

Measures to Reduce Production of Hazardous Health Care Waste

Health Department XÀTIVA – ONTINYENT (Spain)

Submitted: August 2015

GGHH Agenda Goals

- Leadership
- Chemicals
- Waste
- Pharmaceuticals

Hospital Goal

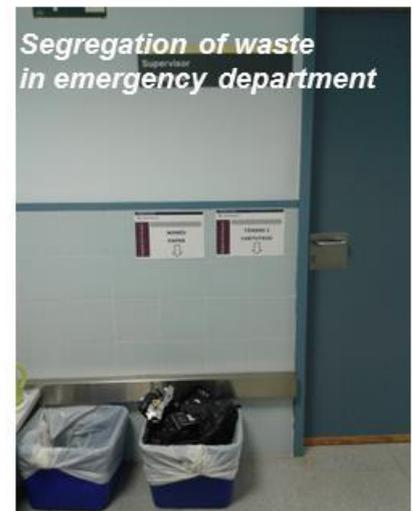
- Reduce, treat and dispose of the waste generated in healthcare centres, especially hazardous waste, with safety.
- Replace harmful chemicals with safer alternatives.
- Reduce the carbon footprint of the hospital.

The Issue

Over the last two years, we at DSXO have committed to promoting the GGHH Network, the objectives of the GGHH Agenda and environmentally responsible practices in its healthcare centres. We also maintain a strong commitment to training members of the healthcare system on environmentally responsible and sustainable practices, and advocate for policies and practices that improve environmental health. This also involves the reduction in volume of waste, especially hazardous waste (one of our prime objectives), and the reducing social, environmental and economic costs of waste management.

Sustainability Strategy Implemented

To meet our objectives, we have placed much focus on training our staff and awareness building. Staff training sessions have been a key tool in improving environmental health. Having started one year ago, this training is complimented by a programme of suggestions with selected actions that are implemented and the results of which are collected. In addition to this, random daily inspections are carried out by the Department of Preventive Medicine to evaluate the improvement of waste management.



We have also strengthened internal and external communication to raise awareness at an institutional and community level.

Other actions have included the implementation of electronic medical record system, a reduction in onsite consultations at the hospital (with improved telehealth between primary health care centres and hospitals), and the introduction of a "Guide to Good Use of Paper and Printers" (which has led to the reduction of the number of printers in our facilities).

In terms of pharmaceuticals, we have established a "Program for the Optimized Use of Antibiotics in Hospitals", to optimize antibiotic prescriptions and reduce the generation of pharmaceutical waste.

We have also enhanced peritoneal dialysis at the hospital and made the switch to the exclusive use of iron oxide in sentinel node marking surgery for breast cancer.

Implementation Process

In 2014, we established a 'Plan of Action and Awareness for Environmental Improvement Action', to reduce waste production and consumption of natural resources, assessing compliance and international recommendations, with particular reference to the Global Green and Healthy Hospitals Agenda.

Environmental actions promoted by:

- **External Communication:** The development and dissemination of policy and of a good environmental practices manual for citizens and health professionals. Press releases were sent to newspapers, radio and TV and we also published information and news on our institutional websites (<http://xativaontinyent.san.gva.es/>, www.san.gva.es and www.gva.es) and social networks (@gva_dsxo and Facebook). We also attended the "Health Council" quarterly meetings to promote citizen participation through associations of users, patients, consumers and municipalities.
- **Internal Communication:** Internal communication was mainly carried out by e-mail and intranet. We also created a program of training sessions conducted by the Department of Preventive Medicine, covering: 1. Knowledge of and compliance with environmental regulations. 2. Minimization and segregation of waste production, and 3. Knowledge of negative environmental impacts of health activities. Improvement actions are collected through a program of suggestions. The annual cost of a nurse attending a training program is €25,000 for both hospitals.

Tracking Progress

Two nurses and a preventive medicine physician conduct **daily inspections** of waste management in hospital service units, especially in key areas such as emergency, ICU and operating rooms. From these inspections, they have compiled a report containing actions for improvement, aimed at informing future training sessions.

Participants on the training sessions are evaluated and in the first half of 2015, we conducted 17 training sessions with 255 participants.

We also record the volume of hazardous waste produced as classified by regional legislation. To date, production of Type III waste has amounted to 50,343kg in 2012, 50,382kg in 2013 and 46,064kg in 2014. For type IV waste, the figures are: 5,556kg in 2012, 4,780kg in 2013, and 3,070kg

in 2014 for a 44% reduction in type IV waste over 2 years.

Challenges and lessons learned

1. Definitive action from the management team for environmental improvement, based on the service of preventive medicine, developing a strong professional awareness by improving environmental health from the health activity.
2. We now have clear, strong environmental objectives.
3. A program of continuing education is vital, with a constructive and transparent debate, as well as feedback through a program of suggestions.
4. The public support for environmental improvement is essential.
5. Support of health professionals most involved in the activities and in environmental improvement, such as nursing, is necessary, if you want to act and improve.

Next steps

Until 2017:

1. Improve training in environmental management: 1 weekly session for 20 people, with program suggestions.
2. Create an Environmental Health Unit.
3. Influence the preventive maintenance of facilities and equipment, avoiding failures.
4. Develop improved "single-use classified material", choosing suppliers that complying with legislation.
5. Implementation of an inter-centre management of plastic containers for hazardous waste.
6. Reducing the use of formaldehyde, especially in pathology service.

Demographic information

The Department of Health Xativa-Ontinyent provides a public assistance network for 210,000 people in Valencia, Spain, with two hospitals and primary care:

- Luis H. Alcanyís Xativa (university hospital): 240 beds, 8 operating rooms, 1 TAC, 1 NMR (hospital)
- H. General of Ontinyent: 45 beds, 3 operating rooms, 1TAC (hospital)
- 19 health centres and 51 smaller municipal clinics (primary care)

Links (*Accessed: 24 august 2015*).

1. European List of Waste:

<http://ec.europa.eu/environment/waste/framework/list.htm>

2. **Local law GVA 240/1994** (in Spanish): <http://goo.gl/yveES7>

3. **SIGRE**: www.sigre.es/en/what-is-sigre/

4. **PROA**: Rodríguez-Baño J et al. Programas de optimización de uso de antimicrobianos (PROA) en hospitales españoles: documento de consenso GEIH-SEIMC, SEFH y SEMPSPH / Programs for optimizing the use of antibiotics (PROA) in Spanish hospitals: GEIH-SEIMC, SEFH and SEMPSPH

consensus document. *Enfermedades Infecciosas y Microbiología Clínica*. 30(1): 22.e1-22.e23. Enero 2012. [Doi: 10.1016/j.eimc.2011.09.018](https://doi.org/10.1016/j.eimc.2011.09.018) Available in: <http://goo.gl/pU7Q8H>

5. Roig Bataller A. et al. **Ganglio centinela con óxido de hierro**. cómo lo hacemos. In: 30 Congreso Nacional de Cirugía. November 2014. Available in: <http://goo.gl/wtqprs> - (document in pdf) <http://goo.gl/jDqROo>

6. **INNOVALL** – Clúster Nacional de Innovación y Sostenibilidad: www.innovallcluster.com/en-us/Home/Section/lineas-trabajo-1

Quotes:

CONCEPCIÓN OLIVER:

"It is better to reflect and think, before using and discarding" ("Más vale reflexionar y pensar, antes que utilizar y desechar").

"If we reduce waste, especially hazardous waste, we will improve the environment and to do this, we need to communicate, to make people aware" ("Si reducimos desechos, residuos, sobre todo peligrosos, mejoramos el medio ambiente y tenemos que comunicarlo, para que la gente se conciencie").

SERGIO GARCÍA:

"For every sanitary action, both collective and individual, we must consider its implementation with environmental improvement. We talk about clinical, social, and economic improvement, but rarely about environmental improvement." ("Para cada acción sanitaria, individual y colectiva, tenemos que pensar en implementar la mejora ambiental. Hablamos de la mejora clínica, social, económica... pero casi nunca de la mejora ambiental...").

List all contacts named in this case study:

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Keywords / topics:

Hazardous waste, waste management, environmental management, hospital, training.