

New opportunities for HMW

15 years ago ABESCO was set up by a team of prevention advisers and environmental coordinators that wanted to give businesses support in the field of safety and the environment. ABESCO is a consultancy firm that supports businesses and governments to develop a safety and environmental policy; and with studies, training and so forth. ABESCO works as an external environmental coordinator for a number of businesses, including various care institutions. Commissioned by OVAM and in collaboration with partners from the hospital sector, ABESCO carried out research into alternative ways to treat hazardous medical waste (HMW). In 2014 that led to an adjustment to the legislation. Sarah Janssens, division manager at ABESCO, tells us more about this study and what has been achieved so far.



You have to trust that after their training, staff will adhere to these rules and regulations strictly, but ultimately you already have that question of trust now.”

Once a hospital has one of these autoclaves, can it simply throw everything in it?

“Certainly not! The legislation also imposes strict conditions on this and therefore demands the necessary compliance within the institution. For example, for ethical reasons limbs may not be autoclaved and ground up. A number of chemical and hazardous substances cannot be put into the autoclave because the process is based on the thermal decomposition of bacteria and harmful micro-organisms but it doesn't necessarily change the harmfulness of chemical products. A product that is corrosive or toxic for example does not become innocuous as a result of being heated. (editor's note: autoclaving is a pre-treatment method and is only a partial alternative for high temperature incineration. The rest fractions after autoclaving still need to get thermal treatment).

When waste is collected within the departments, the necessary care needs to be taken to prevent that type of waste ending up in the decontaminator. The staff must have clearly learned what is permitted and what is not. You have to teach the hospital staff a completely new way of sorting in which there are two types of HMW. One stream that can be destroyed internally and one stream that is still taken to the rotary kiln incinerator in the yellow containers as it always has been. You can't teach that overnight, it will take time. To sum up: decontamination on the hospital site is a fantastic new solution, but there is substantial reorganisation to be done first. Staff need to be trained, the activity needs to be given an environmental permit, the sorting process needs to be revised internally and a location is needed. As soon as all of that has happened, it will provide benefits.

I also think an interesting tack could be to implement a mobile autoclave that could be used for different hospitals. I can imagine that the investment is too large for some hospitals, so sharing one autoclave between a couple of hospitals might be an option. Now all we need is to find someone who wants to set this all up!”



What can you tell us about the study that you carried out with OVAM?

“The treatment technique currently used for HMW is high temperature incineration (950°C) in a rotary kiln incinerator. The aim of the study was to find an alternative treatment method for hospitals to use for HMW, that could potentially be carried out within the hospital walls. We began by working out which techniques were already available. We opted for a method with which HMW can be decontaminated on the hospital site itself. That is done using a machine that heats the waste (to disinfect it) and shreds it (to homogenise the mass and get rid of sharp objects). There are advantages to decontaminate or autoclaving as it is called on the hospital site. The risks from the further treatment of HMW and from transporting it on public highways are removed; the strict, expensive packaging system can be relaxed and because HMW is much more expensive to treat than non-HMW as a hospital you are also saving a great deal of money. I therefore think that there are a lot of positive aspects associated with on-site decontamination, certainly for larger hospitals. The hospital in Bruges is currently the only hospital that has already used this alternative treatment technique.

There are a number of other hospitals that are still investigating this new method. I think that it will be implemented eventually but it requires a lot of initial organisation. The separation and selective collection of waste streams needs to be reviewed, the packaging and labelling of the waste needs to be adjusted and a room needs to be provided for the machine. Naturally, a number of preconditions and inspection requirements have also been incorporated into the new legislation. So we are still looking into what is the most suitable device available on the market, that is both user-friendly and that fulfils the necessary

conditions. This treatment of HMW demands a different approach and most hospitals are still waiting to see which way the wind blows. For larger hospitals I think that decontamination on the hospital's own site could be an interesting alternative.”

Are there no risks involved with on-site decontamination?

“All of the necessary prerequisites are set out in the law and the reliability of the machine is an important factor. The temperature, the pressure and the length of time the waste remains in the decontaminator are also crucial factors. In order to monitor that, the machine must be fitted with a range of measuring instruments and sensors and the machine operator must be properly trained. That could be someone who already works for the hospital who has the right educational background. The maintenance of the decontaminator will primarily be carried out externally.

The person operating the machine is not the only one who will need additional training. Ultimately, treatment is only one aspect. Everyone who deals with separating waste and all of the staff involved with internal transport and storage will also need additional training. The waste streams must be redefined and taught to all staff. It requires a multifaceted approach and all of the facets are equally important for safety.

By decontaminating the waste on site, you shorten the chain, which makes the hazardous aspects more manageable. Nonetheless, setting up this system requires the necessary focus and knowledge.

With regard location and labelling, a clear distinction needs to be made between waste that has already been decontaminated and waste that is still hazardous, using clear colours and symbols.