The Health Engineer

New Zealand Institute
of
Healthcare Engineering

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The Health Engineer

The Journal of the Institute of Healthcare Engineering

Volume 5 No 10 Winter 2014

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Institute Officers

PRESIDENT'S REPORT ~ Winter 2014

Your President decided to check out the state of the private hospital system in the last month. With the need for replacement of my left hip joint, I entered Mercy Hospital, Dunedin for the surgery and 6 days as an inpatient. It really should be a hospital engineers experience to check out the hospital from the patient's perspective. The Mercy advertises itself as providing excellence in healthcare, was it going to live up to expectations?
Mercy Hospital is Dunedin's only private surgical hospital, with a long history having been set-up & run by the Sisters of Mercy. The last active nursing sister only retiring 3yrs ago. Mercy has 5 theatres, an endoscopy suite, heart unit, ICU, DSU and 55 bed ward suite, attached is the Marinototo Clinic where many of Dunedin specialists operate their clinics from. Mercy Hospital has been in a constant state of improvement, with a new ward, day stay theatre facilities 5years ago and new CSSD & car park building 2 years ago.

There is no argument that the private hospitals are catering to an elite market where those with insurance or personal money are able to book their surgery. Facilities budgets are what the public hospital systems often dream of, but so are the expectation of the patients.

Yes, the Mercy hospital is immaculately cared for, beautiful gardens in Dunedin's green belt with towering large trees & views over the city. The buildings are presented well and cleaned carefully with pride. The rooms are either single bed or 4 bed bays, all with individual control of AV system, temperature and some even have opening windows! Individual ensuites allow for attention to dignity. Staff to patient ratio is high, from the laundry staff, cleaners, catering staff and nurses. Most importantly all staff are polite, courteous, encouraging and interested in the patient.

Despite all the well appointed buildings, Mercy is a functioning hospital not a hotel. It has well designed admission, theatres and ward areas working together for work flow, infection control and patient treatment. The surgical & nursing staff are provided with technologically advanced equipment which is regularly checked & evaluated. But for the patient it is the staff who introduce themselves, encourage and have time to talk, to advise and offer support & help while at the same time upholding and surpassing nursing standards. Frequent reviews, patient surveys and encouraged staff improvement appear to engender an intense pride in their vocation and institution.

Did I find the Mercy lived up to it's advertised "excellence in healthcare"? Yes, my care and attention to detail personally by my surgeon and the nursing staff was superb. The facilities were well presented and worked well. And I healed well.

The private hospitals have a very distinct advantage over the public sector, in that they do not have the emergencies, the unpredictability of the community to deal with. The private hospital can work to obtain excellence and high class standards because the work is scheduled & the procedures known. Individual responsibility & reputation is very important to those working in the private sector.
Is there a model that can encompass the benefits of both systems????

On the Institute's front. The executive had a successful & productive meeting at the end of March please

see the report below.
Conference planning is well under way for November at the Northshore, Auckland, plan your leave now.

Watch out for the new website, coming soon to your computer.

Best regards, Doug Moller.

EXECUTIVE MEETING 26-27 MARCH, CHRISTCHURCH.

The executive had a very successful meeting in Christchurch at Ranui House for two days at the end of March. The first days agenda included the welcoming of two of the three new executive members. - Jacqueline Le Grand & Zane Lee.

We were updated on the status of the website upgrade & rebuild by three staff from Hairy Lemon and the projected timeline for going live adjusted. A content editor was appointed and the need for content urged.

Discussion was held on professional liability changes.
Business accounts were presented by Allison and Doug presented the accountants recommendations. It was recommended and agreed to follow through with the "zero" accounting package.

The request for support of the Otago Polytechnic's Bachelor of clinical engineering was discussed and advice of content was passed to the South Island Alliance Clinical Engineering group. A letter of tentative support was to be offered.

Jacqueline offered to host the 2015 conference in Hamilton with support.

Refresher electrical training adapted for clinical engineering is still valid, and has been confirmed by the EWRB.

Following lunch and further discussion on the ANZEX exchange scheme. The group then travelled to the CDHB project design warehouse for a very informative introduction to the philosophy, design and mock ups primarily for the rebuild of the Christchurch hospitals. Photos of which are located on page 16.

Dinner together was held among the Christchurch rebuild and very worthwhile discussion occurred between all exec. members.

Next morning following breakfast at the Boatsheds we cracked into updating our strategic plan, our exec. members were reprimanded for tardiness on the various timeframes of this strategic plan.

The exec. agreed to donate $1500.00 to Wayne Morris following his presentation on remote anaesthesiology in the 3rd world.

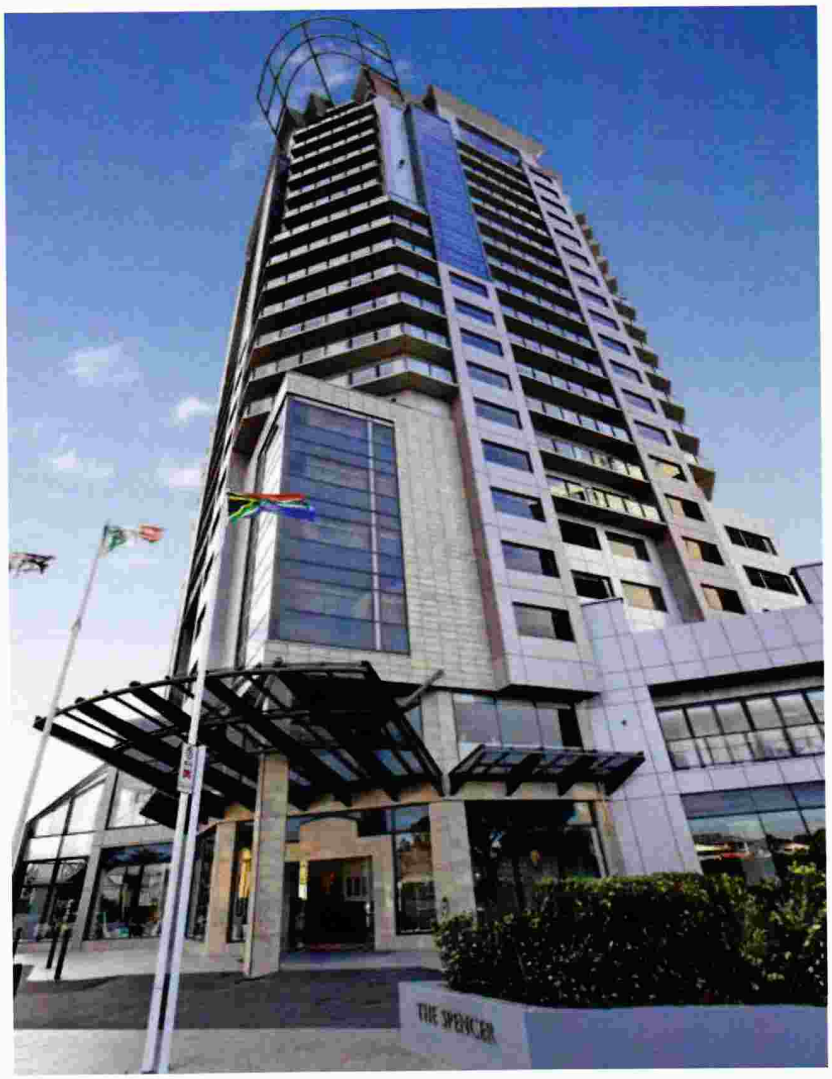
Study Grant & the BOC grant were discussed so that they may attract more members to participate.

Our meeting wrapped up & we farewelled our Christchurch hosts. Thanks again to Tony & Allison.

NZIHE
New Zealand Institute of Healthcare Engineering

69th Annual National Conference Auckland "REGIONALISATION – the way forward?" 6-7 November 2014

Biomed Training Day 5 Nov – Covidien and Fisher & Paykel



After the barn storming toe tapping hoe down of the excellent Christchurch Conference please join us for our 69th Annual Conference set amidst the restaurants, beachfront café's and bistros of Takapuna on the North Shore

Regionalisation – the way forward?

Regionalisation – be it Health Benefits Ltd, Health Alliance, Facilities or Clinical Engineering regionalisation cannot be ignored and is not going to go away. What are the advantages? Are they consistent across the sector? What is the value add and where to from here?

These are just some of the questions to be discussed.

Cost cutting and financial restraint is nothing new in the health sector which is by now well attuned to the requirements of fiscal restraint and limited budgets.

The current environment is once again challenging "non front line" clinical services such as Facilities Management and Clinical Engineering services by putting the question of a "regional approach" on the agenda.

The theme for the Auckland NZIHE Annual conference in November 2014 is :-

Regionalisation – the way forward?

And as such will reflect the growing issues around maintaining a quality, volume driven workload whilst budgets are being reduced and capped and systems are being regionalised.

Book it in your diaries now and start making your plans. Start thinking about your budget allocations for next year and get your leave sorted out!!

Planning is now well under way and the programme is looking good with papers encompassing technical, clinical and disaster recovery scenarios.

The venue – The Spencer on Byron Hotel, 9 -17 Byron Ave, Takapuna Beach, Auckland.

The Spencer on Byron Hotel, Takapuna Beach effortlessly combines spacious luxury accommodation, award winning dining, first class conference space and leisure facilities with unsurpassed panoramic views of Rangitoto Island, Auckland Harbour and the Hauraki Gulf.

Registration Form – please see enclosed

On all hotel bookings please quote Ref NZIHE to obtain preferential Room Rates.

Yours sincerely
Bill & Lyn MacDougall
Conference Convenors

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DISPOSAL OF REDUNDANT EQUIPMENT

By Jacqueline La Grand

Throughout many District Health Boards (DHBs) finding funding is getting harder and harder for new equipment, but there still seems to be a constant supply of unwanted, irreparable medical equipment. Many devices are removed from service because they have broken down, and would cost too much money to repair, however there are far more reasons why medical equipment gets removed from service.

Firstly there is technical obsolescence which means the device is no longer supported by the manufacturer. This is normally the strategy used by manufacturers when bring out new models, and they would rather you buy the newer product, rather than the old model. A manufacturer is required to support the no longer supported device with technical support for at least 7 years after manufacture, but after that 7 year deadline the manufacturer is not expected to provide parts or support the device any more. For long term planning it would be advantageous at the point where you know the device is no longer supported to plan to replace the device, or maybe even before if procurement is a long winded process in your organisation. Especially if that device is of high demand and not having the device is damaging to operational performance. Also when money is tight forecasting can be a good way to save with long term gains.

Then there is clinical obsolescence, sometimes known as functional obsolescence, which means the operation of the device is no longer required by the clinician. I.e. when a new device with a new method of operation comes along and supersedes the older device. This is driven by new technology and clinicians wanting to perform with the latest equipment. This is becoming more and more common with today's fast pacing technology changes. The way it was done yesterday, may not be how it's done tomorrow, another reason for this is younger clinicians being far more inclined to change method at a rapid pace.

So DHBs and healthcare providers are constantly hoarding medical devices that are no longer wanted. Some are broken, but some still working just no longer wanted or required. The broken can be dismantled safely and scrapped, but what can be done with the equipment that still works?? The reluctance to throw things away is probably why many DHBs facilities and clinical engineering department are full of unwanted, but still usable equipment. But with space in DHBs becoming more and more squeezed because of the requirement to make maximum use of the space, then the push to stop hoarding is becoming greater and greater. But what can be done with the hoard?

Most DHBs have disposal procedures which normally state what can be done with broken and unwanted equipment, and each DHB will treat this procedure different in certain ways. But all of them will have clear instruction on how to dispose of equipment. The details of the item should be recorded, how it was disposed of, cost if sold, note taken of any special disposal needed. This needs to be signed off by a person with the person that has the level of authority who can release the item to be disposed of. A disclaimer when selling is always good to have too, this will protect the seller, so the buyer and seller have a clear understanding of what is being brought, and the condition of sale.

Both clinical and technical obsolescence can blend into each other, and in some cases a manufacturer will no longer support a device because a new procedure has been brought into the clinical environment.

Each device will have their own procedure for the removal of hazardous items, like Batteries, SLA, Lithium, Ni Cad – etc all will need to be removed, and disposed of. Capacitors out of the defibs will need to be removed, and disposed of too. There are many more different types of hazardous materials in medical devices that need to be removed before decommissioning. You can find out more by going to www.ecri.org or the New Zealand website for medical devices www.medsafe.org.nz. There will be a local recycler in your area that will be able to remove these items for you, sometimes at a cost, sometimes with cash rewards.

Sometimes it is encouraged to hand old equipment to third world nations, although this is a commendable idea, it can sometimes lead to handing third world nations an unusable machine, as consumables are no longer available, hence getting rid of the equipment

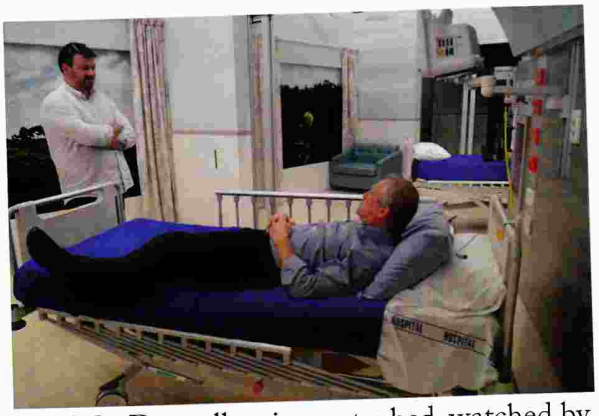
in the first place. Therefore great care is needed when gifting equipment, this is to ensure the gift will not cost too much in the long run. So ensuring the sustainability of the gift should always be the major mission when gifting equipment to third world.

There are companies in New Zealand NZ that will buy second hand medical devices, and they know the market and will buy equipment they know are sustainable. This is normally a fair price, and is a win -win for both parties as you can release space, and remove an unwanted device. The purchaser can on sell a medical device and maybe make some returns on their investment.

So if you want more space, get rid of the hoard you have stored away. Make sure that your disposal procedures are up to date, find safe sources to sell or dispose of your equipment. Maybe even recycle one day.

THE DESIGN LAB

When the Executive visited the CDHB Design Unit it was apparent that much work had gone into the room concept. The layout shown had the beds placed at an angle to the wall, facing a window. All beds had a view out of a window. The wall behind the bed housed the bedhead unit with all the usual services available. There was a patient bathroom and toilet adjacent to the room. There was also draft plans of replacement buildings for Christchurch Hospital utilising the new patient room design. Some of the other designs being considered included a clinic room and the start of an operating theatre mock-up.



Bill MacDougall trying out a bed, watched by Leon Clews

The bed, bedhead unit and overhead canopy.

The problem facing CDHB after the earthquake was that 200 buildings were damaged.

106 inpatient beds at Christchurch hospital. Over 9000 rooms need repair across CDHB hospitals.

640 rest home beds and many general practices and pharmacies were lost. But all this becomes a once in a lifetime opportunity

THE DENTAL VAN PROBLEM

A toxic chemical scare in a mobile dental clinic that has catered for thousands of Canterbury schoolchildren has caused alarm across New Zealand.

District health boards are pulling mobile dental vans off the road for urgent testing after formaldehyde levels three times national health standards were found in a Canterbury clinic. However, because the standards are so conservative, experts say the risk to children was "negligible" and the risk to staff "very low". For the past year, dental therapists from the clinic have suffered headaches, nausea, itchy eyes, runny noses, aggravated asthma and skin irritation.

The Press understands staff first complained about an acrid smell and chemical exposure symptoms in March 2013, just a month after the clinic first opened. They feared the high potency smell was putting their patients - preschool and primary schoolchildren - at risk. They tried airing out the clinic by opening the doors and windows and even brought in home remedies such as onions and cloves.

When the odour remained, the Canterbury District Health Board (CDHB) ordered a Chemsafety test that identified high levels of the hazardous chemical styrene in the air. The clinic was taken out of service and a new ventilator system installed early last year. The smell persisted and since then more than 1000 rural schoolchildren have been treated at the clinic.

It was not until the National Union of Public Employees (Nupe) became involved six weeks ago and "refused point-blank to allow staff to go back into the clinic on health and safety grounds", that the CDHB agreed to test it again, Nupe organiser Quentin Findlay said.

A broad spectrum test last month found formaldehyde levels in the ceiling tiles that were 200 per cent above Workplace Exposure Standards.

The CDHB called an urgent meeting with staff and offered health monitoring to those suffering from chemical exposure symptoms. Its 22 mobile clinics were taken out of service to be tested and decontaminated. In an information sheet handed to staff, the CDHB said it was "sorry to have caused understandable distress and concern".

The Ministry of Health, Worksafe NZ and New Zealand's DHBs who all use the same mobile clinic manufacturer were all notified. Other DHBs have started testing their clinics and at least two have removed vans from service. Worksafe NZ would be investigating how the contaminated tiles got into the van and CDHB would be investigating its own course of action to "highlight what we could have or should have done differently", a spokesman said.

Last week, about 40 affected staff members attended

a forum on the risks of exposure to formaldehyde with CDHB independent occupational physician Dr Andrew Hilliard. Hilliard said the standards were conservative and any long-term risk to such minor level exposure was "very low". He had no concern for the children that had visited the clinic because they would have only been inside for a short time.

Hamilton-based company Action Motor Bodies manufactured 108 mobile dental clinics for New Zealand DHBs in 2011 and 2012. A company representative said the chief executive was in Australia and could not be reached for comment.

FORMALDEHYDE

Formaldehyde is a colourless, flammable and gaseous substance with a pungent smell. It is found in building materials and several household products, including carpets, upholstery and clothing. Exposure to high levels of the chemical can trigger nausea, watery or burning eyes, respiratory irritation, difficulty breathing, headaches and asthma attacks. The acute effects of short-term exposure would normally cease within an hour. However, long-term exposure to high concentrations of the chemical could cause chronic health effects and in rare cases even cancer.

- The Press

A solution for this issue has now been implemented in all CDHB vehicles

STUDY GRANT ARTICLE

By Jacqueline La Grand

My name is Jackie La Grand and I received a study grant from the Institute of Healthcare Engineers NZIHE to study a Masters of Business Administration (MBA).

The MBA has helped me refine my management skills, and made me realise the potential for the future of Clinical Engineering and for potential leadership I could add to it with an MBA . It's great to study, especially if you can study out of the field that you are in, as it takes you out of your comfort zone. Or you can study in your comfort zone, it's up to you. There is so much out there to study.

I found out about the grant from my local NZIHE representative Kevin, who told me about the grant when I was talking about the huge student loan I had. I filled out the application form and handed it into the institute and not long after I was given something towards my study.
The grant allowed me to pay off my student loan faster, which was great as there is no interest on the loan anyway, and at the time if you paid more than $500 extra off the loan in one year, you would receive an extra bonus deducted from the loan, so that helped me too.
Having an MBA will allow me to progress in my career and give back to the profession I feel passionate about. It is great that the institute has helped me achieve that, and I am able to give something back to the institute too.

If you are thinking about study, and want some assistance with payment, and you don't want a student loan hanging over your head for too long, I suggest you ask a committee member, or any local NZIHE member how to apply, or you can go to www.nzihe.org.nz for more information.
Further learning doesn't always have to mean progression in your career, it could just give you progression in yourself and see things from a different perspective.

the alarms, if ignored, would automatically reset.

'We increased the acuity on arrhythmia alerts and heart rate from warning to crisis," says James Piepenbrink, director of the department of clinical engineering at Boston Medical, In a transcript of the webinar. 'We observed that while the number of alerts dropped drastically, we also had greater response to alerts because those that sounded were all actionable, and the staff were now keenly listening for alarms. Because of the rapid decrease in noise on the unit, they could hear them and act appropriately."

The results from the pilot seem almost too good to be true. The number of audible average weekly alarms fell 89 percent to 9,967 after the pilot from pre pilot average of 87,823.

In addition to improving clinical care, nurses and patients were happier 'We went from an extremely loud beeping, noisy unit down to nothing, and to the point where it actually made us a little uneasy," says Patricia Covelle, RN, director of critical care nursing.

"We were afraid that the monitors weren't working," Covelle says. The monitors were an irritant and they no longer seem that way, Covelle says.
And patient satisfaction scores rose for the unit amid the quieter atmosphere.

That could be good news for the patients and their caregivers across the country if other hospitals are able to mirror those results in trying to meet the new National Patient Safety Goal.

The New Zealand Institute of Healthcare Engineering

The Institute has the following objectives:~

- **To promote interesting in technical aspects of Health Estate and Engineering Services**
- **To pool technical knowledge and experience and to disseminate this knowledge to others in the industry**
- **To encourage and assist members to improve their skills and qualifications**
- **To participate in the development and promotion of quality and safety standards in all aspects of Health Estate and Engineering Services**
- **To promote Management skills in Health Estate Technical Management**
- **Membership of the Institute is open to the many people who are involved in the technical aspects of Estate and Engineering int he Heath Service and may be in either Member or Associate member grades depending on the occupations position currently held.**