

# **Carbon awareness and waste segregation campaign for Leeds Teaching Hospital NHS Trust**

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## **Executive Summary**

**STOP Think Before You Throw** is a campaign aimed at Leeds Teaching Hospital Trust (LTHT) front-line staff to promote correct waste segregation to reduce the NHS carbon footprint and associated financial costs. The campaign has three main components; an educational leaflet, waste segregation posters and prompt stickers.

With similar campaigns resulting in large savings, it is hoped that by implementing this campaign, the potential savings of 70 tonnes of carbon emissions, as set out in the LTHT Carbon Management Plan (2), are achievable.

## **Introduction**

It is very difficult to deny that climate change is happening. The Lancet recently stated that 'climate change could be the biggest global health threat of the 21st century' (1); a warning a health organisation such as the NHS, cannot ignore.

The LTHT stated the key impacts on climate change in their Carbon Management Plan. Such impacts include severe weather changes which impact directly on health, as well as exacerbating inequalities in health and increased migration to the UK (2). These changes will put further strain on public resources, particularly the NHS, including Leeds. It is therefore imperative that we start to plan now for a sustainable future with appropriate healthcare provisions.

The cause of global warming is the excessive use of carbon rich fuels and the subsequent greenhouse gas emissions, in particularly carbon dioxide (CO<sub>2</sub>). Whilst the developed world is largely responsible for global warming, great inequalities exist in terms of the impact of climate change. The worst affected areas are often those that have contributed least to global carbon emissions.

In an attempt to curb these excessive emissions the Government published the Climate Change Bill in November 2008. This sets very stringent and ambitious targets for the UK as a whole. The UK carbon emissions target for 2020 is 26% lower than 2007 figures, and by 2050 the bill aims to reduce carbon emissions from the 1990 base line by a staggering 80% (2).

As one of the largest public sector organisations in Europe, the need for change in the NHS was recognised in the 2009 NHS Carbon Reduction Strategy "Saving Carbon, Improving Health". This strategy set targets accordingly with the climate change bill, but went one step further and added a target for 2015 of a 10% reduction from the 2007 baseline (3).

In order to achieve these ambitious goals that are now a legal obligation, the Leeds Teaching Hospital Trust set out a Carbon Management Plan in March 2010 and signed up to the Good Corporate Citizenship Assessment Model.

The LTHT Carbon Management Plan set out strategies for reducing trust carbon emissions to meet the 2015 target of 10% from the 2007 baseline (3). In particular it outlined in section 6.5.2 the need for appropriate waste segregation, with a potential saving of 70 tonnes of CO<sub>2</sub>, and in section 6.5.3 the need for a carbon awareness campaign (2).

This paper will address mainly section 6.5.2, introducing a campaign to raise awareness amongst front-line staff regarding the environmental and financial impact of inappropriate waste segregation. As well as addressing section 6.5.2 it will also offer some resources that can be used in wider awareness campaigns, as set out in section 6.5.3 (2).

## **Background**

In 2007/2008 the LTHT, excluding procurement, produced around 98 tonnes of CO<sub>2</sub>, at a cost of £21, 829559 (2). It is estimated that around 3.9 % (3872 tonnes CO<sub>2</sub>) is due to waste (2). This equated to an annual waste disposal bill in 2007/2008 of £1, 309189 (2).

From April 2011 the NHS is expected to purchase their carbon allowance accordingly with the Carbon Reduction Commitment Energy Efficiency Scheme which encourages efficiency savings and reduced carbon emissions. Therefore, even though waste equates to a small percentage of overall NHS emissions, any savings could offer financial gains, especially in light of the current economic pressures on the NHS.

In the LTHT Carbon Management Plan it was estimated that, if properly instigated, a waste segregation strategy could save the trust around 70 tonnes of carbon per annum. A waste Audit in Whipps Cross University Hospital NHS Trust reported that 70% of the contents of clinical waste bags was actually domestic waste (4). If the same is true in the LTHT there is great potential for carbon emissions from incineration to be reduced, as well as the significant financial savings associated with changing waste streams; on a ward level disposing of a bag of clinical waste costs £6.40, whereas disposing of one bag of domestic waste costs only £1.90 (5).

The importance of recycling should also not be overlooked. Whilst up to 40% of NHS waste is potentially recyclable, less than 10% (4) is actually recycled, causing significant environmental harm by inappropriate incineration of waste or disposing in landfills. Currently recycling is very limited within the LTHT, and in our campaign we would like to outline the potential of recycling bins to be introduced into all clinical areas. Most packaging could be recycled, but is currently going into other waste streams as recycling bins are not readily available.

## **Assumptions and Limitations**

We suggest that the campaign as stipulated below is initially run as a pilot on a single ward to establish whether it would be effective to be extended to cover the whole trust. Whilst the pilot is running it is worth considering commissioning a trust-wide audit of waste, to

establish where the majority of the waste in the trust comes from, and also to identify those areas with the worst waste segregation that can then be appropriately targeted.

This will also allow for more accurate calculations of the potential carbon emission reductions and financial implications of the 'STOP, Think Before You Throw' campaign. Currently, as no actual audit data is available, potential savings were calculated from averages seen in other trusts with similar campaigns that have undertaken waste audits.

## **Campaign - STOP Think Before You Throw**

### **Aim:**

To raise awareness amongst front-line staff of carbon emissions and the impact appropriate waste segregation can have, with the particular aim of increasing appropriate segregation of waste to reduce unnecessary incineration of waste that could either go to land fill or be recycled.

### **Objectives:**

1. To raise awareness amongst front-line staff for the need for a reduction in carbon emissions, and the impact on climate change
2. To empower staff to work together and make informed choices to reduce carbon emissions in their work environment
3. To increase appropriate waste segregation in the NHS setting
4. To reduce inappropriate incineration of waste and therefore reduce the consequences to the environment
5. To encourage recycling and reduce inappropriate landfill waste
6. To reduce the cost of waste disposal within the NHS

### **Proposal**

The campaign will consist three components; an educational/promotional leaflet, educational waste segregation posters, and stickers with the slogan 'STOP Think Before You Throw' to remind staff.

### **Launch**

The campaign should be launched at a monthly staff meeting if possible, at which point all staff members should be given a copy of the 'STOP Think Before You Throw' leaflet, along with some basic in-service training on the need for appropriate waste segregation.

At this launch there should also be the election of a "waste champion"; a member of staff passionate about sustainability and willing to act as a "go to" person, should any questions arise about the most appropriate route for disposal. This champion will also help to motivate staff and keep the campaign going beyond the initial launch.

## **STOP Think Before You Throw resources**

### **1. Leaflet**

An online LTHT staff survey in 2008, as part of the Carbon Management Study, showed that of the 400 staff sufficiently motivated to respond, there were relatively low levels of awareness of carbon emissions (2). This indicated that there is potential for savings if staff were appropriately educated. Thus the leaflet will support the initial launch, acting as an educational and promotional tool, explaining to front-line staff why carbon reduction in the NHS is important and what they can do in their clinical areas to reduce the NHS carbon footprint.

The leaflet aims to be educational and informative without conveying a negative picture of the global climate change situation. The reader should feel empowered to make a difference, and not overwhelmed by the prospect of the changes.

An initial run of 50 leaflets will be printed so that all staff members present at the launch are given one, as well as a small number being available in staff rooms etc, without creating excessive waste by putting too many in circulation. It should also be made available on the trust intranet as a resource for staff to access.

### **2. Waste segregation posters**

Our waste segregation posters are colourful and eye catching, designed to attract attention and educate staff about what should be discarded in which bin. By using both pictures and words we hope to cover the whole spectrum of front-line staff including doctors, nurses, support staff, administrative staff, domestic staff and porters. We recognise that front-line staff cover a wide range of educational backgrounds, as well as different ethnic origins, whose first language may not be English. We hope that by using illustrations as well as words, it may reach staff whose understanding of English is limited.

A3 posters are to be displayed in clinical areas close to bins to promote the message amongst staff. Smaller A5 stickers of the posters will also be placed on bins to act as a prompt at point of disposal.

In order to increase staff awareness of carbon emissions LTHT already use a screen-saver energy campaign. We suggest that the posters are to be displayed on this screen saver whilst the computers are on standby, to increase staff exposure to the campaign.

### **3. Stickers – STOP Think Before You Throw**

Small stickers with the slogan 'STOP Think Before You Throw' should be placed on all bins to act as a memory trigger to encourage staff to think about whether they have the right bin at point of disposal. This is reasonably simple for the permanent bins which only have removable plastic bags. However, with regards to sharps bins

it is a bit more complex and will involve a protocol i.e. adding the sticker will have to become part of the sharps bin assembly protocol.

Both the posters and leaflet can be used as resources as part of the general Carbon Awareness Campaign as outlined in section 6.5.3 of the LTHT Carbon Management Plan.

## **Special considerations**

### **Infection control**

It is important to remember that whilst waste limitations are very important, the ward is a clinical environment and that infectious or possibly dangerous waste must be disposed of responsibly. Therefore it is important to recognise that whilst sharps bins should contain only sharps; if removing the needle from the syringe or the scalpel blade from the scalpel poses any risk to staff it is important to dispose of them as a unit. It is also important to place any waste that is potentially infected with blood products or anything that poses a risk to human health, conservatively. Therefore the front-line staff should carry out a risk assessment before deciding which bin to use to appropriately dispose of waste. This shows the complexity of focussing on waste and incineration limitation, while prioritising infection control and safety.

As the stickers and posters will be displayed in clinical areas, it is important to ensure that they are durable and wipe-able so that a strict infection control policy can still be adhered to.

## **Finance**

### **Cost of implementation**

The implementation of a pilot study based in one ward will be addressed. Quotes have been done by two Leeds based firms; **Colour Copy Leeds** and **Print Leeds**. By choosing Leeds-based firms, the cost and resulting carbon emissions of transportation have been reduced. Both firms have been chosen due to their credo for environmentally friendly and sustainable production practices and have been chosen for their ability to provide for enough resources for a single ward for a full year.

The overall printing cost for a one year supply of the campaign resources would be approximately £330 plus VAT. This is for;

- 18 laminated A3 wipe-able colour waste segregation posters (3 of each)
- 50 leaflets
- 1000 (approximately 3x7cm) 'STOP Think Before You Throw' stickers, to be placed on small sharps bins
- 500 (approximately 6.5x16cm) 'STOP Think Before You Throw' stickers to be placed on small sharps bins

- 60 (approximately 7.5x18cm) 'STOP Think Before You Throw' stickers to be placed on the larger permanent bins
- 10 orange clinical waste bag posters as A5 size information stickers to be placed on large permanent bins
- 20 of the tiger stripe offensive waste posters as A5 size information stickers to be placed on large permanent bins
- 10 of the yellow waste posters as A5 size information stickers to be placed on large permanent bins
- 20 of the domestic bin posters as A5 size information stickers to be placed on large permanent bins

The numbers for this quote were based on a brief survey of a general ward, counting up the total number of bins, namely; 10 offensive waste bins; 5 yellow clinical waste bins; 5 orange clinical waste bins; and 10 domestic bins.

This was then multiplied by two allowing enough stickers for the stickers to be replaced halfway through the year to account for general wear and tear.

The numbers of stickers needed for sharps bins were calculated after discussion with a general ward sister, who estimated that on an average day they used 2 small and one large sharps bin.

### **Potential savings**

As no waste audit data is available for LTHT it is difficult to estimate the true savings that this campaign may allow.

If we assume that the campaign can help achieve the 70 tonne reduction in carbon emissions expected from the LTHT Carbon Management Plan, then this will already have great potential savings for the trust in terms of a reduced need for carbon trading costs.

In 2007/2008 the LTHT produced 3872 tonnes of CO<sub>2</sub> from waste, at a cost of £1,309,189(2). Therefore the average cost of 1 tonne of CO<sub>2</sub> for the LTHT is £338. If our campaign is successful in achieving the 70 tonne reduction, there is the potential to save £23,660 per annum.

### **Conclusion**

Campaigns such as this are essential if we are to reach current targets for carbon reduction. Previous trusts have shown the environmental and financial gains which can be achieved through focused campaigning, so it is in everyone's interests to reach these goals. It is not just a legal obligation to reduce our emissions; it is our moral obligation to generations to come.

We recognise the importance of campaigns working together to achieve a common goal. The LTHT already have a General Awareness Campaign (2), which targets on a broader

level carbon reduction strategies within the Leeds hospitals. STOP Think Before You Throw is versatile and can work within this campaign to spread messages of waste reduction. It could be integrated into their internal training, their ebulletin and could be a component of their email footers and screen savers.

As previously mentioned, in order to fully understand the areas that most need work it would be useful to conduct a LTHT waste audit. This audit would help focus the waste needs to the correct areas to target the wards/hospitals that most need help in correctly disposing of waste.

One way to reduce waste further is the use of recycling bins within the trust. It is becoming common place to recycle at home so the facilities should be available to everyone at work too. One audit found that up to 40% of operating theatre waste is potentially recyclable (6), demonstrating that this is currently an untapped way to reduce carbon emissions and cost within the NHS. We suggest the implementation of recycling bins in clinical areas throughout the LTHT to work alongside our campaign.

## **References**

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4. **NHS Confederation**, *Taking the temperature; Towards an NHS response to global warming* [Online] [Cited: June 20th, 2011.]  
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[http://www.sdu.nhs.uk/documents/case\\_study/1282131856\\_fMnh\\_waste\\_-\\_queen\\_victoria\\_-\\_disposing\\_of\\_waste\\_correc.pdf#search="waste"](http://www.sdu.nhs.uk/documents/case_study/1282131856_fMnh_waste_-_queen_victoria_-_disposing_of_waste_correc.pdf#search=)
6. **DCJ Hutchins and SM White** *Coming Round to Recycling*. BMJ 2009 Vol 338:B609

## Appendix 1: STOP Think Before You Throw leaflet

### What does this mean for the FUTURE?

Carbon emissions contribute to climate change. Segregating waste appropriately reduces carbon emissions, and is a step towards building a safe, secure and sustainable future.

Climate change will not just affect the planet. Droughts and flooding will cause displacement of populations, food shortages, hunger and devastating health consequences.

Every step towards reducing carbon emissions and fighting climate change will reduce the threat of these consequences to health worldwide.

### Where can I find out more?

Learn more about what goes where:

- See our posters around your ward!



- Visit the NHS Sustainable Development Unit website: <http://www.sdu.nhs.uk/>

#### References:

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2. Whipps Cross Hospital: <http://www.whippsx.nhs.uk/news/2006/11483114251304.html> accessed 10/06/2011
3. *Coming round to recycling*. D C J Hutchins, S M White. : BMI, 2009, Vol. 338:b609

## Promoting waste segregation within the NHS



Waste of time...?

## What is this all about?

The NHS has pledged to achieve an **80% reduction** in carbon emissions by **2050**.<sup>1</sup>

With a carbon footprint of **18 million** tonnes CO<sub>2</sub> per year<sup>1</sup>, it is imperative to **act now** to avoid further impacts on our environment.



Appropriate **waste segregation**, **recycling** and **reuse** are some of the ways we can reduce our carbon footprint. As frontline staff we have the power to make a...

**REAL DIFFERENCE!**

## Did you know....?

- ✎ In 2007-2008 waste cost the NHS **£71.2 million**.<sup>1</sup>
- ✎ 1 in every 100 tonnes of domestic waste in the UK is NHS waste<sup>1</sup>.
- ✎ Clinical waste is **six and a half** times more expensive to dispose of than domestic waste – putting a paper towel in a clinical waste bag costs £1 compared to 15p in a domestic bin<sup>2</sup>.
- ✎ **Only 4%** of the contents of a sharps bin was actually sharps<sup>3</sup>.

**These facts highlight how important it is to separate waste appropriately.**

## So what can **YOU** do?

Have you seen our stickers ?



- ☺ Ensure you segregate waste and know what goes in which bin— take a look at our posters!
- ☺ Encourage co-workers to segregate waste.
- ☺ Reuse non-sterile items whenever possible.
- ☺ Lobby managers to provide recycling bins in your hospital.

Appendix 2: STOP Think Before You Throw sticker



Appendix 3: STOP Think Before You Throw posters





**STOP**  
THINK BEFORE  
YOU THROW

## Recycling



Tins  
and  
Cans



Glass



Cardboard



Plastic



Paper



**STOP**  
THINK BEFORE  
YOU THROW

## Offensive: Landfill



Dressing with no wound infection



Soiled paper couch roll



Non-infectious  
continence pad



Empty stoma bags



Empty catheter bags



Used nappies



**STOP**  
THINK BEFORE  
YOU THROW

**Clinical waste:  
Non-incineration**



Any item soiled with  
infected bodily fluids

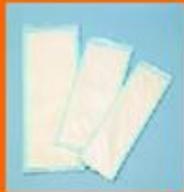
Used disposable  
instruments  
(Non sharp)



Continence pad with  
known U.T.I or gut infection



Dressings soiled with  
infectious materials



**STOP**  
THINK BEFORE  
YOU THROW

**Infectious waste: Incineration**

Reduce wherever possible -medical Incineration causes  
around 1% of Europe's toxic sulphur dioxide emissions



Soiled bedding from  
isolated patients



Heavily blood-stained  
dressings or dressings  
from infected wounds



Any soiled waste  
from isolated  
patients



**STOP**  
THINK BEFORE  
YOU THROW

**Sharps Waste: Incineration**

Scalpel razors, Needles - Syringes must be disposed of as one unit



Non medicinal contaminated  
sharps

scalpel blades



phlebotomy syringes



lancets



Sharp disposal  
instruments



Undischarged  
syringes



Medicinally contaminated sharps



Partially discharged syringes



Fully discharged  
syringes



Any Sharps used to  
administer cytotoxic/  
cytostatic products

## Appendix 4: Quotes for publication

### Colour Copy Leeds

Hi Lynette,

The cost for the A3 prints and encapsulations and A4 prints will be £79.74 + vat.  
Any problems please let me know

Kind regards  
Dan

**From:** Lynette Greyling [<mailto:um08lg@leeds.ac.uk>]  
**Sent:** 27 June 2011 12:51  
**To:** [sales@colourcopyleeds.co.uk](mailto:sales@colourcopyleeds.co.uk)  
**Subject:** Quote  
**Importance:** High

To whom it may concern would you please give me a quote for the following work for a business case.

I would like:  
18 laminated A3 wipeable Colour posters  
50, 2 sided Colour A4 leaflets

Regards

Lynette Greyling

## Print Leeds

Hi Lynette

I will just quote you in the email then.

1000 of the green stickers 3x7cm  
500 of the green stickers 6.5x16cm  
60 of the green stickers 7.5x18cm  
10 of the orange information stickers A5 size  
20 of the tiger stripe information stickers A5 size  
10 of the yellow information stickers A5 size  
20 of the black information stickers A5 size

Printed on white self adhesive vinyl with a gloss laminate.  
All Stickers can be kiss cut on a sheet or square cut individually.  
The cost will be £250 + vat.

Thanks

Nicole



PRINT - LEEDS  
PLASTIC FOIL LENTICULAR

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## Appendix 5: Power point presentation



**Waste – just a load of rubbish?**  
Sustainable Healthcare SSC 3.3  
Caroline Anderton, Lynette Greyling,  
Laura Shepherd

**Quiz Time!**

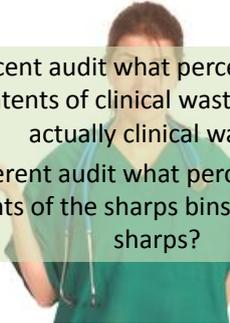
How much does it cost to incinerate of 1 tonne of clinical waste?



**£800-£1000!**



In a recent audit what percentage of the contents of clinical waste bags was actually clinical waste?  
In a different audit what percentage of the contents of the sharps bins were actually sharps?



30% clinical waste!  
4% sharps!



**Why is sustainability and waste reduction important?**  
And why is it relevant to the NHS and healthcare professionals?



- 'Climate change could be the biggest global health threat of the 21<sup>st</sup> century' – The Lancet 2009
- Changing patterns of disease, water and food insecurity, extreme climatic events
- It is the vulnerable who are most at risk, but it will affect us too

**CLIMATE CHANGE**

## Waste

- 1/100 tonnes of domestic waste in UK comes from NHS, most ending up in **landfills**
- Incineration releases **MORE** carbon
- Recycling??
- **Waste segregation** is important

### So why the NHS?

- Carbon footprint: **18 million tonnes**
- Health organisation endangering lives!?
- MANY reasons why the NHS should get involved...

### ££ Money! ££

- We are in debt – big time
- NHS cuts - £20bn must be saved
- Sustainability = £££
- It is in **everyone's** interest:

### Money!.. again

- Carbon taxation
- We must prepare!
- Carbon Reduction Commitment - £12 per tonne = **£216 million**
- Organisations will be ranked
- Coming very soon...

### Setting positive examples

- To individuals
- To the UK
- To Europe
- To the World!

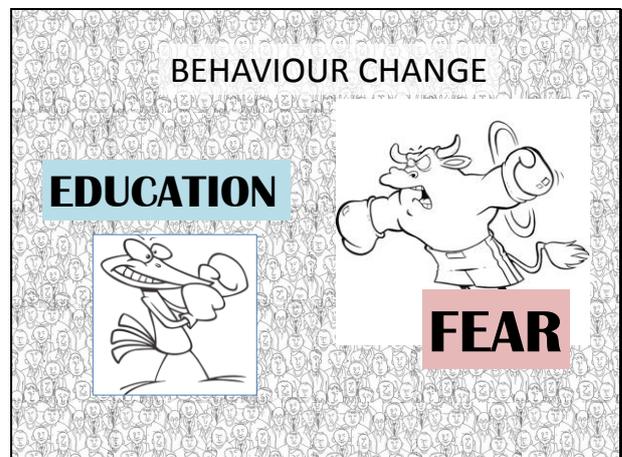
## What is already happening?

- Queen Victoria Hospital recycling
- Isle of Man real nappy campaign
- Nationwide campaign to reduce medicines waste



## Waste Watchers Toolkit

- Educate and Empower staff
- Steve Sellwood – Facilities Manager Royal Berkshire NHS Foundation Trust
- Toolkit hard to get hold of



### Health Belief Model

*Theories and Models in Communicating Health Messages*

- 1) Incentive to change
- 2) Risk of current behaviour
- 3) Benefits outweigh barriers
- 4) Confidence to make change

**Barriers**

- Lack of bins, difficult access to bins
- These issues need to be addressed for any campaign to work





## Special considerations

- Infection control
  - Patient and staff safety
  - Wipe-able and durable
- Waste
  - Leaflets should not produce unnecessary waste
  - Careful location and distribution



## Lastly...

- Campaign specifics in business case
- This is an important issue!

Thank you



Any Questions?

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- NHS Cuts: <http://www.guardian.co.uk/society/2011/jan/19/nhs-cuts-scale-shakeup-surprise>
- Carbon Taxation: <http://www.carbontrust.co.uk/policy-legislation/business-public-sector/pages/carbon-reduction-commitment.aspx>
- SDU maps of waste and water emissions: <http://www.sdu.nhs.uk/publications-resources/66/Building-energy-use-waste-and-water/>

- Whipps Cross Hospital: <http://www.whippsx.nhs.uk/news/2006/11483114251304.html>
- The Stern Review: [http://www.direct.gov.uk/en/NI1/Newsroom/DG\\_064854](http://www.direct.gov.uk/en/NI1/Newsroom/DG_064854)
- Queen Victoria Hospital: [http://www.sdu.nhs.uk/documents/case\\_study/1282131856\\_fmnh\\_waste\\_-\\_queen\\_victoria\\_-\\_disposing\\_of\\_waste\\_correc.pdf](http://www.sdu.nhs.uk/documents/case_study/1282131856_fmnh_waste_-_queen_victoria_-_disposing_of_waste_correc.pdf)
- Isle of Man real nappy campaign: <http://www.sd-commission.org.uk/publications.php?id=311>
- Waste Watchers Toolkit: <http://www.showcase.nic.nhs.uk/ShowcaseDetails.aspx?id=9>
- GV Health: <http://www.gvhealth.com/about/gv-health.html>
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