

# Toolkit for Greening General Practice







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This PDF document contains hyperlinks to external websites (click once on blue-underlined web addresses).

It also contains hyperlinks connecting sections of the toolkit. Click on any of the headings in the index below to go directly to that section. 'Return to index' links occur throughout the document.

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This toolkit has been prepared from open-source information by Dr Rebecca Randerson FRNZCGP and Dr Rochelle Phipps FRNZCGP. Many thanks to all who contributed to the preparation of this toolkit with their time and expertise. Suggestions on content or enhancing the toolkit's functionality are welcome. Contact: [greeningyourpractice@gmail.com](mailto:greeningyourpractice@gmail.com).

# Toolkit for Greening General Practice

## Introduction

This package has been developed to assist with individual general practices making environmentally responsible changes where possible in the day-to-day running of their practice.

It is designed to make these changes as easy as possible. We are aiming for changes that are at least cost-neutral. Often a cost saving is attainable in addition to the environmental benefit.

It is prudent to think beyond solely financial costs. Consider the true costs in the big picture – to the global environment, in the energy required to manufacture a product, any toxins or waste resultant from the manufacturing process, to the emissions in packaging and transporting the product and to the conditions and wages of the workers who manufacture the product for us. This is the concept of the triple bottom line. This refers to balancing outcomes in 3 areas:

- the finances of the practice
- the outcome for the environment and
- the welfare of all the people involved in the practice's work (both direct employees and those manufacturing the resources used in the practice).

As health professionals, we have a responsibility to the health of humankind. Thus it is wise to consider what impact the “requirements” in our own practices are having on the health of humans around the globe.

If we create a “demand” for a certain item (example - disposable speculums), this encourages their increased manufacture, competition around their pricing, long-distance transport, and eventually their disposal. These include hidden costs to the planet or to people, which are termed “externalities” ie costs related to the product that are not figured into their per unit price. If these costs were figured in then often the product would become so expensive as to be unviable.

The key point is that the decisions that we make in regards to products we use do matter. Each individual practice's careful consideration of choices re products/operation of their service can start to make a positive difference to the environment.

As health professionals we are uniquely placed to understand the big picture of the issues surrounding us. We are particularly skilled and practised at making decisions regarding the usage of limited resources.

## Environmentally responsible healthcare

In recent years in the UK, the National Health Service (NHS) has been tackling the issue of environmentally responsible healthcare. They have some excellent on-line resources available through their Sustainable Development Unit (SDU) website, [www.sdu.nhs.uk](http://www.sdu.nhs.uk).

Below are key points from an article “Saving Carbon, Improving Health – A Carbon Reduction Strategy for the NHS” by Dr David Pencheon, Director of the NHS SDU unit:

“The NHS Sustainable Development Unit was established because it was felt by both central government and the NHS at large, that: climate change is the predominant health threat we face today; the health service itself risks being part of the problem rather than part of the solution; and the NHS needs to make more progress on this agenda.”

“It was acknowledged that there is a massive opportunity to adopt a consistent and systematic approach, understanding that although climate change is a huge threat, sustainability is a very big opportunity.”

“We have to live to today’s agenda, but we have to do it in a way that does not risk our ability to live for tomorrow..... this is happening on our watch and it will ultimately be our legacy”.

See the full article here (PDF, 3.62 MB):

[www.sdu.nhs.uk/downloadFile.php?doc\\_url=1261066526\\_NVHg\\_sustainability\\_today.pdf](http://www.sdu.nhs.uk/downloadFile.php?doc_url=1261066526_NVHg_sustainability_today.pdf)

The SDU is working hard to meet the target under the Climate Change Act 2008 [UK] of a 26% reduction of carbon emissions by 2020.

## Greening Your Practice

### Energy

#### Improve efficiency and reduce consumption

EECA, the Energy Efficiency and Conservation Authority, is a government agency that encourages, supports, and promotes energy efficiency, energy conservation, and the use of renewable sources of energy in New Zealand. EECA provides a wide range of excellent resources. Important websites are:

- [www.eeca.govt.nz](http://www.eeca.govt.nz) – EECA’s main website
- [www.eecabusiness.govt.nz](http://www.eecabusiness.govt.nz) - EECA’s business-targeted website. Provides independent, authoritative advice to help New Zealand businesses boost productivity through energy efficiency, energy-saving technology and renewable energy
- [www.energywise.govt.nz](http://www.energywise.govt.nz) - EECA’s residential-targeted website (includes transport – vehicle purchase and fuel usage).

**Energy is a hidden cost often managed more by default than by design. Most businesses think of it as an overhead rather than a variable cost they can control (EECA)**

**Most businesses can make a minimum of a 20% cost saving with energy efficient changes to the workplace**

- EECA has specific resources for introducing the concept of energy efficiency to business settings. Both the specifics of where savings can be made and advice on how to get other team members on-board with these initiatives. These following resources are targeted at larger businesses but there are key points that are applicable to any-sized business.  
<http://www.eecabusiness.govt.nz/sites/all/files/emprove-setting-up-an-energy-management-programme.pdf>  
<http://www.eecabusiness.govt.nz/sites/all/files/emprove-implementing-an-energy-management-programme.pdf>
- While government subsidies for full energy audits of businesses are restricted to larger energy users (with an annual power bill of \$250,000 or more), in many cases it would be cost-effective for practices to have a walk-through energy use assessment carried out. These can be performed by EcoSmart electricians (see below), who specialise in providing advice and assistance to both householders and businesses on the best and simplest ways to reduce their electricity consumption.

### **Assessing your practice's efficiency—EcoSmart electricians**

The Electrical Contractors Association of NZ (ECANZ), in association with the Electricity Commission and EECA, recently introduced EcoSmart Electricians. These specialist electricians can provide advice and assistance to both householders and businesses on the best and simplest ways to reduce their electricity consumption, thereby saving money and reducing their greenhouse gas emissions at the



same time. EcoSmart Electricians are Master electricians who focus on energy efficient products, technology and installations and can identify and implement energy efficiency opportunities for lighting, appliances and machinery. For example, they can install timers on lights and hot water boilers, or a single 'kill-switch' at the front door for non-essential lighting and appliances. EcoSmart Electricians can also assist with energy management—including ensuring that, where possible, off peak power tariffs can be applied. EcoSmart Electricians are listed on the EcoSmart website, [www.ecosmartelectricians.org.nz](http://www.ecosmartelectricians.org.nz). Select "Choose an EcoSmart electrician", then select your region.

Another tool to consider is the 'Centameter'. This electronic device measures electricity-draw in real time, vividly demonstrating high-draw items. see pg 10 or [www.centameter.co.nz](http://www.centameter.co.nz)

## Electricity – choose renewable generation sources

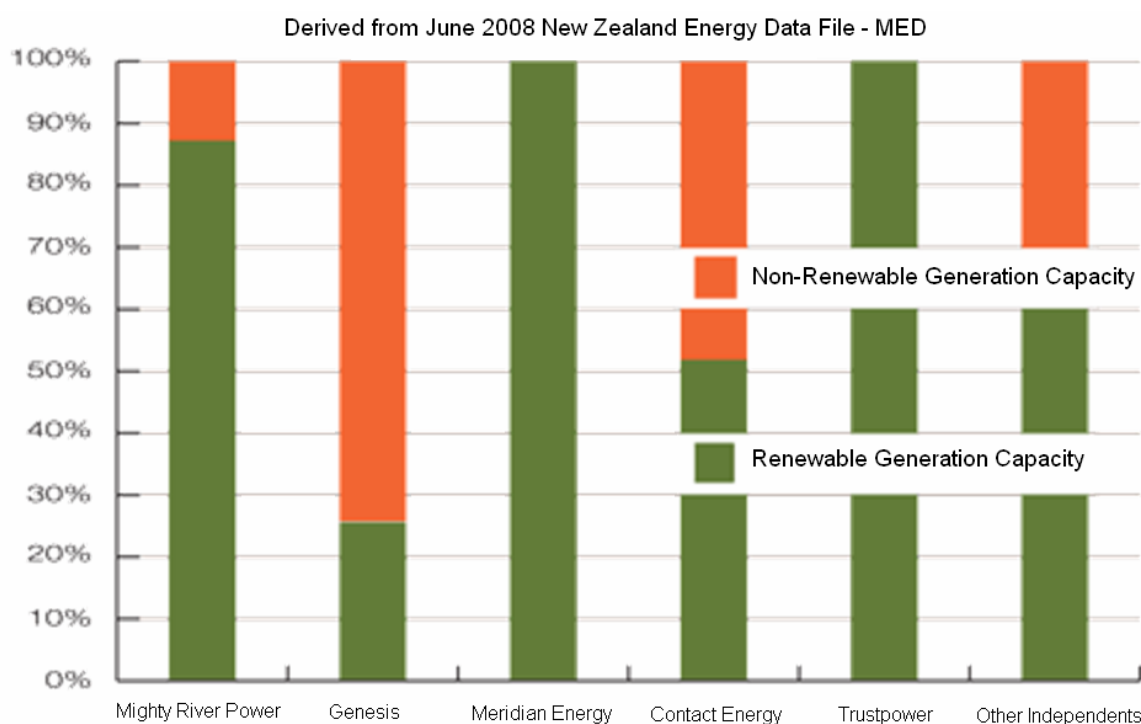
Consumers who wish to make use of power from renewable sources have two options:

- generating electricity from renewable sources. Some larger businesses are doing this, eg: NIWA Nelson, Hubbard’s Cereals Auckland
- buying energy from renewable sources (hydro/wind).

**Approximately 70% of NZ’s electricity comes from renewable sources, including hydro, geothermal and wind.**

While individual consumers cannot choose which power they take from the National Grid, they can support power companies that derive their electricity from renewable sources.

### Percentage of Renewable and Non-Renewable Power Generation Capacity by Company

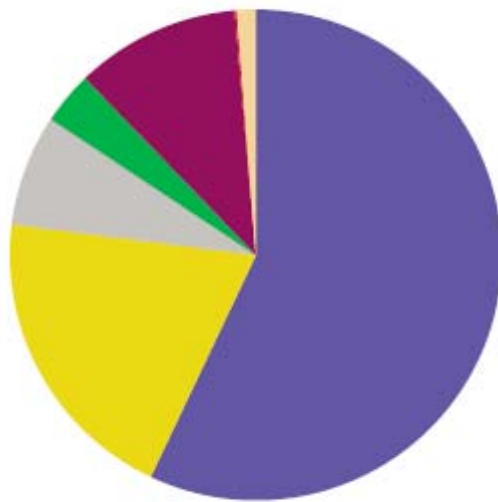


Source: <http://www.level.org.nz/energy/renewable-electricity-generation/> (BRANZ).

New Zealand has the eighth highest level of electricity generation per person in the OECD. [www.mfe.govt.nz/environmental-reporting/energy/supply/electricity-generation.html](http://www.mfe.govt.nz/environmental-reporting/energy/supply/electricity-generation.html)

All forms of electricity generation have impacts on the environment. Hydro-dams alter natural flows of water and submerge land, while the installation of wind turbines alters visual landscapes. Geothermal fluids contain heavy metals and release CO<sub>2</sub> so must be dealt with carefully. However the emission of greenhouse gases (including nitrous oxide) resulting from burning fossil fuels (coal and gas) has the greatest potential to damage global ecosystems.

Figure G.1b: Electricity Generation by Fuel Type for 2009



- Hydro 57.0%
- Gas 20.0%
- Coal 7.3%
- Wind 3.5%
- Geothermal 10.8%
- Other Thermal 0.2%
- Bioenergy 1.2%

**Total renewable 72.5%** but note these figures are for March 2009 so the percentage would be less favourable in mid-winter

NB bioenergy generally refers to energy generated from biological sources eg. gas collected from landfills, forestry waste, etc

**Source: Ministry of Economic Development —NZ Energy Data File 2010.**

While a relatively high proportion of New Zealand’s energy is from renewable sources, at times **when the electricity demand is high, increased capacity is usually only possible from thermal (gas/coal) generation.** Thus, in winter more electricity is generated from gas or coal-fired plants. Similarly, daytime electricity consumption (higher demand) is more likely to draw from fossil fuel sources in comparison to night-time (lower demand) [[www.carbonzero.co.nz](http://www.carbonzero.co.nz)].

New Zealand has comparatively high renewable generation sources but this is countered by ever increasing total energy demand. To match New Zealand’s constantly increasing demand, we are increasing power generation from renewables but we are also increasing power generation from coal and gas. **Between 1998 and 2007, the use of coal and gas in thermal electricity generators increased by 47 per cent. This increase contributed to a 68 per cent increase in greenhouse gas emissions from electricity generation over the same period.**

Meanwhile, hydro-generation’s share has fallen 11% between 1998 and 2007 (there are only limited opportunities for further hydro development). While there has been rapid growth in electricity generation from other renewable electricity sources – especially wind – the share of total electricity generation from non-hydro renewables remains too small to meet the growing demand. Thus the growing demand for electricity has largely been met by non-renewable developments, ie fossil fuels.

The Government is showing continued commitment to its target of 90% renewable electricity by 2025 [Minister of Energy and Resources, Media release, 22 July 2010].

**In summary, due to NZ's increased energy demand, the proportion of renewable electricity generation has been declining.**

**To reverse this trend, New Zealand needs to reduce its total demand and this should be readily achievable by using our energy more efficiently.**

## Lighting

### **Lighting consumes 1/3 of business energy needs**

#### ***Choose energy-efficient lightbulbs, eg. compact fluorescent = CFLs***

- While energy efficient light bulbs are more expensive to buy at the counter, traditional (incandescent) light bulbs burn far more electricity and they don't last long by comparison. Therefore, buying efficient bulbs saves you money – over \$100 over the lifetime of an average bulb. (20W CFL /100W incandescent). NB. The difference in wattage is due to the CFLs dramatically increased efficiency – it converts much more of the incoming energy into light (rather than heat) – a 20W CFL is equivalent to a 100W traditional standard incandescent bulb.

**CFLs use 80% less power and quality ones last 8-10 times longer**

Now available are softer colours eg warm-white rather than the cold hard white.

[www.rightlight.govt.nz/residential/lighting-style/which-white-is-right](http://www.rightlight.govt.nz/residential/lighting-style/which-white-is-right)

Although different bulb suppliers describe the light colour in different ways, the colour temperature marked on the pack is the best guide to the colour of light you'll receive. 'Warm white' is often used to describe 2700K or 3000K, 'cool white' equates to 4000K and daylight colours will be marked at around 6000K or higher.

There are many more options than those in the supermarket, different colours and different shapes and sizes—check out the very comprehensive website [www.rightlight.govt.nz](http://www.rightlight.govt.nz).

- Avoid halogen downlights. CFLs are superior environmentally. If you already have standard halogen lights, replace them with **energy efficient IRC halogen lights**.

**Table comparing newer more efficient options to traditional (incandescent) light bulb**

	<b>New Generation Halogen – Globes or IRC spotlights (infrared coated)</b>	<b>Compact fluorescent CFLs</b>
<b>Efficiency compared to standard / Running cost</b>	30% more efficient hence cost 30% less to run	80% more efficient hence cost 80% less to run
<b>Cost outlay vs lifespan</b>	Cost twice as much, last twice as long	Cost 5 times as much, last 6-15 times as long
<b>Wattage</b>	Use rightlight website to compare	20W = same illumination as 100w standard bulb
<b>Warm up time</b>	instantaneous	Several minutes to full illumination
<b>Usage</b>	Perfect for motion sensors, frequent switching on/off and dimmers	Better for longer hours of continuous use. Frequent switching can reduce their lifespan. Some OK with dimmers.

Compiled from data obtained from [www.rightlight.govt.nz](http://www.rightlight.govt.nz).

• **Prices and lifespans**

- a standard incandescent light bulb costs around \$1 and typically lasts for only 1,000 hours using significantly more energy.
- a quality compact fluorescent lamp (CFL) costs around \$5 and should last between 6,000 and 15,000 hours. Over the course of the CFL bulb’s lifetime it will save \$110.26 (on electricity costs).
- an efficient (IRC) halogen spotlight costs \$10, should last 5,000 hours and
- a fluorescent tube costing around \$9 should last 15,000 hours.

**Lighting usage**

- Switch off lights when not required. For infrequently used rooms consider occupancy detectors. These turn lights off if no movement is detected for around 15 minutes, turning them on again when anyone enters the space.
- Consider automatic daylight reactive dimming control that precisely controls how much light is received in the room
- External lighting – consider solar-powered low-level lights if continuous night-time lighting is required plus motion-triggered mains-supplied spotlights.

For more on CFLs, see [Appendix 1](#) (Lighting myths and facts).

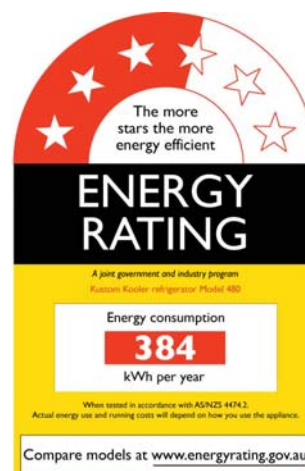
## Appliances

- **Switch-off.** Not just lights, but also heat pumps, computers, photocopiers and other appliances at end of the day. If individual staff are reluctant then build it into the daily routine for admin staff – eg. it becomes part of their morning job description to turn on all the computers in the morning so they are ready when the rest of the staff arrive. Vice versa at the day’s end.
- Another tool is the ‘Centameter’ electronic device. This wirelessly measures the electricity (and the cost) that your business is using on a continuous basis. It encourages you to reduce electricity usage by giving constant feedback on current energy draw. A ‘Centameter’ can assist compliance with energy-saving measures by identification of high-draw items in real time. See [www.centameter.co.nz](http://www.centameter.co.nz) . Additionally, a ‘switch-off’ policy means that air conditioning won’t have to work so hard to remove the heat generated from appliances that are unnecessarily left on.
- It may be easiest to have an electrician to set up a single ‘kill switch’ for all non-essential “standby” power.
- A photocopier switched off each night equates to \$100 saving per year. Only use dishwashers when there is a full load.
- Upgrade refrigerators to the smallest (fullest is more efficient) and most energy efficient possible (see below on how to choose).
- Avoid placing the fridge next to a heat source or in direct sunlight. Leave space behind them for air circulation to dissipate heat. Make sure the seals are working well and the appliance is regularly defrosted.



- Always **buy energy efficient appliances.** ‘ENERGY STAR’ is the global mark of energy efficiency. It is typically awarded to the top 25 percent most energy efficient appliances, home electronic products and office equipment in each category. Go to [www.eeca.govt.nz/standards-and-ratings/energy-star](http://www.eeca.govt.nz/standards-and-ratings/energy-star). Subsections include a list of Energy-star products (very comprehensive) and where to buy (not yet fully comprehensive – main cities only)

- Look for an ‘Energy-Rating’ logo to help compare energy-use between similar models. The more stars, the more energy efficient the appliance is in comparison with similar models.



- [www.eeca.govt.nz](http://www.eeca.govt.nz) – excellent online resource options [choose ‘Research centre’ then ‘Resource centre’] Particularly recommended are:
  - [Choosing and using your appliances](#) [keyword 8086]
  - [ENERGY STAR solar water heating FAQ](#) [keyword 8106]
  - [Action sheet 4 - Saving energy in business: equipment and appliances](#) [keyword 8543]
  - [Energy saving tips for your home](#) [keyword 8083]
- Ensure the practice heating and air conditioning is as efficient as possible. [How to choose a heat pump and use it wisely - guide](#) [keyword 5897]

## Computers

Most New Zealand businesses now rely on IT – and it is still the fastest growing area of business energy use. Computers (including servers and data centres) account for about 15% of the energy used in office buildings. But typically nearly half of the energy used by a computer is simply wasted as heat [EECA].

See: [Action sheet 4 - Saving energy in business: equipment and appliances](#) [keyword 8543]

This EECABusiness action sheet for advice on free and low-cost ways to cut the amount of energy used by workplace equipment and appliances – bringing instant cost savings for your business. **Switching off a computer and monitor at the end of each day can save up to \$120 over the course of a year. For an office of 20 computers, this equates to \$2400.**

- **2/3 of a computer’s energy goes on powering the monitor.** Screen savers don’t save energy. Turn the monitor off when going away from your desk for more than 10 minutes. Flat screen monitors are much more efficient than older ones. Laptops are more efficient than PC/monitor.
- **“Buy green”,** see <http://www.mfe.govt.nz/publications/waste/safe-use-and-disposal-computer-equipment/use-disposal-computer-equipment.html>. Consider products with the [Electronic Product Environmental Assessment Tool \(EPEAT\)](#) label (environmentally preferable). Alternatively, look for the Energy Star logo when purchasing PCs and monitors (can achieve 30-60% energy savings) – see above under ‘Appliances’ section
- Printing – when replacing printers, aim for those that are capable of double-sided printing.
- Consider **‘Power Management’ settings on the PCs.** Even without replacing current computers and printers, efficiency savings can be made. ‘Power Management’ settings allow the machine to consume less power when not in use for a period. This setting usually needs to be specifically enabled. It can be wise to ask your equipment provider or IT advisor (in case of issues with security or network settings) for their advice.

For instance, IT adviser Matt Leahy (PrimaryIT, Aug 2010) confirms there is no security issue with power management but suggests you select carefully which power management setting you use:

- **‘System standby’** and **‘System hibernate’** are not recommended as they usually cause a disconnection from medtech on reopening. Often following this, a connection to medtech cannot be re-established until the computer is shut down and rebooted ie it would have been quicker just to shut down the PC in the first place.
- Instead choose **‘Turn off monitor’** – can select your preferred time, eg. after 15 min.
- Also use **‘Turn off hard disks’** and select your preferred time, eg. 15 min. The hard disc is revolving at 7000 revs/minute and turning off the hard disc causes the whirring to slow right down (saves power) then will start up again when mouse/keyboard is touched. Fine to remain logged into medtech/profile in this mode. These settings can be made centrally at the main server so they can be easily applied practice-wide.

## Heating / Cooling

Heating, ventilation and air conditioning (HVAC) equipment generally accounts for about one third of the energy used by commercial buildings. [www.eecabusiness.govt.nz/how-to-be-energy-efficient/managing-premises/heating-and-cooling](http://www.eecabusiness.govt.nz/how-to-be-energy-efficient/managing-premises/heating-and-cooling).

Improving the efficiency of your HVAC system can offer some of the most significant and lowest cost energy savings.

The basic energy saving principles for HVAC systems are:

- Only cool or heat as much as necessary
- Only cool or heat for as long as necessary
- Don’t heat and cool the same space at the same time (this occurs in about a third of New Zealand buildings)
- Only use heating and air conditioning if the windows and doors to the outside are shut.

Low cost actions include:

- Set your heating and cooling system’s timers for business hours only
- Set the air conditioner to turn off at least one hour before the end of the working day
- Regularly maintain your air conditioning system - this can save up to 25% of the cost of once a year maintenance
- Have a building services engineer optimise the controls for your HVAC system, at least annually, including looking at the set points

- Have a wide band for set points, so that your equipment is not working too hard. Four degrees (for example 20 – 24°C) is generally found to be comfortable
- Make sure thermostats are correctly calibrated and not located in unusually hot or cold areas
- Set your air conditioning humidity control so it floats between 30% and 60% relative humidity.

Further information is available at

[www.eecabusiness.govt.nz/how-to-be-energy-efficient/managing-premises/heating-and-cooling](http://www.eecabusiness.govt.nz/how-to-be-energy-efficient/managing-premises/heating-and-cooling).

## Heating options other than electricity

Please see [Appendix 3](#) for excerpts from the Consumer NZ report on the comparison the financial cost and environmental cost of various heat sources.

### Key points

- **Sun is in.** Financially and environmentally superior is passive solar heating – designing the practice to make maximum use of its natural sunlight resources as appropriate for the season (encouraging solar heat capture in winter and shade in summer).
- **Unflued LPG gas heaters are out.** Problematic due to hazardous gas byproducts (carbon monoxide and nitrogen dioxide – linked to lung inflammation) and are heavy moisture producers (accelerates growth of mold and dustmite). They are also very inefficient hence most expensive heating to run. These are often favoured in low decile households because the financial spend can be controlled by the tank running out.  
[http://beaconpathway.co.nz/images/uploads/Unflued\\_gas\\_heater\\_fact\\_bank.pdf](http://beaconpathway.co.nz/images/uploads/Unflued_gas_heater_fact_bank.pdf)

## Insulation

**Insulate your premises.** Website – [www.eecabusiness.govt.nz/how-to-be-energy-efficient/managing-premises/insulation](http://www.eecabusiness.govt.nz/how-to-be-energy-efficient/managing-premises/insulation).

Well-insulated buildings require less energy to maintain comfortable working temperatures, as well as being healthier environments for your staff.

Low-cost measures you can take to improve insulation include:

- If there isn't any ceiling insulation, install some. The [recommended insulation levels for houses](#)( follow link on website) work for business premises as well
- Install [under-floor insulation](#)(follow link on website)
- Draught-proof external doors and windows

- Weatherproof your building by filling gaps around pipes entering the walls
- Even if your electric hot water cylinder is a standard A Grade type, cover it with a hot water cylinder wrap
- Wrap the first couple of metres of hot water pipe from the cylinder, any high-use hot water pipes and external hot water pipes with pipe 'lagging'.

Check out further information on insulation on the above website

Other resources for businesses from the [EECAbusiness website](#):

Find [energy professionals](#) who can assist your business,

and [industry associations](#) that deliver energy efficiency programmes for specific sectors.

## Office paper

### Why recycle or buy recycled paper?

- Diversion of paper waste from landfills
  - office paper is the largest component of solid waste generated by General Practices.
  - paper in landfills is a significant contributor to methane gas emissions.
- Energy savings
  - producing paper from recovered fibres consumes 60-70% less energy than from virgin pulp<sup>1</sup>
- Water conservation
  - producing paper from recovered fibres consumes 55% less water than manufacturing from virgin pulp<sup>2</sup>
- Reduction of the consumption of natural resources
  - New Zealand uses about 48,000 tonnes of office paper annually<sup>3</sup>, this equates to the consumption of approximately 1.152 million trees (based on 24 trees consumed to produce 1 tonne of virgin office paper<sup>4</sup>)
  - trees are natural carbon sinks and important for many aspects of biodiversity
- Reduction in environmentally toxic by-products from pulping trees.

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<sup>1</sup> <http://www.treecycle.com/info.html>

<sup>2</sup> As above

<sup>3</sup> Ministry for the Environment, <http://www.mfe.govt.nz/issues/sustainable-industry/govt3/topic-areas/office-consumables/paper-products.html>

<sup>4</sup> <http://www.dolphinblue.com/whybuy.html>

Increasing the demand for recycled products improves the processing infrastructure and supply chains, thus promoting economic growth in environmentally sustainable industries.

### **Glossary of Paper Certification**

<b>ECF</b>	Elemental Chlorine Free (bleached with a chlorine derivative to reduce toxic emissions)
<b>EMAS</b>	Eco-Management and Audit Scheme (European environmental standard for manufacturing plants)
<b>FSC</b>	Forest Stewardship Council (paper has received a chain of custody certification eg. FSC 100%, FSC mixed source, FSC Recycled. Considered more robust than PEFC)
<b>PCF</b>	Processed Chlorine Free (recycled paper bleaching process totally chlorine free but original used paper may not have been. Process uses ozone or oxygen bleaching which requires more energy than ECF)
<b>PEFC</b>	Programme for Endorsement of Forest Certification (paper has received a chain of custody certification eg. PEFC 100%, PEFC mixed sources, PEFC recycled)
<b>SFI</b>	Sustainable Forestry Initiative (industry-based standard, primarily USA forests)
<b>WMF</b>	Well Managed Forests (self-declaration by industry)

## **Recycled paper products**

Paper fibres can only be recycled 5–6 times before they become damaged and are no longer strong enough to form paper. This means that some virgin fibres will still be required to be processed to ensure adequate paper quality. Buying paper that is 100% recycled is recommended, but any recycled content is beneficial to the environment through the reduction in landfill and energy utilisation. Where the paper has only partial recycled content it is recommended that you prefer a brand that has sourced its virgin fibres from an independent third-party certified legal and sustainable forest (eg FSC, PEFC, or ecolabels).

Prefer products with Type 1 Ecolabels (certified to international standards ISO 14001):

- Environmental Choice New Zealand, [www.enviro-choice.org.nz](http://www.enviro-choice.org.nz)
- Good Environmental Choice (Australia), [www.geca.org.au](http://www.geca.org.au)
- Environmental Choice Canada
- Blue Angel (Germany)
- EU Flower
- Nordic Swan (Scandinavia)
- Green Mark (Taiwan)
- EcoMark (Japan)

## **A4 paper**

Brands receiving a five star rating from New Zealand's Ministry for the Environment (MFE):

- EXP Green 50% Recycled
- OfficeMax 100% Recycled
- Reflex 50% Recycled
- Xerox Recycled Supreme (100% recycled)

*See the Ministry for the Environment's "Paper Buyers Guide" for further information on office copier paper available in New Zealand.*

<http://www.mfe.govt.nz/issues/sustainable-industry/paper-products/>

## **A5 paper**

Currently recycled A5 paper is not readily sourced in New Zealand. It is possible to negotiate with your paper supplier to have recycled A4 paper locally cut to size, or sourced from overseas, however this is likely to be cost prohibitive for individual practices. If your IPA or PHO is willing to negotiate a bulk order on your behalf it is likely that suppliers will be able to reduce the cost dramatically. In the interim, it is recommended that your preferred choice of A5 virgin paper is a sustainable third party certified product (FSC, or one of the ecolabels) and that you work towards reducing the use of paper as much as possible.

## **Envelopes**

Croxley, a New Zealand made brand, offers a 60% recyclable content, window/non-window envelope option.

If you currently purchase postage-included envelopes, ask your supplier to include a recycled option.

Where possible, reuse envelopes (eg. address re-labels, in-house mail, multi-use envelopes).

## **Hygiene Paper**

Don't forget about other types of paper consumed in your workplace. Choose unbleached, recycled brands where possible for the following item:

- Tissues
- Toilet rolls
- Hand Towels (consider composting after use)

SCA Hygiene Australasia's products have MFE four-five star ratings on most products [www.sca.com](http://www.sca.com) if you wish to order these through your standard supplier. Some practices may choose to source these items at low cost from their local supermarkets.

## **What about the increased cost of recycled products?**

Example in real terms: A practice that consumes 2 reams of A4 paper per month (1000 pieces of paper!) at \$5.40 per ream expends \$129.60 per annum. Substituting this with 100% recycled paper at \$7 per ream increases annual expenditure by only \$38.40 – not a great price to pay for doing the right thing for the environment!

*Importantly*, the financial savings from a reduction in the total amount of office paper consumed will help to cover the increased costs of purchasing 100% recycled paper.

## Suppliers in New Zealand

There are many office suppliers within the New Zealand market. Remember the bargaining power that can be achieved through buyer coalitions. Ask your local IPA to help negotiate the cheapest price possible in your local area for its members. If you think you have a good deal on your recycled office supplies - spread the news! Increased demand will always lower prices.

Two suppliers with recycled products that feature in the MFE Paper Buyers Guide are:

- OfficeMax, [www.officemax.co.nz](http://www.officemax.co.nz), EcoMax range
- Corporate Express, [www.cenz.co.nz](http://www.cenz.co.nz), EarthSaver range.

(NB. this toolkit does not promote any individual supplier over any other. The above suppliers may not be the best for your practice but can be used as pricing and availability benchmarks. Larger, more established suppliers will often have lower prices due to their economies of scale, but it is important to take the time to shop around and negotiate the best price – or get your IPA to do so!)

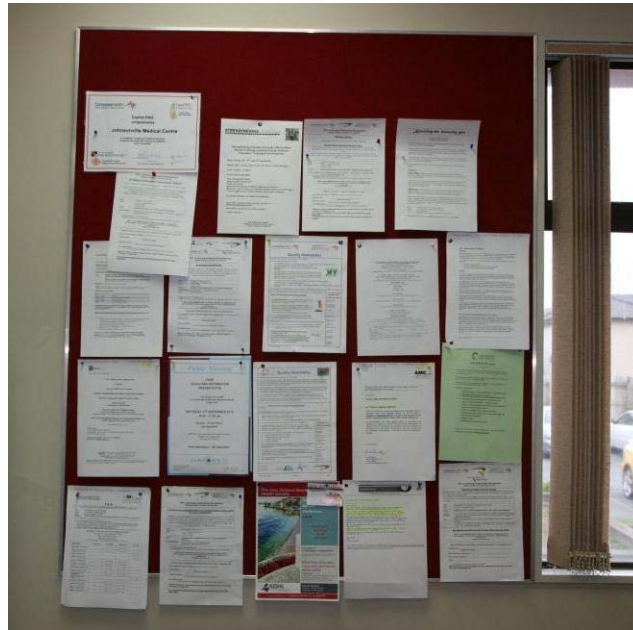
## Tips for reducing/reusing/recycling paper in your practice

- Use **Recycling Trays** in your office
  - Place within easy reach (eg. under your desk).
  - Have one for confidential papers that will be shredded, and one for all other paper. (eg \$1.15 - ‘Paper Pig’ recycling tray from OfficeMax)
- **Discontinue unnecessary incoming mail** and recycle any that is received.
  - Ask pharmaceutical companies to discontinue/minimise paper advertising.
  - Receive results electronically. Avoid paper duplication of results.
- When possible consider double-sided printing and photocopying. Only print out what you need and make sure your printing is efficient (ie. use appropriate paper size, alter font and margins to minimise number of sheets used).
- If you continue to use paper appointment slips, consider using the appointment book of your practice management system instead. Notes can be entered electronically for the reception staff if required (eg. consult type, fee etc)
- Use electronic reminders instead of Post-it notes
  - All practice management systems have easy-to-use **task manager programmes** that can record job lists for patients and be assigned to various staff members. Using these tools will save you time!
- Where available, use **email referral systems** and EDI transfers
  - Consider requesting that the private specialists you commonly refer to accept email

referrals. Either cut and paste from your MedTech (or other PMS) referral into the body of an email, or save as a .pdf file and send as an attachment.

– Transferring patient notes, Immigration Medical forms and some Insurance Medical forms are now offering an ‘electronic submission’ option.

- Receive newsletters/bulletins electronically or receive a single paper copy, display centrally and alert all staff electronically to its arrival.



- Prefer paper packaging that has recycled content, is reusable or is recyclable (envelopes, boxes).
- Re-use single sided paper (without patient-identifiable information) for drafts/notepaper prior to recycling.
- Confidential waste: whether this is shredded on- or off-site, ensure it is recycled (see below)

## Operational changes

### Re-use where possible

- For frequently-accessed contacts eg local pharmacy, do not use a fresh envelope everytime. Use multi-use envelopes or a document wallet than can be hand delivered between you.
- Provide reusable shopping bags for any shopping done by the staff.

- Consider whether there is a need for single use disposable items (eg. plastic speculums) and return to sterilising/cleaning reusable equipment wherever possible.

## Supply-chain Sustainability

- Source supplies from local suppliers where possible (reduce transport), minimise packaging where appropriate and request green (low hazard, low production wastage, low carbon footprint) or recycled materials where available.
- Streamline orders to reduce frequency of deliveries.
- Horizontal efficiencies ie. pool with other local practices to gain efficiencies especially in transport.
- Recycle printer toner cartridges. Many recycling companies provide this service and can provide a padded bag (small volume) or microwave-sized box (medium volume). Recently, due to increasing petrol and courier charges, some companies have introduced a small charge to cover the transport of each box. However, many companies still provide a **free service** under manufacturer-subsidised schemes. For example the Toner Recycling Centre (NZ-owned and operated) provide free recycling for cartridges of the following brands: Canon, Ricoh, Konica Minolta, Brother, Sharp. Other manufacturers run their own recycling schemes eg. Hewlett Packard and probably others. Ask your printer supplier or manufacturer what recycling options exist for your own practice's printer cartridges. Investigate local cartridge recycling providers on <http://www.mfe.govt.nz/publications/waste/safe-use-and-disposal-computer-equipment/use-disposal-computer-equipment.html>
- Some electronics stores offer a free cartridge and toner recycling drop-off box instore eg Dick Smith, Harvey Norman, Office Max and selected Paper Plus stores
- Choose printer cartridges that are recycled/remanufactured. When trying new products, insist on a guarantee to allow right of return if there are any problems.
- Look for other stationery supplies that are recyclable. Many office-supply companies have an 'eco' range.
- Encourage local cold chain suppliers who deliver in **polystyrene chilly bins** to run an exchange system, or find a local polystyrene recycling service (see recycling below).

## Waste Minimisation

- Pharmaceuticals have a large carbon footprint. Minimise medication wastage by prescribing only the required course, and if initiating a new medication make the first script for only 1-2 weeks (or use samples) to assess tolerance prior to a 3 month supply. See further under the [pharmaceutical section](#) below.
- Talk to staff about minimising waste of single use items such as swabs, dressings, betadine, drapes, "blueys" etc. In regards to gauze squares - do they need to be individually sterilised?
- Fit aerators to taps and fix any leaking taps or toilets.
- Ensure toilets are dual flushing or cistern regulated (user determines length of flush).
- Review laundry processes. Ensure frequency of laundry deliveries are minimised yet still practical.
- Check what products are used for laundry and cleaning of the practice. Request usage of "Environmental-Choice" products where possible – these are listed in full on the website. Environmental Choice New Zealand was initiated by and is endorsed by the New Zealand Government. Environmental Choice recognises the genuine moves made by manufacturers to reduce the environmental impacts of their products and provides a credible and independent guide for consumers who want to purchase products that are better for the environment. [www.enviro-choice.org.nz](http://www.enviro-choice.org.nz)
- Reduce unnecessary placement of non-contaminated waste in medical waste disposal bins (medical waste disposal is energy-intensive) - see waste section below.



## Composting

Composting food waste does result in some release of CO<sub>2</sub>, but this is far preferable to it decomposing in anaerobic conditions (landfills) which creates methane. Methane has a global warming potential 21 times greater than carbon dioxide. See [Appendix 4—why compost?](#)

There are many websites with information about how to get started with composting.

Beginners' guides online include:

- the Government's sustainability website –[www.sustainability.govt.nz/rubbish](http://www.sustainability.govt.nz/rubbish) and
- <http://bestgardening.com/bgc/howto/compost01.htm> (a New Zealand site).

A number of local authorities have resources about composting. One of the best is Christchurch City Council's sustainable living site – [www.ccc.govt.nz/homeliving/sustainableliving/sustainabilitychristchurch/athome.aspx](http://www.ccc.govt.nz/homeliving/sustainableliving/sustainabilitychristchurch/athome.aspx).

This site has well set-out guides to composting, including worm-farms and 'bokashi' techniques that are suitable for apartments and dwellings without suitable places for traditional compost heaps.

**For a medical practice the easiest composting options are:**

- Traditional compost – a lidded bucket in the kitchen collects food waste and at the end of each day, it is added to a compost kept in the practice garden. Alternatively, it can be taken home by an enthusiastic staff member to add to their domestic compost.
- Fermentation composting eg ‘Bokashi’. This method is ideal for an office setting as it is compact and odour-free. Food waste is collected daily and then once a day added to the sealed bokashi bin. The food is lightly compacted down and a thin layer of powder is added (resembles sawdust and contains microorganisms that enhance fermentation). Day-by-day, layers are added until the unit is full at which stage it is left to ferment undisturbed for 14 days and can then be used in the garden.



**Bench top pedal bin to collect daily food waste and main Bokashi bin (bottom left)**

**Cleaning of clinical areas**

Lin Lohead is an Independent Infection Control Consultant from Australia, involved in writing the Australian Standard (AS 4187) – ‘Code of practice for cleaning, disinfecting and sterilising in health-care facilities’. She has presented many seminars and lectures around

Australia and has published a booklet 'Cleaning, Disinfection, Sterilisation – A guide for Office-Based Practice, 2001'.

Her general feeling is that we **use too many chemicals in primary care**. For the cleaning of surfaces eg examination benches, it is usually adequate to use warm water and a good detergent eg Clinidet (gets rid of all proteinaceous substances). Occasionally, further disinfection is required with a chemical disinfectant eg Viraclean. A disinfecting agent needs to be in direct contact with the micro-organism for 10–15 min so must be left to dry otherwise there is no real point in disinfecting.

**Summary** – detergent clean whenever required then disinfect properly several times a day depending on the frequency of use of that area eg mid-morning, lunchtime, end of the day – during breaks in patient flow when the chemical disinfectant can be left to dry.

### **Hazardous or Specialty waste**

- Do not dispose of leftover chemicals and waste products down the sink, drain or sewer. Contact your local council for advice on correct disposal for your area.
- Provide for the proper disposal of all materials (such as fluorescent light tubes, mercury compounds, electronic wastes etc.) which contain toxic wastes – see below under Waste and Recycling section or;

See these particularly valuable resource sheets under Publications/Resource Efficiency/Waste at [www.mfe.govt.nz](http://www.mfe.govt.nz)

- [Recycling old computers](#)
- [Recycling your old mobile phones](#)
- [Recycling your old batteries](#)
- [Recycling old household lamps](#)

## **Promote Green and Healthy Lifestyles to Staff and Patients**

- Encourage walking, cycling and public transport use
- Encourage pedometer use
- Consider car-pooling where appropriate
- Offer discounts to patients arriving on foot, bike, or public transport
- Install bike racks so staff and patients can store their bikes safely

- Educate patients about dangers of unflued gas heaters (see above)
- Promote healthy eating habits – focusing on locally sourced foods and organic fruit and vegetables
- Plant shrubs and greenery (absorb carbon) where appropriate around the practice site
- Assist eligible patients to gain subsidised home insulation. Some regions have specialised insulation schemes and curtain banks

## **Assisted Home Insulation and Home Heating for patients**

EECA funds various schemes throughout New Zealand that can be used to install:

- Ceiling and underfloor insulation, up to a required standard (please note, if you can access the space, you have to get both ceiling and underfloor insulation done to qualify for funding).
- A clean, efficient heating device in the primary living space, if it does not already have a heating device that meets current standards (please note - you are only eligible for funding towards a heater if you have proper insulation first - your service provider will be able to tell you if you qualify).
- The following energy efficiency measures where necessary: a hot water cylinder wrap, pipe lagging, draught-stopping, and a ground moisture barrier.

Note that even if ceilings or underfloor areas are already insulated, they can be **topped up** to bring them to the standard (eg: 120mm-thick ceiling insulation)



- The Government’s home energy efficiency subsidy is administered under the **‘Warm Up New Zealand: Heat Smart’ programme**.
- Assistance is available for improving the insulation of houses built before the year 2000 (following this date, compulsory insulation standards were introduced).
- The amount of assistance depends on the income level of the owners or tenants (if rented). If a CSCard holder, a 60% subsidy of insulation costs will be paid and without CSCard up to 33% (maximums apply). This figure is higher (up to 85% subsidisation) in some areas where extra funding is available from local government or from charities. See [Appendix 2 – Regional insulation initiatives including Curtain Banks](#)

- People wanting to participate in the scheme get in contact with approved service-providers directly. The providers do the paperwork. Note that it is okay to contact more than one provider so as to get a competitive quote. Remember that landlords can also receive funding – especially if their tenants are community service card holders. NB. Housing NZ is undertaking its own “Energy Efficiency Retro-fit” programme.

Link to the ‘Warm Up New Zealand: Heat Smart’ programme [www.energywise.govt.nz/funding-available/do-you-qualify-for-funding](http://www.energywise.govt.nz/funding-available/do-you-qualify-for-funding)

- **Household heating** – once insulated, homes can qualify for a subsidy towards installing a clean, efficient heating device in the primary living space eg heatpump or pellet burner.
- **Hot water heating** – homes can also qualify for a \$500–1000 grant towards **heatpump** or **solar** hot water heating systems – see [www.energywise.govt.nz/funding-available/solar-and-heat-pump-water-heating-funding](http://www.energywise.govt.nz/funding-available/solar-and-heat-pump-water-heating-funding).

## Other Ideas

- When choosing **Kiwisaver** schemes, encourage employees to consider providers whose investment statements specify responsible environmental criteria. These may be referred to as ‘responsible investment’ or ‘ethical investment’, but it is wise to ask for specifics. For suggestions, start with <http://www.csri.org.nz/SRIprimer9Aug07.doc> and follow its links. NB some of the companies listed in 2007 as “not currently available but planning to introduce in the future” are now offering responsible investment options. Contact the investment companies directly to ask specifics about their environmental criteria.
- **Renovation**
  - Building designers can apply energy-efficient strategies early in the design process by combining **passive solar design** techniques, such as daylighting, solar **thermal mass** and shading, and conventional energy-saving measures, such as insulation, **double-glazing** and high-efficiency lights plus new green technologies such as solar/heatpump water heating.
  - **Retrofitting** of double-glazing, insulation, shade, solar tubes and some of the above technologies is also possible and advisable.
  - When **redecorating** consider reflectance - the amount of light that bounces back off a surface (eg. wall or ceiling). A lighter coloured surface requires up to 70% less energy for the same illumination as a darker room. Lighter-coloured rooms also provide better daylight distribution.

## Lead by example

### Make environmentally responsible changes to your personal lifestyle

#### *Purchasing choices*

- Be mindful of your purchasing choices. Buy well-made and durable products that last. Ask if the product contains repairable parts should a malfunction occur.

- Particularly in regards to electronic devices, demand products that can be serially upgraded thus avoiding the pitfalls of new-variantism and planned obsolescence\*, both of which contribute to unnecessary consumption then rapid disposal.  
(\* see [en.wikipedia.org/wiki/Planned\\_obsolescence](http://en.wikipedia.org/wiki/Planned_obsolescence) )
- Buy less - [www.sustainability.govt.nz/shopping/what-can-i-do-about-clothing-waste](http://www.sustainability.govt.nz/shopping/what-can-i-do-about-clothing-waste)
- For further tips, see [www.carbonaddict.org](http://www.carbonaddict.org), an excellent interactive website.

### **Travel**

- Travel less by road and plane. For meetings, use teleconferences where possible for example using Skype or other services. The co-benefit is a major time saving.
- **Air:** Each journey by air carries a significant carbon footprint. A single passenger taking a return flight from Christchurch to Sydney results in carbon emissions similar to running a portable fan-heater (2kW) non-stop for 8 weeks. \* Air travel results in emissions being injected directly into the upper atmosphere. As well as carbon dioxide and other greenhouse gases, aircraft produce trails of soot and aerosols that result in clouding, acidification and damage to the ozone layer. [[Aviation and the Global Atmosphere](#), Special report of the IPCC commissioned by the International Civil Aviation Organization, 1999].
  - \* Calculated using figures provided by the Ministry for the Environment for voluntary corporate reporting of greenhouse gas emissions (<http://www.mfe.govt.nz/publications/climate/guidance-greenhouse-gas-reporting-apr08/html/page3.html>). Return flight from Christchurch to Sydney: 2,125 km x 2 x 0.132 kg CO<sub>2</sub> -e/km = 561 kg CO<sub>2</sub>-e. Running a 2kW fan heater: 1342 hrs x 2 kWh x 0.209 kg CO<sub>2</sub> -e/kWh = 561 kg CO<sub>2</sub>-e.
- **Road:** Keep your current vehicle running as efficiently as possible – see [www.energywise.govt.nz/how-to-be-energy-efficient/travelling-and-vehicles/driving-efficiently-and-saving-on-your-fuel-bill](http://www.energywise.govt.nz/how-to-be-energy-efficient/travelling-and-vehicles/driving-efficiently-and-saving-on-your-fuel-bill).  
If purchasing a vehicle, access this comprehensive and user-friendly site [www.rightcar.govt.nz](http://www.rightcar.govt.nz).

## **Waste and Recycling**

- New Zealanders send about **3.5 million tonnes of ‘rubbish’ to landfill** every year
- Much of it is not ‘rubbish’ but resources that can be put to good use. **About 2/3 of it we could recycle or compost.**
- Of the total volume of materials going to landfill it is estimated that:
  - 20% of it is paper and cardboard
  - 10% plastic
  - 7% metals (with a portion of this aluminium and tin cans)
  - 3% glass.

- Although, since 1995, our landfills are being managed better [State of the Environment 2007 report from Ministry for Environment], we still need to do better. We're running out of space for landfills and they cost a lot of money to manage and to look after once they are closed. Many district councils in New Zealand have adopted a **goal of zero waste**.
- Recycling and processing recovered materials into new resources makes good sense. It conserves energy, reduces pollution, saves money, creates jobs and helps contribute to healthy, vibrant communities. Per given volume of waste, about 6 jobs exist in recycling vs 1 in landfilling.
- NZ now recycles 70% of our aluminium, half our paper, 45% of our glass, 30% of our steel, and 18% of our plastics. So we're making progress ... but we still have a long way to go.

## Accessing recycling

- Some local authorities may provide a free business recycling. Look up regional local authority recycling ( domestic and business) at [www.sustainability.govt.nz](http://www.sustainability.govt.nz) type in 'Regional links' or [www.sustainability.govt.nz/content/regional-links-region-map](http://www.sustainability.govt.nz/content/regional-links-region-map)
- or engage a commercial recycling provider who will usually pick-up your recycling at the same time as your general waste. They usually provide the collection bins. The change often provides a cost-saving or is at least cost-neutral because the volume of 'general waste' reduces dramatically.

For instance, try:

[www.yellow.co.nz](http://www.yellow.co.nz) – choose: What – 'recycling' and Where – 'your region'

[www.ronz.org.nz](http://www.ronz.org.nz) – Recycling Operators of New Zealand

RONZ is the national body that represents businesses working in the recovered materials and recycling industries. **RONZ** offers a national recycling directory although is not fully comprehensive but is a starting point.

Select: 'Name of material' ( eg 'plastic') then 'City/town '(better left blank) and then choose applicable 'region' (gives the widest catch for your area).

<http://www.nzs.com> choose 'business' > 'services' > 'recycling' > 'region'

## More on recycling providers

- Recycling tends to give a **cost advantage** especially since from 1 July 2009, when under the Waste Minimisation Act 2008, an additional fee was added on to all waste going to landfill

- **Availability - tends to follow the local council**, if the local council collects domestic recycling in your area then one or more companies will also probably provide service. (they require the council's domestic volume to meet minimum volume requirements for the pickup to be worthwhile)
- For the same reason, in terms of plastic recycling numbers (in the little arrowed triangle on the bottom of plastic packaging), business recycling follows the local council in terms of numbers of plastic they collect. For example – Chch and Akld recycle 1 through 7. Wgtn still only 1 and 2.

Which plastic numbers the council chooses to recycle is largely a financial decision each council makes. (The council has to pay a small additional cost to a company like Transpacific to allow domestic pickup of a 3 bin system or bin/crate combination and some councils do not consider this a priority for rates-funding.) **Put pressure on your council to include a wider range of materials in the recycling collection.**

- Various companies claim good coverage eg between Invercargill and Kaitaia covering all cities and medium sized towns eg Taupo, Invercargill. There is a sense of **collaboration among providers** who will often refer to each other to help find a recycling solution even for remote areas.

- Most have small minimum pickup requirements:

Eg Transpacific Allbrite – for most locations, the minimum requirement is a once monthly wheelibin pickup. Regular pickup is scheduled for a particular day so everyone is clear but this can be altered if necessary or an extra pickup can be arranged if required in high-density areas.

- Many companies offer a free audit and consultation if you meet the above minimum requirements ie a no-obligation, no-cost audit of your current waste management practices.
- Generally they work on a 3-bin scenario
  - 1 bin general waste
  - 1 bin cardboard/paper
  - 1 bin co-mingled plastics/steel(cans)/aluminium/glass.

The companies provide the bins (cages for bigger businesses) and can provide small cardboard receptacles for each office to collect recyclable paper in.

- The company collects and gather these locally then distribute these to the local market and also ship overseas. They ship these from major ports eg Lyttleton, Wgtn, Tauranga, Auckland.
- Apart from the general waste, 100% is recycled. The recycling market is still viable – it dropped a bit in 2009 (due to recession) but is up again in 2010.
- Polystyrene - main cities mainly - may accept it as part of co-mingle
- Some providers also provide 24-hour recycling depots for free-of-charge drop-offs eg Transpacific in Gisborne, Hutt City, Napier, and Porirua.

## Where does it go?

A portion of New Zealand's recycling is shipped overseas for processing ([www.sustainability.govt.nz](http://www.sustainability.govt.nz) and [www.wastemanagement.co.nz](http://www.wastemanagement.co.nz)), although steel cans, glass, and some plastics and paper are recycled in New Zealand. Where your recyclables go for recycling can depend on where in New Zealand they are collected and sorted.

### ***Paper and cardboard***

Some paper and cardboard is recycled locally in New Zealand, ie. goes to Carter Holt Harvey's pulp and paper plant and used again as cardboard (for cardboard, it can be reused up to 9 times before fibres get too small to hold strength). Yet much of it is exported eg:

- Cardboard goes to Vietnam and Indonesia and is recycled into corrugated cardboard.
- Office paper goes to Korea and is recycled into tissue products.
- Other papers such as newspaper and glossy paper are sent to Thailand and the Philippines and recycled into newsprint.

### ***Plastic***

Plastic is processed in New Zealand, Australia, Asia and China. It is recycled into soft drink bottles, pillow and sleeping bag filling, recycling bins, packaging, and speed bumps. Plastics are also re-used in synthetic clothing manufacture.

### ***Glass***

Glass is recycled into new glass bottles and jars and can also be used as a sand substitute in road construction. Glass is recycled in New Zealand at the O-I New Zealand recycling plant where it is first sorted into its seven colours (clear, amber, blue, and four shades of green). It's important that the glass is sorted into colours before it is recycled so that the colour of the recycled product is pure.

### ***Cans***

Most steel cans are recycled locally (by the NZ division of Sims Metals) – it is 'fragmentised' in Auckland and ChCh then melted back into steel bars and used for reinforcing bars for construction. Aluminium cans are sent to Australia or Japan for recycling.

## Sale or gifting of unwanted equipment

Options for selling/gifting of obsolete equipment:

**Sell it** on:

[www.trademe.co.nz](http://www.trademe.co.nz) or

[www.te.co.nz](http://www.te.co.nz) trade and exchange

**Gift it** on a free website as below. (NB. it is usually the recipient of the goods who is responsible for arranging pickup):

[www.nothrow.co.nz](http://www.nothrow.co.nz) = 'The Waste Exchange'

The Waste Exchange is a unique free service that helps businesses connect their unwanted materials and recyclables with new owners through a free online service. Could be used to offload unwanted items. Product Area: 'Electronics and equipment' is most applicable to general practice. Run by local councils specifically for businesses to keep reusable items out of the landfills.

[www.donatenz.co.nz](http://www.donatenz.co.nz) with a bent towards charitable organisations – businesses offer items and also organisations submit any items on their wishlist they may hope for. Probably suitable for more valuable equipment.

Also, try these general-public gifting websites:

[www.freecycle.org](http://www.freecycle.org) Freecycle is a global movement aimed at reducing waste by recycling unwanted items amongst members for free. Unlikely that a business would be on the receiving end of any of the items on offer but could certainly be good way to get rid of unwanted furniture/equipment etc as would likely be some takers. NB – suggest that you change your settings so as to avoid getting an email everytime anyone else in your local group offers anything.

[www.reusable.co.nz](http://www.reusable.co.nz)

**OR** simply leave outside with a “free to be taken” sign attached – works well with old furniture

**OR** take it to a second-hand shop (this requires you to transport it or arrange pickup. With pickup they can be fussy!)

## Medical Waste

Some basic legislated requirements apply according to Standards New Zealand, 'Management of Healthcare Waste – NZS 4304:2002'.

### Sharps

– require a puncture-resistant container displaying a biohazard symbol.

NB reusable sharps containers are available to reduce plastic wastage – see photo.



**Left - Single-use sharps container. Right - reusable (sterilised and reused) sharps container**

## Biohazard waste

– The definition of biohazard waste is contentious. Some practices treat all contaminated waste (any matter originating from patient care areas that has been in contact with any body fluids such as blood, saliva, vomitus, urine, faeces etc) as biohazard. But the reality is that much domestic refuse also contains such contaminated matter but maybe not in the same concentration.

The NZ Standard uses different terminologies – ‘Sharps’, ‘Cytotoxic’ and ‘Radioactive’ are intuitively understood. ‘Infectious waste’ is defined as “substances known to contain, or reasonably expected to contain, pathogens”. The term ‘Controlled’ waste is discussed without any clear definition. It is stated that ‘Controlled’ waste should “not contain any expressible liquid”.

It is also a requirement to **check with your local authority** about any region-specific bylaws they may have in regards to medical waste.

In general, it is best at this stage for **practices to take the information available to them and make decisions regarding their waste as they feel appropriate given their local area** and resources available to them. For instance in Wellington, wide discussion with the RNZCGP, Infection Control at CCDHB, and the New Zealand Standards document has yielded the following understanding:

The general understanding is that the New Zealand Standards document, ‘Management of Healthcare Waste NZS 4304:2002’, says that the only classified infectious waste is fluid-filled ie. waste that contains fluid that can be expressed under pressure. Infectious waste needs a controlled waste system (yellow bins etc).

Thus, in the Wellington area, infectious waste is considered to include (but is not limited to):

- Discarded laboratory specimens, cultures and materials that have been in contact with them;
- Sharps other than those categorised as radioactive or cytotoxic;
- Receptacles containing body fluids;
- Waste containing expressible body fluids;
- Waste from isolation rooms
- Waste from patients known to be suffering from infectious diseases and or transmissible wound infections eg MRSA

Hence, all other waste can be disposed of in the general waste disposal system (white plastic-bagged) as long as it goes to a sanitary landfill. This includes:

- Discarded dressings – yellow bin if body fluid can be wrung out. Standard exudate would not meet this hence general disposal
- Saline moistened cleaning swabs – once used on patients, these are not generally able to be wrung out with body fluid
- Swabs used in small surgery – same as above
- Compostable cardboard trays – standard disposal as not able to be wrung out
- Single use items – also not able to be wrung out, use discretion – if heavily soiled then maybe yellow bin, otherwise standard disposal
- Throat sticks, pooey nappies etc - standard

- Gloves – standard disposal

Again, these **guidelines are based on the information in front of the local stakeholders, commonsense and their usual practice.**

### **Why does it matter?**

Contaminated **medical waste undergoes more energy intensive disposal procedures** ie higher resource use (water/gas/electricity) is associated with its disposal.

NZ contaminated waste is steam-sterilised in combined loads with sharps and pharmaceutical waste then taken to dedicated ‘Sanitary’ (fully lined) landfills. In the past, medical waste used to be incinerated (with dioxin by-products from the PVC plastics) but now is auto-claved under pressure. This is achieved by tumbling the waste around under pressure (400 kPa) using water/steam heated to 145 degrees within a rotating steriliser (‘Mediclave’). The plastic sharps-containers melt under these conditions (hence the value of reusable ones) but the sharps are unaltered in appearance. The same equipment is used for destroying quarantined products isolated from customs.



**One of the mediclaves at Interwaste’s Seaview plant**

## **Flourescent Light-bulb Disposal (traditional long tubes and new compact CFLs)**

From: **Selecting and disposing of household lamps: minimising the environmental impact.** Updated November 2008 INFO 191 [www.mfe.govt.nz/publications/waste/disposal-household-lamps-mar07/index.html](http://www.mfe.govt.nz/publications/waste/disposal-household-lamps-mar07/index.html)

Long fluorescent tubes should be collected in a box (eg Interwaste have a 50 or 100 piece disposal box) of 'FT50' for \$56.50 or if you have very small numbers, ask your practice's electrician if they can dispose of these safely.

For spent CFLs, work is still being done with local authorities re correct disposal. Contact your local council to see what is available in your area. Some hardware stores will accept these (Mitre 10/Placemakers) as part of a lighting product-stewardship initiative. Otherwise disposal boxes can be purchased eg 12 pax or 250 pax.

Interwaste and presumably other companies have a 0% to landfill commitment with all fluorescent lamp bulbs (phosphorus – fertiliser, glass – insulation, mercury – sent to Australia for extraction and reused)

## Batteries

From; **The safe use and disposal of batteries.** July 2006 Ref. INFO 161

[www.mfe.govt.nz/publications/waste/use-disposal-batteries-jul06/index.html](http://www.mfe.govt.nz/publications/waste/use-disposal-batteries-jul06/index.html)

- **Hazardous batteries** used in General Practice include batteries for mobile phones, hearing aids, pacemakers, cameras, watches, personal stereos and laptop computers.
- If batteries containing heavy metals are disposed of incorrectly, the metals can leach out and pollute the soil and groundwater, endangering humans and wildlife. This includes; Cadmium (carcinogen, liver and lung disease), Mercury (neuro system, kidneys and liver), Sulphuric acid (burns, skin irritation). Consumers can help protect themselves and the environment by correctly disposing of all types of batteries. Both non-rechargeable and rechargeable batteries can be recycled and, wherever possible, all should be disposed of safely (see above website).
- Usual domestic batteries are dry cell non-rechargeable batteries ie. come in 'AA', 'AAA', 'C', 'D'. These contain zinc, which is not categorised as a hazardous chemical so can be disposed of in general waste. However, some battery manufacturers will accept them back (see above website). Or try [www.hazmobile.govt.nz](http://www.hazmobile.govt.nz) – run by some local authorities (mainly northern so far but spreading south), generally for domestic waste (but who would know!)
- It is preferable to use rechargeable batteries and a battery charger rather than non-rechargeable batteries. **The energy needed to manufacture a battery is on average 50 times greater than the energy it provides** [www.wasteonline.org.uk/resources/InformationSheets/Batteries.pdf](http://www.wasteonline.org.uk/resources/InformationSheets/Batteries.pdf). Additionally, they will also save you money in the long run.  
*NB. rechargeable batteries are unsuitable for smoke alarms as they may slowly self-discharge, preventing the alarm from warning when the battery power is low.*
- If you have to use single-use batteries, choose brands with the longest life and, whenever possible, purchase low-mercury or zero-mercury batteries.

## Electronic waste and e-recycling

Electronic waste (e-waste) is a fast-growing problem in New Zealand. Every year about 80,000 tonnes of e-waste is disposed of in New Zealand. Many of these products contain toxic substances such as lead and mercury. Internationally much IT Hardware waste ends up in developing countries (80% of USA's e-waste) causing health problems amongst those who strip it for copper and other valuable components without appropriate safety precautions. Some countries (eg EU, New Zealand) have signed the Basel Convention Ban Amendment in 1995 to prevent harmful products being exported to developing countries

- **There are over a million unused electronic items in New Zealand homes**  
[www.sustainability.govt.nz/rubbish/e-waste](http://www.sustainability.govt.nz/rubbish/e-waste)
- There are about 3.3 million mobile phones in New Zealand and 25% (825,000) are no longer being used. Nearly 250,000 unused computers are stored in homes.

See: The safe disposal of mobile phones Updated October 2008, Ref: INFO 162  
[www.mfe.govt.nz/publications/waste/disposal-mobile-phones-aug06/index.html](http://www.mfe.govt.nz/publications/waste/disposal-mobile-phones-aug06/index.html)

### ***What can you do?***

- Take-back schemes exist for many PCs and electronic devices. These include products made by the following manufacturers: Dell, HP, IBM, Lenovo, Toshiba.  
[www.mfe.govt.nz/publications/waste/safe-use-and-disposal-computer-equipment/use-disposal-computer-equipment.html](http://www.mfe.govt.nz/publications/waste/safe-use-and-disposal-computer-equipment/use-disposal-computer-equipment.html) Other manufacturers may also be initiating such schemes – ask!
- Consider refurbishing/upgrading the equipment if possible – extra memory, new hard-drive etc. CompuMentor, a non-profit based company in California, found that it is 20 times more efficient to refurbish an older computer for re-use than to recycle it. See the above website for a list of NZ computer refurbishing companies.
- Try to re-use any unwanted equipment that is in good working order, either by donating to charities or community groups, or selling/gifting online as in the [Sale or gifting of unwanted equipment](#) section above.
  - Make sure the equipment is in good working order and reusable. Donation-receiving organisations have limited resources to repair hardware.
  - Make the decision to sell or donate equipment sooner rather than later. Leaving equipment in storage depletes its useful value.
  - Safe wiping of data is now very achievable but many people are unaware of the reliability of the process. Remove all data from disk drives. Use appropriate security wipe software. Ask your IT provider to provide this service or [The Government Communications Security Bureau](#) recommends [www.blanco.com](http://www.blanco.com).
- If you use an IT support company, encourage them to set up an e-waste recycling scheme for the businesses they serve. Wellington example – a local medical-IT company started offering equipment disposal recently. A pick-up runs every couple of months. A small

charge is made for each piece of equipment to be picked up and wiped securely (if it has a hard drive), some parts are kept that might be useful for reusing in the future, some might be donated and the rest are taken to the local e-recycler (Trash Palace)

- You can send other products off for recycling. There are a number of schemes in place for recycling e-waste, [contact your local council](#) for information about schemes in your area or see [www.mfe.govt.nz/publications/waste/safe-use-and-disposal-computer-equipment/use-disposal-computer-equipment.html](http://www.mfe.govt.nz/publications/waste/safe-use-and-disposal-computer-equipment/use-disposal-computer-equipment.html)
- In recent years, an annual ‘National eDay’ for electronics recycling has occurred. This has been highly successful in terms of amount of equipment surrendered. The organisers are currently awaiting confirmation of funding for a 2010 eDay but it seems that some regions are aiming for a date of 6<sup>th</sup> November 2010. These tend to be widely publicised prior or contact your local council to check progress.
- See the info sheet - The safe use and disposal of computer equipment. February 2009 Ref. INFO 365 [www.mfe.govt.nz/publications/waste/safe-use-and-disposal-computer-equipment/index.html](http://www.mfe.govt.nz/publications/waste/safe-use-and-disposal-computer-equipment/index.html)

## Pharmaceutical wastage

A [carbon footprint study of NHS England](#) (2008) showed that procurement of pharmaceuticals and medical supplies causes more carbon emissions than either total building energy use or travel (included patients, visitors and staff).

59% of the NHS-England’s total carbon footprint is associated with the products and services it procures. This figure combines the carbon emissions used in extraction, processing, assembly, packaging, transport, storage and handling of products and materials that are consumed by service providers. Just over 1/3 of this figure relates to **pharmaceuticals – equates to 1/5<sup>th</sup> of the carbon expenditure of the NHS.**

In primary care, this proportion is probably larger than 1/5<sup>th</sup> and a **significant proportion of medications go to waste.**

In a recent survey of 452 individuals across New Zealand, 56% reported that they collected all of their prescribed medications from a pharmacy, even if they did not intend to take them. Just over 25% said they collect all of their medication prescription repeats, even if the medications are no longer needed. Over 60% of respondents indicated that there were leftover, or unwanted prescription medications present in their house, at the time of completing the questionnaire. (Braund R et al. “Disposal practices for unused medications in New Zealand”. *Environ Int* 2009).

Approximately 50% of patients will discontinue using their medications within a few months for reasons which include: forgetting to follow the dosing instructions, adverse effects, inefficacy or condition resolving.[BPAC article “Waste Not, Want Not; Medication wastage”, 23/09/2010 <http://www.bpac.org.nz/magazine/2009/september/upfront.asp>]

This is concerning in regards to:

- the financial and environmental cost of pharmaceutical manufacture and transport
- the financial and environmental cost of pharmaceutical disposal
- the health impacts for the patient of poor compliance
- the risk of accidental overdose of unused medication sitting in patients’ homes

Medications returned to pharmacies can not be re-used as the pharmacist can not guarantee the storage conditions (esp temperature) of the returned medication.

## Medication wastage in NZ

### Quantification is difficult

Data isn’t easily collectable but local initiatives are run to gauge the extent of the problem. Patients are actively encouraged (via direct contact and advertising) to return unused medication to community pharmacies. Prior to these initiatives, medication wastage has traditionally been an invisible problem as much of it goes down the drain or to landfill.

eg DUMP campaigns (Disposal of Unwanted Medicines through Pharmacies) run in several areas around NZ.

eg. Nov 2009 Nelson Bays Primary Health PHO DUMP campaign – see the report at <http://static.bewell.org.nz/gems/DUMPREportMay2010.pdf>

eg Waikato DUMP project and Mid Central’s SEDUM project (see below and see [Appendix 7](#))



**Returned medications over a 6 week period in a suburban pharmacy – likely just the tip of the iceberg**

**SEDUM** (Safe and Efficient Disposal of Unused Medicines) project in the MidCentral Region. This project has been running for 4-5 years, with increasing volumes returned for destruction (eg increased 14.5% in the last year).

More than two tonnes of unused medicines were returned to pharmacies in the MidCentral region during 2009–2010. This equates to 2385kg of dumped medicines in a single year.

Since 2005, nearly 250,000 packaged items have been returned from over 53,000 people in the region, including:

- 651,549 individual tablets of paracetamol
- 68,535 individual tablets of simvastatin
- omeprazole is another highly returned medicine
- 6 of the top 13 most frequently returned medicines were preventative cardiovascular medications, a trend that has remained consistent since the start of the project.

<http://www.pharmacy-today.co.nz/article?objId=d0e3376b-6d11-42eb-9e57-e44a65af0bad>

### **Co-benefits of reducing pharmaceutical wastage**

1. Alternative spend for the health dollar. Funding spent on the unused medications could be re-directed to areas of need in the health system (eg more joint replacements, CABGs, psych services, community nurses).
2. Improved health – improved compliance leading to better-managed health conditions.
3. Reduced secondary care costs.
4. Reduced chance of over-doses.
5. Safer environment. Unused medication is often not disposed of correctly – it can enter the human food chain after leaking from landfills into waterways or being washed directly down the sink. (*BPAC Magazine* Sept 2009)

### **Problem areas**

- **Elderly patients.** A DUMP campaign by North Yorkshire and York PCT (Primary Care Trust) found that 41 per cent of returned medicines had been dispensed to patients aged 74 and over; many were unopened. [www.allbusiness.com/pharmaceuticals-biotechnology/pharmaceutical/14838807-1.html?sms\\_ss=email](http://www.allbusiness.com/pharmaceuticals-biotechnology/pharmaceutical/14838807-1.html?sms_ss=email)
- In particular, very frail elderly - those about to enter care facilities/resthomes - where medications are usually administered from medipacks. The pharmacist at the care-facility cannot reuse the existing medications as they can not guarantee the storage conditions of the medications that the patient brought in from home. For some of these patients, an element of memory loss may have played a role in the over-accumulation of medicines prior to entering the facility.



**Medication returns from a single patient on admission to care facility. Nb: including 20 dispensing packs of gabapentin.**

- **Inhalers**

In the 2009 Nelson Bays Primary Health PHO DUMP campaign, asthma inhalers comprised around 18% of the value of all returned medicines. A total of 1857 asthma inhalers was worth \$15,537. This suggested problem with compliance matches the high hospitalisation rate in the same DHB due to complications of uncontrolled asthma.

Of the inhalers returned, most were expensive Combination inhalers (Spec Authority required) – presumably with these new inhalers, education had not been sufficient so people are falling back on their relievers again. Larger studies have been conducted in Taranaki and Hutt Valley where it was found that inhalers accounted for 20% of the total cost of returned medications, a large proportion of which (69%) were preventer inhalers.  
<http://www.bpac.org.nz/magazine/2009/september/upfront.asp>

- **Medications with a reputation for side-effects** eg statins, salazopyrin
- **New Medications** – an important problem period is during the initiation of a new medication. Some medications stand out, especially medications with a combination of the following features:
  - relatively expensive
  - reputation for side-effects eg anihypertensives, pain modulators, epilepsy medicines.

Wastage is further compounded if the drug requires a frequent dosing regime eg sulfasalazine (salazopyrin) – another common leader in the most-returned stakes.

## Prescriber actions – guard against over-prescribing

### Repeat medications

#### “Ask what’s in store before giving more”

- Check patient compliance – ask open questions, consider non-compliance eg; what tablets are you taking at the moment? How many days a week do you forget them? Are there any side effects? Are you happy to keep taking all your current medications?
- Question the patient that orders “everything”. What stock do they have at home already?
- For “when required” medication specify a quantity not a time period
- For older patients with multiple medications, prescribe monthly by using Close Control
- For expensive items consider prescribing smaller amounts with repeats on Close Control
- For medications renowned for side-effects, prescribe smaller quantities with repeats eg cardiovascular medications – statins, antihypertensives, salazopyrin.
- Encourage all staff in the practice (doctors, nurses, receptionists) who handle prescription requests to be aware of the above. We all have a role to play in reducing medication wastage.
- Review medications regularly. This also applies to **medications started in secondary care**. A recent British study showed that around 1/5 of primary care medications are initiated in hospital (as inpatient or outpatient).  
[www.nao.org.uk/publications/0607/prescribing\\_costs\\_in\\_primary\\_c.aspx](http://www.nao.org.uk/publications/0607/prescribing_costs_in_primary_c.aspx)  
Moreover, GPs were particularly reluctant to change or discontinue a specialist-initiated medication, even years down the track. The patient’s circumstances may have changed or new information may have come to hand. GPs should review **all** prescriptions at regular intervals to see if they are still required or should be changed.
- Encourage your local pharmacists to follow Waste-Reduction key messages such as those from the Pharmac Advisory Group – see [Appendix 6](#) – Key messages for .

### New medications

- When starting new medications, use samples if possible. This is a good use of resources because samples distributed by pharmaceutical companies often only have a short time to run before expiry.
- Limit the initial time period of a new regular medication eg statin, antihypertensive. Most side-effects will be evident within 2 weeks of initiating so splitting the 3 month script into a 2/52 dispensing then a 10/52 dispensing is ideal. Use close control with one repeat and use a keyword to clarify your instruction to the pharmacist. You will need to programme the keyword into your practice management software eg Medtech, Profile or other system. Once entered, it can be used by the entire practice whenever anyone is initiating a patient on a new medication.

### Instructions for keyword

Here is a suggestion for the creation of the keyword. Use 'nm' or 'new' as an abbreviation for the following sentence:

“New Medication - Please dispense 2/52 supply and then a 10/52 supply if tolerated”.

Once this is set up, the keyword can be used in the ‘Directions’ box after the dosing instructions (see visual below). For example, in Medtech, to enter a keyword the requirement is to enter a full stop then the keyword eg ‘nm’ then enter. The full sentence will automatically populate.

With other practice management systems – Profile etc – there may be similar functions that can be employed.

The other method is to generate two prescriptions, one for 2/52 supply and one for 3/12 supply. This is more time intensive for the doctor and does mean two script fees for the patient but is still preferable from a wastage perspective.

**Note: use ‘Period’: 3 mths, with Close Control and 1 repeat. Leave ‘Dosage’, ‘Freq’ and ‘Mitte’ boxes blank.**

### ***Back-pocket scripts***

This suggestion applies for a back-pocket prescription eg for antibiotics, prednisone etc. Often the patient is getting other (regular) medicines on prescription at the same time. If your practice software allows, make use of the medtech option to print the backpocket script separately (in Medtech, this is 'Print ticked medication' icon - the icon to the right of the 'Print all medications' icon). Then hand-amend (and initial) the date to what is suitable eg 2 days in the future. This is to discourage patients getting it 'just in-case'. This should reduce people taking unnecessary antibiotics (especially useful in cases when you suspect the patient is probably intending to take it immediately even after explanations that it is not yet indicated). It should also reduce medication wastage as people, for convenience, will often immediately pick up this backpocket script while they are at the chemist getting their regular medications.

### **Maximise opportunities for education**

- Educate **patients** - sometimes the over-accrual of medications is patient-led and education may assist a change in behaviour. The principal aim is to reduce the amount of medicines wasted by encouraging the target audience to think for themselves.
- **Nursing staff** have a large role to play eg. opportunistically during other contact with the patient, through practice-based structured programmes such as Careplus and also through home-visiting nursing services eg. SIA
- **Pharmacists**. Most pharmacists undertake varying degrees of opportunistic patient education. However, some more formal services exist and have the added advantage of feedback to the GP. Examples are MURs (below) and Comprehensive Medicines Management programmes.

### **Medication Use Reviews (MURs)**

- An MUR allows for a structured and systematic review by an accredited pharmacist to improve patient use, understanding, and adherence to their medications
- MUR is all about adherence and compliance. It is not strongly targeted at clinical management apart from any obvious interactions.
- Where it is working well, it is doing so due to a good working relationship between local GPs and pharmacists.
- Key requirements of the MUR are:
  - patient has multiple medications
  - patient lives independently (not in rest home)
  - a full report is given back to the doctor.

- The Pharmaceutical Society of New Zealand (PSNZ) offers an accreditation scheme to confirm competency.
- MURs were initiated nation-wide within the last decade. More recently, MUR funding was moved from central government and became the responsibility of individual DHBs. Unfortunately in some DHBs this had led to the termination of new pharmacists being allowed to join the scheme. In other areas, restrictions on numbers have been placed. (Elizabeth Johnstone from PSNZ)

### Action

- encourage your local pharmacies to get involved with MUR schemes
- encourage your local DHB to continue/expand MUR funding

### Other pharmacist-led medication reviews

Many PHOs offer primary-care level medication reviews such as **Comprehensive Medicines Management programmes**. These are usually carried out in the community (patient's home). The aim of the service is to optimise the medical management of service users with chronic disease or complex medication regimes. Suggestions are made about interactions, dosing and possibilities for simplifying regimes. The foci are evidenced-based research, best-practice prescribing, collaborative care, patient education and the provision of appropriate support and encouragement. This helps patients understand and manage the complex demands of chronic illness. (Capital PHO Annual Report)

### Action

- remember to refer to these services

# Modifying behaviour – making it happen!

At a recent workshop hosted by the Hutt Valley DHB,<sup>1</sup> a presentation was given by Mike Poole, an independent Environmental Management Consultant engaged by the NHS<sup>2</sup> to drive carbon-reduction. Groundbreaking work was done with a selection of clinical departments in Cornwall. Departments that engaged with the project included; a Renal Unit, a Community Hospital, a Primary Care Trust and a Pathology Lab. The Pathology Laboratory and the Renal Unit in particular made great savings in dollars and carbon and noticed spin-off benefits (improved patient and staff morale).

The feedback from the Primary Care arm of the Cornwall project (2008) showed that, despite being very keen, the primary care workers felt overwhelmed with other work and, left to their own devices, had been unable to achieve much forward progress in any organised fashion.

The consultant's report stated<sup>3</sup> –

“this confirms all our previous experience in industry and the NHS: it has been found repeatedly that people will only maintain momentum on this kind of initiative if (a) they have to give a presentation on progress to their peers, or a Board or verifier, (b) they know someone (external) is booked to come in on Tuesday afternoon and hopes to see progress, or (c) it is a legal requirement.”

**However all this changes if there is regular encouragement and direction provided by a ‘champion’ – a person who provides a strong motivating influence within the practice.**

1. ‘One Planet Health Care’, Hutt Valley District Health Board workshop, 4 December 2009.
2. Mike Poole is the Managing Director of Eco-nomic Ltd, UK – Consultants in Business Environmental issues.
3. ‘Health Care and Climate Change: Report on pilot phases 1 and 2’, Michael Poole, paper prepared for NHS Cornwall for the Compass for Climate Change Project, December 2008, [http://www.greenerhealthcare.org/webfm\\_send/25](http://www.greenerhealthcare.org/webfm_send/25)

## Championing change in your practice

### *Tips for creating enthusiasm and buy-in from your colleagues*

A toolkit is all very well but what it really needs to fly is constant championing of the cause – someone (or a small team) who is persistently enthusiastic about encouraging the changes and ensuring that momentum is maintained.

Ways to champion change include:

- providing regular updates to staff on intranet/email about progress the practice is making
- consider using a ‘Centameter’ to measure electricity-draw in real time, see pg 10

- being the ‘go-to’ person for problem-solving issues that could otherwise stall progress. (eg. The recycled paper is getting stuck in one type of printer or Can meat go in the compost?)
- giving regular verbal positive-feedback, especially to reluctant staff members
- rubbish audits are a useful tool for keeping momentum up. Going through the biohazard waste is not a delightful thought, but keep an eye out for inappropriate waste in the biohazard bin (eg loads of paper hand towels). Similarly, spotting plastics and fruit in the kitchen bin can give a clue as to when a friendly reminder is necessary.
- incentives (eg chocolate fish) can be left on those computers switched off at night (positive reinforcement)
- if your practice has a website or a newsletter, include updates on the recycling efforts of the practice to motivate staff and patients

For further great ideas see <http://www.eecabusiness.govt.nz/sites/all/files/emprove-implementing-an-energy-management-programme.pdf>, especially pages 3–4.

### ***Aesthetics matter***

Often aesthetics are cited as reasons not to proceed with changes eg – “We don’t want the staffroom looking like a recycling depot” and “The paper recycling tray ruins the minimalist look of my room”. Be mindful to this, take time to consider what recycling-related containers will be a best-fit aesthetically. Shop around. Things “looking right” can make a surprisingly large difference to ‘buy-in’ from staff.

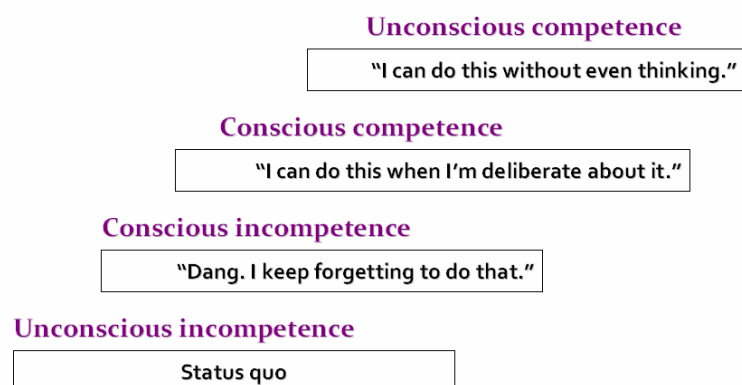
### ***Involve your practice manager and other key staff***

A large proportion of the ideas in this toolkit can be actioned by your practice manager. Get her/him to upload the toolkit to their desktop and work through the suggestions in a stepwise fashion. Other key staff such as the Chief Nurse and other partners in the practice will value being involved. At times, there might be initial resistance. Give staff a bit of time to mull it over and quietly persist. Take action on the roads of least resistance first. The many co-benefits of these changes (especially financial ones) often end up to be the clinchers in the negotiation process.

### ***Changing your habits takes practice***

We can all be trained to adopt new skills into our routine, at first intermittently but with time these will become “automatic”.

Remember the ‘Conscious Competency’ model:



# Procurement of supplies

## ‘Full life-cycle’ considerations of medical supplies

Recycling is one step but the holy-grail is to purchase/consume less products and less packaging to begin with.

We reduce the demand on the earth’s resources by;

- buying quality products that will last a lifetime and are repairable when they malfunction. Although the initial outlay may be higher, the longlife of the product saves money in the longrun.
- Being mindful of waste reduction in every step of medical processes

Some manufacturers and retailers are starting to look at their part in this cycle. As practices and as individuals, we can support companies that show genuine engagement with this issue.

## Product Stewardship

The purpose of product stewardship as set out in the Waste Minimisation Act (section 8) is to encourage (and in certain circumstances require) people and organisations involved in the life of a product to share responsibility for:

- ensuring effective reduction, reuse, recycling or recovery of products
- managing environmental harm arising from the product when it become waste

Product stewardship schemes are initiatives that help reduce the environmental impact of manufactured products. When a product stewardship scheme is introduced anyone involved in the product life cycle such as producers, brand owners, importers, retailers and consumers accepts responsibility for its environmental effects.

**With product stewardship**, some or all of the **environmental costs** from a product are **included in the price** (internalised).

**Without product stewardship**, the **costs of the environmental impact** from a product are usually **borne by society** – ratepayers, taxpayers and the environment – rather than the consumer or producer.

See <http://www.mfe.govt.nz/issues/sustainable-industry/initiatives/product-stewardship/index.html>

## Packaging Product Stewardship Scheme



The Packaging Product Stewardship Scheme is a voluntary industry initiative, managed by the Packaging Council of New Zealand, to reduce the environmental impact of packaging in New Zealand.

The scheme was released in July 2010 and demonstrates industry's continued willingness to act voluntarily, at best cost, in the interests of New Zealand. The scheme builds on the successes of the New Zealand [Packaging Accord](#) 2004 - 2009 and takes account of the product stewardship requirements set out in the [Waste Minimisation Act 2008](#).

Scheme members are required to report annually on their performance against the scheme's policies, procedures and key performance indicators, which includes adopting the Packaging Council's [Code of Practice](#) for Packaging Design, Education and Procurement.

The specific objectives of the Packaging Product Stewardship Scheme are:

- Improved packaging design to reduce packaging waste.
- Improved systems to reduce packaging waste.
- Increased reuse of packaging.
- Increased recycled content in packaging to replace virgin material.
- Increased consumer awareness and understanding of sustainable packaging.

A reporting year for scheme members ends on 30 September, and reports will be collated by the Council. Targets will then be prepared and submitted to the Ministry for the Environment for accreditation.

## Avoiding 'Greenwash'

In reference to the Fair Trading Act, the Commerce Commission has produced a document that considers Recyclability and Green claims being made by brandowners and businesses. <http://www.comcom.govt.nz/environmental-claims>

This discusses the widespread use of generalised unsubstantiated environmental claims and how the claim must be simple, clearly verifiable and likely to be interpreted correctly by the range of potential consumers.

Keep an open mind to companies' green claims and ask questions until you are satisfied they are genuine.

## Procurement of medical supplies

59% of the NHS-England's total carbon footprint is associated with the extraction, processing, assembly, packaging, transport, storage and handling of products and materials that are consumed by service providers. ([Carbon footprint study of NHS England](#) 2008)

## Procuring supplies in a sustainable way

The NHS Carbon Reduction Strategy recognises the challenges in the area of procurement, especially that the NHS does not have direct control over all the actions of its supply chains. Similarly, this would be true for individual general practices but first steps are for us to show purchasing preference for suppliers using environmentally friendly processes and/or local or New Zealand manufacturers. Future steps might be joining with other practices/PHOs/DHBs to provide would-be suppliers with preferred criteria for awarding procurement contracts.

Start by consciousness raising: ask your suppliers where their products are manufactured and under what conditions. Ask what the waste discharge procedures are in the factory of origin in terms of environmental discharges into waterways/air.

As previously mentioned, Pharmac does not currently have any environmental criteria in its key operating guidelines. In regards to DHBs, according to the NZ Public Health and Disability Act 2000, there are 11 statutory objectives of a DHB; one of these is:

“To exhibit a sense of environmental responsibility by having regard to the environmental implications of its operations”

Despite there being no enforcer of these requirements, DHBs are starting to engage – for example Marlborough/Nelson DHB has prepared a green policy. Likewise, we should request our local PHOs to incorporate environmental policies into their core values. The RNZCGP is currently undergoing a review of its Environmental policies. It would be good to see the Ministry of Health guiding initiatives in the same ilk. All of these ‘from the top’ approaches work more successfully when met with ample clinician enthusiasm and awareness ‘from the bottom’.

As an example of how procurement can be improved, the NHS Purchasing and Supply Agency (PASA), the Department of Health and the NHS Sustainable Development Unit (SDU) have developed guidance for the health system in considering and addressing carbon emissions through procurement – [www.sdu.nhs.uk](http://www.sdu.nhs.uk) > ‘Downloadable Resources’ > P4CR Procuring for Carbon Reduction, or [www.sdu.nhs.uk/page.php?page\\_id=159](http://www.sdu.nhs.uk/page.php?page_id=159).

In short, the plan is to drop their procurement emissions by 80% by 2020 via the following:

- reducing carbon demand ie. isolating needs while eliminating unnecessary process rituals, and reducing wastage arising from poor supplies management
- reduce ‘in use’ (operational) emissions
- substitution and innovation – once a need is identified then it may be possible to meet that need in a different way
- supply-chain emissions reduction ie client influence delivers a powerful incentive to improve.

See [Appendix 5](#) for further details.

Ask Pharmac to use environmental impacts as one of their guiding procurement criteria. This is not one of the current criteria but there is a ‘Consultation’ coming up in early 2011 regarding Pharmac’s Operating Guidelines – let your opinion be known. For the current operating guidelines see <http://www.pharmac.govt.nz/patients/AboutPHARMAC/procedures>.

## Useful resources

The Sustainable Development Unit of the NHS UK has some excellent references and resources. <http://www.sdu.nhs.uk/>

The Campaign for Greener Healthcare (UK) website - This year are running a 10% carbon reduction campaign called the 10:10 Campaign with many wards/departments of the NHS signing up including a number of general practices. <http://greenerhealthcare.org/1010-decarbonising-care> and <http://greenerhealthcare.org/1010-takeaction-checklist>

The UK Climate and Health Council has various information and resources on their website relating to climate change. <http://www.climateandhealth.org/>

Australian Conservation Foundation 'The Green Clinic Guide' [www.acfonline.org.au/greenclinic](http://www.acfonline.org.au/greenclinic)

Doctors for the Environment Australia has a useful website. <http://www.dea.org.au/>

WWF has an easy-to-use online carbon footprint calculator. <http://www.footprint.wwf.org.uk/>

Envirostep is a free online tool to help your business improve its environmental performance. It's been developed specifically for small to medium-sized enterprises (SMEs) in New Zealand by the Ministry of Economic Development, in collaboration with business and environmental organisations. <http://www.eco-verification.med.govt.nz/envirostep>

The Sustainability.govt.nz website has a simple 25 step guide to improving your home and business sustainability. <http://www.sustainability.govt.nz/content/25-easy-steps-towards-sustainability>

Celsius, New Zealand guide for sustainable business. <http://www.celsius.co.nz/>

The Sustainable Business Network New Zealand. <http://sbn.org.nz/>

The New Zealand Business Council for Sustainable Development. <http://www.nzbcسد.org.nz/>

For addressing procurement issues with larger organisations eg DHB, Pharmac etc here are some great resources in terms of large volume purchasing decisions:

- 'Taking the lead: A guide to more responsible sourcing practices'  
<http://www.responsible-purchasing.org/assets/files/Taking%20the%20Lead.pdf>
- 'Buying Matters: sourcing fairly from developing countries'  
<http://www.responsible-purchasing.org/assets/files/Buying%20Matters.pdf>

### Resources and FAQs on Climate Change

<http://www2.ucar.edu/climate/faq>

<http://www.metoffice.gov.uk/climatechange/guide/quick/doubts.html>

<http://www.niwa.co.nz/>

<http://www.mfe.govt.nz/issues/climate/about/impacts.html>

<http://www.cmar.csiro.au/>

<http://www.orataiao.org.nz/>

<http://www.ipcc.ch/>

Access the address by Professor Sir Peter Gluckman (Chief Science Advisor), “Integrity in Science: Implications from and for the Climate Change Debate”, 9 June 2010 at <http://www.victoria.ac.nz/sog/about/publications/peter-gluckman-seminar.pdf>

## Journal Articles

‘Modern Global Climate Change’. Karl T, Trenberth K. **Science**. 2003; 302:1719–23.

‘Attributing physical and biological impacts to anthropogenic climate change.’ Rosenzweig C, Karoly D et al. **Nature**. May 2008; 453: 353-7

‘Managing the health effects of climate change’. Costello A et al. **Lancet**. 2009; 373:1693-733

‘Global environmental change and health: impacts, inequalities, and the health sector’ McMichael AJ, Friel S et al. **BMJ** 2008; 336:191-194

‘Climate and atmospheric history of the past 420,000 years from the Vostok ice core, Antarctica’. Petit JR, Jouzel J et al. **Nature**. 1999;399:429-36.

‘Human Domination of Earth's Ecosystems’. Vitousek PM, Mooney HA, Lubchenco J, Melillo JM. **Science**. 1997; 227(5325):494-499.

‘Public health benefits of strategies to reduce greenhouse-gas emissions: urban land transport’. Woodcock J, Edwards P et al. **Lancet**. 2009; published on line Nov 25. doi:10.1016/S0140-6736(09)61715-3.

‘Public health benefits of strategies to reduce greenhouse-gas emissions: food and agriculture.’ Friel S, Dangour AD et al. **Lancet**. 2009; 374(9706):2016-25.

‘Why New Zealand must rapidly halve its greenhouse gas emissions’. Metcalfe S, Woodward A et al. **NZ Med J**. 2009; 122(1304).

‘Effect of insulating existing houses on health inequality: cluster randomised study in the community.’ Howden-Chapman P, Matheson A et al. **BMJ**. 2007; 334:460.

‘Climate change and primary health care.’ Blashki G, McMichael T, Karoly DJ. **Aust Fam Physician** 2007;36:986-9.

## Interactive Websites

WWF has an easy to use online carbon footprint calculator. <http://www.footprint.wwf.org.uk/>

[www.carbonaddict.org](http://www.carbonaddict.org) excellent website with a humorous medical slant including a ‘CAGE’ questionnaire for diagnosing carbon addiction, discussion of early/late complications of this condition plus guidance regarding appropriate interventions.

also <http://www.thebuyinggame.org/> – an interactive example for large organisations of ethical buying habits and why it enhances good ethical and good business outcomes

# Appendices

## Appendix 1—Lighting myths and facts

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Read more about these facts at the RightLight website, [www.rightlight.govt.nz](http://www.rightlight.govt.nz).

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Fact #1: The tiny amount of mercury in a CFL is unlikely to pose health risks

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Fact #2: CFLs emit extremely small amounts of ultraviolet radiation

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Fact #3: Efficient lighting reduces the amount of mercury in the environment

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Fact #4: Efficient lighting can save you a lot of money over time

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Fact #5: There is a choice of efficient lights that look really good

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Fact #6: You can choose efficient bulbs to work on dimmers

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Fact #7: Quality energy efficient bulbs have long lives

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Fact #8: Energy efficient lights come in a wide range of colour temperatures

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Fact #9: Energy efficient light bulbs are not a fire risk

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Fact #10: Efficient bulbs can reproduce colour as well as traditional incandescent light bulbs

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Fact #11: Turning a light bulb on and off uses less energy than leaving it on

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Fact #12: Fluorescent lights should normally not cause a problem for photosensitive epileptics

## Appendix 2—Regional insulation initiatives

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### Summary of low-cost regional insulation initiatives (with thanks to Sally Blackwell of EECN)<sup>1</sup>

Please note: There are many insulation schemes advertised that take advantage of the EECA Warm Up NZ programme (subsidised insulation). You can access a list of providers through the energywise website: <http://www.energywise.govt.nz/funding-available/insulation-and-clean-heating/step-one>.

For low-income households, the following EECN initiatives offer some third-party funding (a top up on the govt subsidy which gives a better deal to households ie increase the subsidy from 60% to 85%).

The curtain banks provide a free service to those with a CSC. Some curtain banks only provide curtains for the main living room (due to limited supply of curtains) but will provide more with a GP's note if they have high health needs/respiratory conditions etc.

Initiative	Region	Eligibility	Access	Contact organisation	Contact person
Home insulation retrofit programme	Northland	Pre-2000, low-income households		Community Business & Environment Centre	Cliff Colquhoun, 09 408 1092
Home insulation retrofit programme	Waikato, King Country, Hauraki	Pre-2000, low-income households		HEET	Shelley Lynch, 0800433844
Curtain Bank	Waikato, King Country, Hauraki	Low income high health needs	Referred by social and health agencies and organisations	HEET	Shelley Lynch, 0800433844
Home heating solutions	Waikato, King Country, Hauraki	As per govt. subsidies		HEET	Shelley Lynch, 0800433844
Curtain Bank	Eastern Bay of Plenty, Rotorua, Tauranga, Napier, Hastings	Low income high health needs	Referred by social and health agencies and organisations.	Curtain Bank c/o Energy Options	Louise Maple – Eastern Bay of Plenty, Rotorua, Tauranga Deidre Morgan – Napier, Hastings, 0800151565s
Energy Check	Eastern Bay of Plenty	Eastern Bay of Plenty residents	The purpose of the Energy Check programme is to provide free individualised home energy assessments and recommendations.	Energy Options	Marcus Baker, 0800151565

Healthy Homes home insulation retrofit programme	Bay of Plenty, Taupo, Hawke's Bay, Gisborne, Marlborough	Pre-2000, low-income households – owner occupied (CSC holders), high health needs are given priority.	Self referral & by partner agencies. The Healthy Homes programme improves the warmth, health and energy efficiency of these homes by providing insulation of ceilings and underfloors, draught proofing and hot water cylinder wraps.	Energy Options	Jo Hunt, 0800151565
Clean Heat	Rotorua, Waikato (Taupo, Te Kuiti, Tokoroa), Hastings, Marlborough	Within airshed, owner occupied, existing non-compliant woodburner/open fire, fully insulated.	Self referral & referred by partner agencies	Energy Options	Jo Hunt, 0800151565
Home insulation retrofit programme	Taranaki	Pre-2000, low-income households		Betterhomes	Anaru Marshall, 0508 238 837
Home insulation retrofit programme	Wellington	Pre-2000, low-income households		Sustainability Trust	Phil Squire, 04 389 3400
Home Energy Advice Centre (HEAC)	Wellington	All		Sustainability Trust	Phil Squire, 04 389 3400
Curtain Bank	Wellington	Low income high health needs	Referred by social and health agencies and organisations.	Sustainability Trust	Phil Squire, 04 389 3400
Curtain Bank	Christchurch	Low income high health needs	Referred by social and health agencies and organisations	Community Energy Action Charitable Trust	Bede Martin, 03 374 7222
Home insulation retrofit programme	Canterbury north of Rakaia	Low income high health needs		Community Energy Action Charitable Trust	Bede Martin, 03 374 7222
Home Energy Advice Centre (HEAC)	All Canterbury, West Coast, Marlborough, Otago	All	Self referral	Community Energy Action Charitable Trust	Bede Martin, 03 374 7222
Home insulation retrofit programme	Southland	Low income high health needs		Awarua Research & Development	Sumaria Beaton, 03 212 6024

<sup>1</sup> The Energy Efficiency Community Network (EECN) is a Charitable Trust representing community-based not-for-profit organisations in New Zealand who work in the field of residential energy efficiency. EECN delivers the Home Energy Advice Centre (HEAC) network. HEACs provide householders with tailored, independent, not-for-profit service providing individually tailored expert advice on energy efficiency in their home. For free, independent, and locally relevant energy saving advice, call this toll-free number 0800 388 588 to speak to an advisor.

## Appendix 3—Heating sources other than electricity

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Source: [www.consumer.org.nz/reports/heating-options/energy-sources](http://www.consumer.org.nz/reports/heating-options/energy-sources)

### **The sun**

It's free, and the most environmentally-friendly home heating option available. You'll need large north-facing windows to allow the sun to shine in during the day, a large thermal mass such as a concrete floor to store the heat, and insulation so the heat isn't lost too quickly at night. And you'll probably still need other heat sources for the coldest days.

If you're designing a new building, incorporating some passive solar heating into the design may not cost very much at all. It may also be possible to include some solar features when you're renovating, but it's harder.

### **Natural gas**

#### ***How expensive?***

Running costs depend on how you factor in the daily connection charge.

Make sure every gas appliance you buy has a flue. Unflued gas heaters fill the house with carbon dioxide and water vapour. If a fault develops the heater may emit the poisonous gas carbon monoxide. This can build up in a room and pose a significant health risk to children, pregnant women, elderly people and those with asthma or heart disease. High levels can be fatal to anyone.

#### ***How clean?***

Natural gas is clean-burning for pollutants, but it's a fossil fuel. Burning it adds the greenhouse gas carbon dioxide to the environment.

### **Electricity**

#### ***How expensive?***

Heat pumps are one of the cheapest heating options to run. They can be retrofitted – but they must be the right capacity for the building and they must be installed properly.

Discounted night rates make nightstore heaters and underfloor heating comparatively cheap, although you will need a separate meter.

Portable heaters are the most expensive form of electrical heating.

#### ***How clean?***

Our electricity comes from a combination of renewable (wind, hydro and geothermal) and non-renewable (gas and coal) sources - so it's only a semi-clean fuel. But in your home, nothing is cleaner. Despite the inexorable rise in the price of electricity, electric heating provides a clean and easy way to heat your home.

## Appendix 4 – Why compost?

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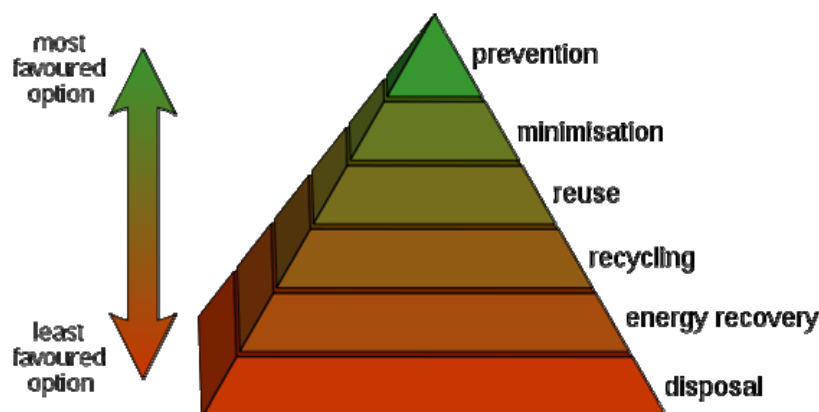
Putting vegetable matter into compost heaps significantly reduces the amount of domestic waste going to landfill. It is also a great way to recycle nutrients, as most of the carbon and other nutrients in organic matter are converted into a form that can be returned to the soil.

While composting results in the emission of some carbon dioxide, this is far preferable to the methane that would be produced if the waste decomposed in anaerobic (low-oxygen) conditions within a landfill.

Methane has a global warming potential 21 times greater than carbon dioxide, but it generally is not released by composting [*Greenhouse Gas Emissions from Composting Facilities*, 2 ed, Recycled Organics Unit, University of New South Wales, 2001].

When waste is placed in a landfill with the most highly efficient controls of gas emissions, with co-generation of electricity from methane, net emissions of greenhouse gases might be comparable to industrial-scale composting. However, composting has other benefits such as resource use efficiency, improvements in soil stability, fertility and moisture retention.

Compost also reduces the need for fertilisers, which are a high source of greenhouse gases and other pollutants. Improving landfill gas management to reduce greenhouse gas emissions is essentially an ‘end of pipe’ solution, which reduces only one of the impacts of landfilling biodegradable waste without tackling the root cause [*Waste management options and climate change*, Final report to the European Commission, 2001].



## Appendix 5 – Reducing carbon demand [< Return to document](#)

**Reduce carbon demand** ie. ‘reduce wastage from poor management’

What do we really ‘need’ in terms of supplies?

Identify unnecessary waste as a result of overstocking, poor storage and handling, lack of operational management control or poor custom and practice.

eg. Some of health’s daily ‘rituals’ can be shown to have low benefit to patient outcome while extracting a financial and carbon cost. Eg swabbing arm before taking a blood sample. These ‘low value activities’ are prime candidates for removal by raising awareness or altering clinical guidelines?

eg. Specifically reduce unnecessary components in small surgery packs.

eg. synchronise deliveries

**Reduce ‘in use’ Emissions** – *different heating systems*

Focusing on the energy performance of infrastructure, equipment or services at the procurement.level. ie energy efficiency - lighting/heating/’switch-off’, when replacing equipment, buy efficient medical equipment.

**Substitution and Innovation** - If the need is established then it may be possible to meet that need in a different way.

Substitution may deliver reduced carbon emissions by utilising materials or approaches with a lower carbon footprint while the introduction of innovation or new technologies can radically change the way a need can be met (e.g. teleconferences, virtual surgery).

**Supply chain reduction** – *get suppliers to reduce emissions in their factories. Favour greener modse of transport.*

Ultimately a large proportion of the carbon footprint of goods and services procured is related to the practice and performance of suppliers in the supply chain. Client influence can provide a powerful further incentive to improve.

Influencing carbon emissions in the supply chain relies on an informed client, should be based on a strategic approach which realises mutual benefits and can require long term commitment on both sides.

From: P4CR Procuring for Carbon Reduction, or [www.sdu.nhs.uk/page.php?page\\_id=159](http://www.sdu.nhs.uk/page.php?page_id=159).

Sustainable procurement guidelines can naturally extend to include other ethical procurement principles:

- Become conscious of the decisions we are making. Seek information on supply chain factors – origin of product, factory working conditions, factory waste procedures ( non-polluting), transport to NZ
- [www.fairmedtrade.org.uk](http://www.fairmedtrade.org.uk) outlines some areas of concern in regards to the conditions under which some medical supplies are manufactured. It then covers action steps to address this problem.

## Appendix 6 – Key messages for pharmacists

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Encourage your local pharmacists to follow similar Waste-reduction Key Messages from the Pharmacy Advisory Group (PAG).

- Encourage return of unwanted medicines for safe disposal
- Monitor Medico packs for non-compliance and notify the prescriber
- Using a targeted approach, check patient understanding and compliance when medicines are dispensed
- Educate patients and carers to take prescribed medicines with them into care settings
- Improve patient compliance and understanding and reduce waste by a MUR service
- Offer sharps disposal service
- Participate in a Safe Disposal of Medicines through Pharmacies scheme
- Offer Safe Use of Medicines leaflet.

From <http://static.bewell.org.nz/gems/DUMPRReportMay2010.pdf>, accessed 20/07/2010

## Appendix 7 – DUMP campaigns

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Waikato Community Pharmacy Group and Mid Central District Health Board have run successful, ongoing DUMP campaigns:

**Waikato Community Pharmacy Group** (Sharing the knowledge conference, 2009):

- 794kg of waste collected over 2 months
- 29% of identified waste was due to a change in patients’ medicines
- 24% of patients did not use their prescribed medicine

The Mid Central DHB **Safe and Efficient Disposal of Unused Medicines Project (SEDUM)** (Judd, 2008):

- Nearly 50,000 items returned over 1 year from 11,500 people.
- Identified 26 most frequently returned items.
- Identified expensive items returned – Flixotide inhalers were in both these lists
- Estimated cost of returned items was \$400,000.
- Six of the top 10 medicines returned were cardio-vascular medicines highlighting a non-compliance issue, which supported the MUR service proposal.

Following the “SEDUM” Project by Central Pharmacy and Mid Central DHB Clinical Advisory Pharmacists of Compass Health Limited and the four Mid Central PHOs advised 3 key messages for prescribers to reduce medicine wastage:

- Ask what’s in store before giving more (ie ask what is held at home before prescribing)
- For “when required” or short courses specify a quantity
- For new or changed regular medicines, prescribe a smaller quantity initially (Pharmac Close Control rule changes June 2008).





