Greening Your Workplace

Responding to climate change:
Sustaining health and wellbeing
PHSS, University of Otago, Wellington
February 2014
Lighting

Recycling

Computers

Accurate disposal

Supply chain

Healthier homes for patients

Paper

Pharmaceutical wastage
Key websites

• Government websites with NZ-specific information and contacts to local service providers
  – Energywise
  – EECA (Energy Efficiency and Conservation Authority)
  – EECAbusiness
  – Ministry for the Environment (MfE)
Reduce energy usage

• Most businesses think of energy as an overhead rather than a variable cost they can control (EECA)

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

• Current usage can be assessed ...
• Local energy efficiency trusts

• EcoSmart Electricians

• ‘Centameter’

- details in toolkit -
New Zealand has the 8th highest level of electricity generation per person in the OECD

Chose power company with renewable generation sources

Electricity generation from non-renewable sources is steadily increasing

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

- 1/3 of business energy use
- www.energywise.govt.nz/tools/lighting
- Toolkit – prices, lifespans and efficiency
- Comparison of CFLs vs. new generation halogen (IRC - infrared coated) – CFLs win
- also a section on CFL disposal
Find the right energy efficient light bulb

Using energy efficient light bulbs is a great way to manage your electricity bills. Use this tool to select your current bulb, find out which energy efficient light bulbs you could replace it with and how much you could save on your power bill each year.

You can also add bulbs to a shopping list, then download and take the list with you the next time you're buying bulbs.

**CURRENT BULB**
- Change bulb
- Halogen Spotlight 12V
- 50 w
- RUNNING COST PER YEAR $12.60
- LIFE SPAN IN YEARS 1
- PURCHASE PRICE $4.50 - $6

**EFFICIENT BULB**
- Change bulb
- LED
- 7 w
- RUNNING COST PER YEAR $1.80
- LIFE SPAN IN YEARS 10+
- PURCHASE PRICE $30 - $60

**STEP 3: HOW MANY DO YOU NEED?**

Use this slider to select the number of bulbs you need to replace.

1 Bulb

**SAVE $10.80 PER YEAR**

Savings based on the bulb being used three hours per day at 23.5 cents per kWh. Savings do not include purchase costs.

**STEP 4: DOWNLOAD SHOPPING LIST**

ADD ANOTHER BULB
Computers

• Switching off saves $120 / year  
  (20 computers = $2.4 k)

• 2/3 of energy is used by the monitor

• Screen savers don’t save energy

• 10-minute rule for turning off your monitor

• Consider ‘Power Management’ settings on  
  the PCs eg. ‘Turn off hard disks’
Paper

- Largest single component of solid waste generated by primary care
- Makes methane in landfills
- Virgin paper manufacture more toxic and more resource intensive cf. recycled paper
- 100% recycled recommended but any recycled content is beneficial
- Use less, and recycle - tips in toolkit
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECF</td>
<td>Elemental Chlorine Free (bleached with a chlorine ozone depletion emissions)</td>
</tr>
<tr>
<td>EMAS</td>
<td>Eco-Management and Audit Scheme (European environmental audit scheme for manufacturing plants)</td>
</tr>
<tr>
<td>FSC</td>
<td>Forest Stewardship Council (paper has received a chain of custody certification eg. FSC 100%, FSC mixed source, FSC Recycled. Consideration for original used paper may not have been.)</td>
</tr>
<tr>
<td>PCF</td>
<td>Processed Chlorine Free (recycled paper bleaching process which requires more energy than ECF)</td>
</tr>
<tr>
<td>PEFC</td>
<td>Programme for Endorsement of Forest Certification (industry-based standard)</td>
</tr>
<tr>
<td>SFI</td>
<td>Sustainable Forestry Initiative (industry-based standard)</td>
</tr>
<tr>
<td>WMF</td>
<td>Well Managed Forests (self-declaration by industry)</td>
</tr>
</tbody>
</table>
Composting

- Traditional compost
- Bokashi

- Uses fermentation
- Compact
- Odourless
Improving patient lifestyle

• Encourage *activity* – cycling/walking

• Subsidised home *insulation* – EECA
  ‘*Warm-up New Zealand: Healthy Homes*’ programme.

• *Discourage unflued LPG heaters*

• Curtain banks

• Guard against overprescribing
Medication wastage

- Medications returned to pharmacies cannot be re-used

- **SEDUM** (Safe and Efficient Disposal of Unused Medicines) project in the MidCentral Region.

- **DUMP** campaigns (Disposal of Unwanted Medicines at Pharmacies)
SEDUM (Mid Central)

• In one year 2385kg worth $400,000

• 6 of the top 13 most frequently returned medicines were preventative cardiovascular medications

• Top 3 reasons: ‘surplus’, bereavement, medication changed
Co-benefits of reducing wastage

1. Alternative spend for the health dollar
2. Improved health – better-managed health conditions
3. Reduced secondary care costs
4. Reduced chance of overdose
5. Safer environment – incorrectly dumped medication can reach waterways and eventually human food chain
Table 2
Respondents method of disposal depending on medication formulation type.

<table>
<thead>
<tr>
<th>Response</th>
<th>Medication formulation type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Liquid</td>
</tr>
<tr>
<td>Down the toilet</td>
<td>69</td>
</tr>
<tr>
<td>Down the sink</td>
<td>180</td>
</tr>
<tr>
<td>With household rubbish</td>
<td>106</td>
</tr>
<tr>
<td>Take it to the tip</td>
<td>4</td>
</tr>
<tr>
<td>Burn</td>
<td>2</td>
</tr>
<tr>
<td>Return to pharmacy</td>
<td>79</td>
</tr>
<tr>
<td>Give away</td>
<td>1</td>
</tr>
<tr>
<td>No answer</td>
<td>11</td>
</tr>
</tbody>
</table>

Drug: Accupril 20mg Tab
Dosage: tabs
Freq: 
Period: 3 mths
Mitte: tabs
Amount: 0.00
Directions: Use 1 od mane. New Medicine - please dispense a 2/52 supply and then a 10/52 supply if tolerated
Repeats: 1
Close Control endorsement added
Provider: Dr Rebecca Randerson (RR)
Close Control
Classification: Confidential
Generic Substitution
Previous Drug:

Interactions:
Accupril increases effect of PROTAPHANE (HUMAN)
Warning "ASPIRIN [MUSK SKEL] - rash"
Warning "DOXYCYCLINE"
Involve the team

• View every patient interaction as a prospect for education re medications

• Nurses – opportunistically

• Pharmacists – can collaborate with GPs eg: Comprehensive Medicine Management programmes

• Co-benefits – save GP time; increase teamwork; improve patient health
Changes to your lifestyle

• Tips on reducing travel – eg video-conferencing
• Car purchase www.energywise.govt.nz ‘Vehicle Fuel Economy Tool’
• Calculate your carbon footprint www.footprint.wwf.org.uk
• Don’t buy bottled water
• Investment / Divestment – no fossil fuels
• Buy durable/repairable products
Lifestyle review

- Transport
- Energy use
- Diet
- Reproduction
- Consumer choices
- Waste management
- Recreation
- CPD
You're living as if we had **2.16 planets** to support us but... 

Your footprint is **2.16 planets**

<table>
<thead>
<tr>
<th>food</th>
<th>travel</th>
<th>home</th>
<th>stuff</th>
</tr>
</thead>
<tbody>
<tr>
<td>19%</td>
<td>25%</td>
<td>23%</td>
<td>33%</td>
</tr>
</tbody>
</table>

We've also calculated your **carbon footprint**, which is **8.95 tonnes per annum**.
Planned obsolescence

• policy of deliberately planning or designing a product with a limited useful life, so it will become obsolete or non-functional after a certain period

• consumer is under pressure to purchase again

• hides the real cost per use from the consumer, who might be reluctant to pay such a high price if they had been aware of its limited useful life.
The other shopping list

- Where and how was it produced?
- How far has it travelled?
- How is it packaged?
- How long will it last?
- What happens when I’ve finished with it?
- Do I really need it anyway?
Recycling

• Office waste is easy
• Extend to medical waste
• Disposal is free cf. waste to landfill
• Composting options ++
Recycling

• What is collected? – tends to mirror what is picked up by local council

• Market for recycled products is healthy – down a little in 2009 but picked up again

• Only shipped overseas if local market capacity is exceeded

• e-Waste needs careful disposal.
Reusing of unwanted equipment

**Sell** it on:
- www.trademe.co.nz or
- www.te.co.nz trade and exchange

**Gift** it on a free website
- www.nothrow.co.nz
- www.donatenz.co.nz
- www.freecycle.org
- www.reusable.co.nz
Medical waste

Don’t be an over-includer!
In the Wellington area, infectious waste is considered to include –

• 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
All other waste can be disposed of in the general waste disposal system (white plastic-bagged):

- Discarded dressings – yellow bin if body fluid can be wrung out – otherwise 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
- Gloves
Specialty Waste

- **Fluorescent** light bulbs
- **Batteries** - rechargeable where possible
- **E-waste** (computers, monitors, cellphones etc) needs thoughtful disposal
- Many companies offer ‘**take-back**’ schemes for printer cartridges, worn-out equipment. Prefer these companies.
Supply chain

• Every-day purchasing decisions matter

• Prefer suppliers using environmentally friendly processes and/or local or New Zealand manufacturers

• Ask our organisations to include environmental sustainability in core values and key operating guidelines
  eg DHB, Pharmac, PHOs, IPAs.
Procurement and contracts

• Large amount of healthcare’s emissions due to purchase of pharmaceuticals, devices + medical equipment ie. extraction, processing, assembly, packaging, transport, storage, handling

• Use less - waste less, innovate, reuse, recycle, lean procurement

• Choose well - choose manufacturers with green supply chain. Prefer local manufacturers.

• Consider full lifecycle – how efficient is it? How long will it last? Can it be repaired? Refitted? Disposal – recycled/safe disposal
Lead from top

- Policies
- Sustainable Procurement – contracts
- Support staff initiatives
- Measure pre and post to quantify savings
Lead from the front-line

• Involve all members of the department

• Call for interest – gather a team. Allow some paid time, it pays back!

• Staff will build momentum for projects that they identify as relevant

• Publicise achievements - encourages others
Support staff enthusiasm

- Paid, protected work-time is required
- Start-up funding.
- Reporting is crucial - managers assist
- Chose low-lying fruit first - ‘quick wins’
- Sequester savings then use to implement further initiatives
Make it happen

• Motivator(s) required
  – Positive reinforcement
  – Everyone is a potential resource-saver rather than a potential resource-waster
  – Go-to person for problems

• Good aesthetics assist staff ‘buy-in’

• Involve key staff – practice manager/lead nurse
Unconscious competence

“I can do this without even thinking.”

Conscious competence

“I can do this when I’m deliberate about it.”

Conscious incompetence

“Dang. I keep forgetting to do that.”

Unconscious incompetence

Status quo
Keep it happening

• Report from the primary care arm of the NHS pilot study in Cornwall showed that:

  despite being very keen,

  primary care workers felt overwhelmed with other work and

  had been unable to achieve much forward progress in any organised fashion
• This reflected all previous experience in businesses (including health), that people will only maintain momentum if……

(a) they have to give a presentation on progress to their peers/ Board

(b) they know someone (external) is booked to come in on Tuesday afternoon to check progress, or

(c) it is a legal requirement.
All this changes if regular encouragement and direction is provided by a ‘champion’

i.e. a person or persons who provide a strong motivating influence within the practice
Talk about it........

• Tell what you are doing at work and write about it – newsletters etc
• Tell what you are doing at home
• Vote
• Vote
• Vote
• and encourage others to vote too!
Figure 1: Graph of the NHS England CO₂ Emissions Baseline and Climate Change Act Targets