 58 per cent of the respondents said that their health care facilities were using the yellow and black bags respectively. Whereas, about the usage of green bag for recyclables and white bags only 43 per cent and 15 per cent respondents in their health care facilities had affirmative response.

![Fig 16: Usage of Colour codes](image)

1.4.11: **Knowledge & practice about the colour-coded bags:** The figure 17 shows that about 65 per cent and 55 per cent of the respondents were found to be aware of the usage of blue and red colour bags respectively, while about 44 percent and 43 per cent of the respondents had the knowledge about the black and yellow bags respectively. It was also observed that about 40 per cent of the facilities were found to be using the red bag as well as blue bags correctly, while about 38 per cent and 26 per cent of the facilities were using the black and yellow bags respectively in a correct way.

The findings reveal that there is a visible gap between the knowledge and practice about the usage of colour coded bags. However, the knowledge level among the respondents
about the colour-coded bags is comparatively better than that of the usage of the colour coded bags in their health care facilities. It indicates that there is a need of emphasis on the raising awareness among the staff members for the improved practice about the colour-coded bags in their facilities.

**Fig 17: Knowledge & practice about colour coding**

<table>
<thead>
<tr>
<th>Colour</th>
<th>Knowledge %</th>
<th>Practice %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yellow</td>
<td>43</td>
<td>26.3</td>
</tr>
<tr>
<td>Red</td>
<td>55.3</td>
<td>40.4</td>
</tr>
<tr>
<td>Blue</td>
<td>64.9</td>
<td>40.4</td>
</tr>
<tr>
<td>Back</td>
<td>43.9</td>
<td>37.7</td>
</tr>
</tbody>
</table>

1.4.12: **Labeling of bio hazards symbols:** The figure 18 shows that only 33 per cent respondent’s facilities were found to be having the labeling of bio hazards symbol on infectious waste, while in remaining facilities, it needs to be initiated. Though the project has improved the practice of labeling the biohazards symbols but still it needs the special attention for further improvement.

**Fig 18: labelling of bio hazards Symbol**

- **YES %:** 33%
- **NO %:** 67%
1.4.13: Availability of personal protective equipment (PPE): The figure 19 of the total the availability of the personal protective equipments was not satisfactory. About 76 per cent of the respondents mentioned that gloves are available in their health care facilities, 60 per cent said about mask, about 56 per cent had positive response about apron, 35 per cent said boots, about 34 per cent said goggles and about 22 per cent responded that trolley for bin are available in their facilities. The availability of the PPE in the health care facility was not found to be satisfactory. It indicates that availability of the equipments needs to be improved.

![Fig. 19 Availability of PPE](image)

1.4.14: Availability of precautionary measures: The figure 20 shows that the level of availability precautionary measures in the health care facilities was found to be very low with respect to the ‘close lid containers’, ‘dedicated trolley for waste’, separate route from that is used for clean, food materials and trolley for bins’.
1.4.15: **Availability of storage place:** The figure 2 shows that of the total 114 respondents, 86 per cent mentioned that the dedicated storage points are available in their facilities, while 14 per cent of the respondents did not have the dedicated storage point in their health care facilities.

1.4.16: **Availability of facilities for safe storage of waste:** The figure 22 shows that 86 per cent of the respondents mentioned that basic facilities for usage storage of waste are not available in their health care facilities. It indicates that there a need for the improvement the facilities for the safe storage of waste.
1.4.17: Duration of storage of waste in the facility: The figure 23 shows that 83 percent of the respondents mentioned the duration of storage of waste is one day in their health care facilities, 6 per cent said two days and 5 per cent said three days while, 5 per cent respondents did not know about the duration of storage in the facilities.
4.18: Waste collection from the facility: About 89 per cent of the respondents mentioned that the waste is collected separately and on a fixed timing in their facilities, while about the different timing of waste collection from the patients visits about 99 per cent respondents had negative response.

![Fig.24: Waste collection practices](image)

1.4.19: Record maintenance and availability of mercury spill management kit: About 45 per cent of the respondents made affirmative response regarding the existence of accident reporting system in their health care facility, about 33 per cent respondents stated that bio hazards symbol on infectious waste is being practised and about 44 per cent of the respondents responded positively regarding the maintenance of register for waste disposal in their health care facilities. Only 31 per cent of the respondents responded in affirmative about the availability of the mercury spill management kit. The findings show that on all the items of maintenance system health care facilities is not satisfactory. It indicates that there is a need of further improvement with respect to record maintenance and the availability of the mercury spill management kit in the facilities.
1.4.20: **Bio medical waste disposal method:** Figure that 94 per cent of the respondents mentioned that the disposal of bio medical waste is collected by the authorized hospital waste agents in their health care facilities, while the 6 per cent respondents mentioned that it is done through some other methods.

1.4.21: **Attitude about the waste management:** The figure 27 shows that about 95 per cent of the respondents had the positive attitude towards the waste management in terms of that it an important issue, it is teamwork and it leads to protection of the workers. While, about 28 per cent said it is the responsibility of government, 43 per cent said that it increases the financial burden and about 33 per cent believed that it is an extra work for the employees. The findings indicates that there is a need of special attention for further
improvement in the attitude of the staff members especially on the items, namely, it is not important, it is government’s responsibility, it increases the financial burden and it is an extra work.

1.4.22: Educational and training programme in the facility: The figure 28 shows that only about 54 per cent of the respondents could attend the educational or training programme on waste management. About 92 per cent of the respondents of the respondents said that there id no facility annual educational & training programme in their health care faculties. While about all of the respondents were interested to receive the trainings on the waste management issues.
1.4.23: Change in bio medical waste management practice: About 77 per cent of the respondents admitted that there is an improvement in the bio medical waste management practice in their health care facilities. While, still 23 per cent of the respondents did not feel any change in their health care facilities.
1.4.24: Information about bio medical waste management: The figure 30 shows that 59 per cent of the respondents received the information about the bio medical waste management i.e. either through project training or project person. It indicates that the project has contributed as major factor in the awareness raising about bio medical waste amongst the respondents.
SECTIION-II

2.0. Impact of the project on the Bio Medical Waste Management Aspects

With the view to assess the impact of the health care waste management project the knowledge, attitude an practice about the about the some of the aspects of bio medical waste management were in the HDMC and Non HDMC health care facilities were studied. The staff of the HDMC hospitals have been given training by the project over one year. The comparative findings of HDMC and Non HDMC health care facilities have been discussed in the next few pages of this section.

2.1. Knowledge about the waste management policy:

The figure reveals that more number of respondents belonging to HDMC health care facilities was found to be having correct knowledge about the legislation than that of the respondents belonging to Non HDMC health care faculties. It indicates that the health care waste management project in the HDMC health care facilities has improved the knowledge about the bio medical waste management rules.
2.2. Knowledge about CTF:

The above figure shows that the knowledge level of the respondents of HDMC health care facilities about the functioning and the authorization of CTF was found to be higher than that of the respondents of Non-HDMC health care facilities.

2.3. Frequency of collection of waste from the facility
The collection of waste from the healthcare facility by the CTF on a daily basis was found to be higher in the Non HDMC healthcare facilities. It means the waste collection practice still needs to be improved in the HDMC healthcare facilities.

2.4. Practice about segregation of waste:

Almost all HDMC and Non HDMC healthcare facilities are segregating waste. But the next graphs show lesser knowledge of the colour codes according to the Rules and availability and use of correct bags so the segregation will need improvement. In these aspects, the HDMC hospitals are better.

2.5. Knowledge about colour codes
The knowledge about the usage of colour coded bags also found to be higher in HDMC health care facilities than that of the respondents belonging to the Non-HDMC health care facilities.

2.6. Usage of colour coded bags:

<table>
<thead>
<tr>
<th>Colour Code</th>
<th>HDMC (%)</th>
<th>Non-HDMC (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>74.6</td>
<td>76.2</td>
</tr>
<tr>
<td>Blue</td>
<td>89.1</td>
<td>80.0</td>
</tr>
<tr>
<td>White</td>
<td>25.0</td>
<td>18.2</td>
</tr>
<tr>
<td>Yellow</td>
<td>59.2</td>
<td>64.4</td>
</tr>
<tr>
<td>Black</td>
<td>72.7</td>
<td>67.8</td>
</tr>
</tbody>
</table>

The above figure shows that the majority of the health care facilities were using the correct colour codes for storing the waste. However, the usage of white colour code was not found satisfactory. It means that the usage of colour codes still needs to be improved.

2.7. Knowledge about use of colour coded bags:

<table>
<thead>
<tr>
<th>Colour Code</th>
<th>HDMC (%)</th>
<th>Non-HDMC (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yellow bag</td>
<td>45.8</td>
<td>40.0</td>
</tr>
<tr>
<td>Red bag</td>
<td>72.9</td>
<td>36.4</td>
</tr>
<tr>
<td>Blue bag</td>
<td>74.6</td>
<td>54.5</td>
</tr>
<tr>
<td>Black</td>
<td>67.8</td>
<td>18.2</td>
</tr>
</tbody>
</table>

The knowledge about the storage of waste into the coloured bags of the respondents of HDMC health care facilities were found to be having better than that of the respondents.
of Non HDMC health care facilities on all the four colour codes. It indicates that the project has improved the knowledge significantly, but still needs to be improved.

2.8. Practice about the storage of waste into the right colour coded bags:

The findings shows that the practice about the category wise storage of waste into the correct coded bins in the HDMC health care facilities was found to better than that of the respondents of Non HDMC health care facilities. It indicates the project has improved the storage practice significantly in the HDMC health care facilities.

2.9. Practice about the labeling of infectious waste:
The findings show that the majority of the health care facilities were observed to be labeling the infectious waste, where none of the Non-HDMC facilities were labeling the infectious waste. It means that the project intervention has significantly improved the practice of labeling the infectious waste. But still the practice about the labeling of infectious waste needs to be improved.

2.10. Availability of storage place in the facility:

The above figure shows that all of the HDMC health care facilities were found to be having the storage place, whereas, only about 29 per cent of the Non-HDMC facilities were found to be having storage place for the bio medical waste.

2.11. Duration of storage of waste
The above findings shows that about 86 per cent of the HDMC health care facilities were not found to be storing their waste more than one day, while about 82 percent of Non HDMC health care facilities were observed having the waste storage time ‘not more than one day’.

2.12. Practice about collection of waste:

![Important practices in facility](chart)

The above figure shows that the majority of the HDMC health care facilities were observed doing the right practices i.e., accident reporting system, labeling of infectious waste, maintenance of register and availability of mercury spill management kit. It indicates that the project in the HDMC health care facilities has made a visible improvement regarding the above said practices.
3.1. Introduction
With the view to evaluate the impact of the project in terms of their knowledge, attitude and practice (KAP) about the health care waste management, the findings of KAP-I and KAP-II were compared. The first KAP survey was carried out before the initiation of the project as baseline survey to understand the ground situation i.e. the need and problem to be emphasized during the intervention. The second KAP survey was done after the 18 months of the initiation of the project. The respondents were chosen randomly from the various health care facilities in the city. To assess the impact of the sustainable health care waste management intervention, the findings of KAP-I (pre intervention) and KAP-II (post intervention) were compared.

3.2. Findings and Discussion:
The comparative findings of pre and post intervention status about the knowledge, attitude and practices about the different aspects of the bio medical waste have been discussed in the next few pages.

3.2.1. Awareness about bio medical waste Rules:
Figure 1 shows that of the total respondents only 25 per cent were aware of existence of any legislation for biomedical waste management in India and only 10 percent of the health care staff knew the name of the rules. However, after the project intervention about 76 per cent of the respondents were found to be aware of the biomedical waste management rules, about 25 percent knew the name of the rules. Though, the knowledge about the name of the rules among the respondents has increased from 10 per cent to 25 per cent but still needs to be improved.

3.2.2. Authorization by SPCB:

Figure 2 shows that in the pre intervention phase, only 23 per cent of the respondents had the knowledge of authorization required by the health care facility from the state pollution control board. Whereas in the post intervention scenario 59 per cent of the respondents were found to be aware of the authorization of the facility by state pollution control board for the treatment of biomedical waste by a centralized facility.
3.2.3: Knowledge about waste management committee:

Figure 3 shows that only 20 per cent of health care staff had knowledge of existence of waste management committee in their facility whereas, after the intervention 61 per cent of the respondents responded positive about the waste management committee in the health care facility.

3.2.4: Responsibility of health care waste management:

Figure 4 reveals that most of the respondents felt that head of the hospital and nursing supervisor play a significant role in waste management and thus they should be responsible for it. Whereas, after the project, the attitudes towards the responsibility of the health care waste management has positively changed. The majority of the
respondents felt that each staff member has crucial role to play in waste management and feel that it is teamwork. The majority of the respondents felt that the waste management should be responsibility of the all staff member. This indicates that the project has made considerable improvement on the attitude towards the responsibility of the staff about waste management.

3.3.5: Frequency about waste disposal:

Figure 5 shows that the majority of the respondents mentioned that waste disposal from their health care facility takes place on daily basis (64 percent). Nearly 18 percent of them said that their facilities dispose health care waste on alternative days. While after the project the majority of the respondents (75 per cent) mentioned that collection of
waste from their health care facility by centralized facility takes place on daily basis. However, the number of the respondents mentioned that the collection of waste is taking place in their health care facilities on daily basis has increased from 64 per cent to 75 per cent but still there is a scope of improvement in the disposal of waste.

3.3.6: Treatment and disposal option utilized:

Figure 6: shows that the project has increased the usage of all three treatment and disposal options, namely ‘segregation of waste into coloured containers’ and ‘collection of waste by authorized waste disposal agents’, ‘chemical disinfection’ and ‘collection by authorized facility’.

3.3.7: Responsibility of segregation of waste:

Figure 7 shows that most of the respondents believed that the segregation of waste is the main responsibility of nursing staff and auxiliary staff. However, after the intervention, the majority of the respondents mentioned that the nursing staff & auxiliary staff in their health care facilities do the segregation of waste and 35 per cent said that it is the responsibility of the auxiliary staff only. It indicates the attitude of the respondents has changed positively after the intervention
3.3.8: Knowledge about colour codes:

Figure 8 reveals that after the project the percentage of the respondents with the knowledge about the colour coding system has also increased from 83 to 85 per cent that can be further focused upon.

3.3.9: Knowledge about the colour coded bags:

Figure 9 shows that shows the project has positively affected the availability and usage of colour coded bags. It indicates that the lack of proper practice of colour code scheme in the facilities in the pre intervention phase. However, in the post intervention survey the
majority of the respondents motioned that the different colour codes are being used for the bio medical waste management

![Fig 9. Availability of colour coded bags](image)

3.3.10: Bio hazards symbols:

![Fig 10. Know biohazards Symbol](image)

Figure 10 shows that only 25% of respondents knew about the bio-hazard symbol, which is mandatory to be used as label under health care waste management. The knowledge about the bio hazards symbols among the respondents has increased from 25 to 33 per cent but still needs special attention.
3.3.11: Maintenance of register:

Figure 11 shows that only 18 per cent of the respondents knew about the maintenance of register for waste management before the project intervention and in the post intervention scenario, 43 per cent of the respondents were found to be aware of the maintenance of waste register. However, the number of the respondents having knowledge about the register has increased but there is further need to be improved upon.

3.3.12: Attitude towards waste management:

Figure 12 shows that the pre intervention scenario shows that 33 % respondents thought that waste was not an important thing and that it was the responsibility of the government and 30 per cent respondents disagreed that it was extra work. While, in the post intervention status, only 4 per cent of the respondents believed that it was not an
important and 97 per cent said that it is teamwork. It indicates that the project has changed the attitude positively about the health care waste management

3.3.13: Information exposure through training:

Figure 13 shows that only 35 per cent of respondents could attend some medical waste training before the project intervention. While, during the intervention the 54 per cent of the respondents mentioned that they have attended the educational or training programme on waste management. The project has only trained staff at HDMC hospitals, but still this KAP survey shows real improvements in knowledge attitudes and practices.

In the future training will be expanded and future surveys will be conducted to show more improvements.