

## Managing Healthcare Waste Together

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Waste management is one of the biggest challenges for our society now and in the future. Since one of the main factors in economic growth is consumption it follows that waste volumes generally increase along with this growth. The healthcare sector in Ireland has increased its business activity just like any other industrial sector. The growing population and its expectancies has fuelled this activity. Connolly Hospital Blanchardstown (CHB) in Dublin has expanded and cares for more patients every year. As a result its waste volumes have continuously increased.

We took a decision in 2004 to address our waste management by introducing a 2-Phase plan. Phase 1 addresses the demand side i.e. on-site in CHB and Phase 2 would address the supply side, i.e. our supplier of products and services including waste services. Neither phases will ever reach completion, they are work-in-progress since the hospital environment is forever changing and there is always more that can be done to improve performance. This article focuses on Phase 1.

### Aims

The aims of Phase 1 were simple and logical to establish:

- reduce hospital waste costs.
- improve the waste management service and environmental performance.
- contribute to improving hospital hygiene standards.

### Methodology

Many management systems propose the reliable method of Plan-Do-Check-Act (ISO Technical Committee 2004). When applied to CHB waste it entails the following:

- Analyze the existing waste management service.
- Examine the nature and composition of the waste.
- Develop a relationship with the staff so that they can identify a person with

### Environmental Management.

- Devise and propose solutions with the staff as a team while acting as guide and mentor.
- Implement and communicate solutions to all staff.
- Monitor the solutions by dialogue with staff and key performance indicators. In addition:
- Educate staff in the broader environmental impacts of waste management so that they want to participate and not just have to participate.
- Create a common mentality of environmental awareness through frequent staff newsletters, occasional competitions and do not forget to thank staff for their efforts.

### Results

Before we view the results, it is important to consider certain aspects of the hospital's growth. Figure 1 shows the range of activities that are typical indicators of our activity. The average increase of each of these five indicators gives us a growth in hospital activity of 20% from 2004 to 2006. This explains how the volume of total waste has increased by 8% in the same time period, as shown in the light blue trend in Figure 2. (Note: In Ireland, clinical waste is referred to as Healthcare Risk Waste)

The first result, as seen from Figure 2, is that there has been an improvement in waste segregation. Healthcare Risk Waste (HCRW) stream has diverted a sizeable fraction to the Non-Risk stream.

The second result of Phase 1, as seen from Figure 3, is that the total waste costs have been driven down by 16% over the period since 2004. In

monetary terms, this is providing an average saving of €4,363 per month. This has been achieved by changes in staff practices and without capital expenditure.

The third result is that these efficiencies have been achieved without compromising hospital hygiene standards. Connolly Hospital moved from a score of 76% to 89% in the National Hygiene Audits.

#### **Conclusion**

Based upon the aims of Phase 1 of the plan and the results obtained, it is clear that a modern hospital can benefit in practice and financially by the implementation of an organised waste management plan.

Due to improved segregation of the waste, the impact on the environment may have been reduced.

Although waste is a source of infection, the improved control and education regarding waste has contributed to improved hospital hygiene.

The most important element in the success of this project has been involving the staff in formulating the solutions and providing them with adequate environmental education.

#### **To the Future**

Phase 1 will continue developing with the life of the hospital. For example, Environmental Representatives are being established on a voluntary basis at a department level. They will further help to create a "green" mentality with their colleagues in the organisation.

The strategy of Phase 2 is being prepared at the moment with implementation beginning this year. This is where we begin to bring about change external to CHB:

- We will work with suppliers with a view to improving the composition and volume of their packaging.
- Work with stakeholders to examine how we can improve the actual products used in patient care. For example in the Vienna Hospital Association, Glanzing Paediatric and Preyer Paediatric Hospitals are eliminating PVC and DEHP in medical practice because of the associated health risks of these products. (HCWH Europe/EPHA Environment Network/EEN 2005)
- Waste contractors will be given a defined time period to engage in best environmental and social responsibility regarding all stages of the cradle-to-grave path of our waste.
- Educate the centralised off-site procurement department in the principles and benefits of green procurement.

The need for healthcare organisations to focus on waste and environmental management is imperative from both monetary and environmental perspectives. The ultimate negative impact of poor waste management is on human health through the various pathways that pollution takes to the person both locally and abroad. The World Health Organisation has estimated that more than 3 million children under five die annually from environmental-related causes and conditions (WHO 2005). In Europe, air pollution is the greatest environmental factor that impacts on human health yet so much of our healthcare waste is treated by incineration (EEA 2005).

Is it not ironic that an industry which sets out to improve human health has such a propensity to impair it?

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