A Little TLC Equals a Lot of Energy Savings

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ABSTRACT

Based solely on a social marketing campaign and introduction of an employee engagement program related to energy conservation the Toronto Western Hospital in downtown Toronto, Canada has been able to reduce its electricity consumption by 4.6% and its natural gas consumption by 4.4% in only the first three months of the program being implemented. These marketing and communication campaigns have also resulted in GHG reductions of 5,642.5 tonnes of CO_2 equivalents. This paper provides an overview of the concepts of social marketing and employee engagement and presents the specific types of materials and tools used in both the social marketing and employee engagement campaigns at the hospital to achieve these considerable savings. The paper also presents lessons learned from implementing the program and things to consider when developing successful social marketing and employee engagement campaigns for healthcare and other institutional facilities.

These social marketing and employee engagement campaigns are components of a larger energy management and awareness program – called TLC (Thermostats, Lights and Controls) being implemented in three Toronto hospitals. TLC was designed to engage all members of the hospital community to work together to make behavioural, process and equipment changes that will increase awareness and reduce consumption of energy and production of GHGs. In all, the program consists of six major components: social marketing, employee engagement, operator and senior manager training, retro-commissioning of equipment, production of an energy plan and detailed energy audits and retrofits.

Introduction

In 2007 the University Health Network (UHN) received funding to pilot a comprehensive energy management and engagement program in their three downtown Toronto hospitals – Toronto Western Hospital (TWH), Toronto General Hospital (TGH) and Princess Margaret Hospital (PMH) - over three years. This energy management and engagement program is a tool for engaging all members of the hospital community to work together to make behavioural, process and equipment changes that will increase awareness and reduce consumption of energy and production of GHGs.

This program (from now on referred to as TLC or the TLC program) consists of six major components: social marketing (SM), employee engagement (EE), operator and senior manager training (OT), retro-commissioning of equipment (RCx), production of an energy plan and detailed energy audits and retrofits. A schematic representation of the TLC program is show in Figure 1 below. This program marries technological and equipment changes through RCx, OT and audits and retrofits with more behavioural approaches to saving energy - SM and EE.

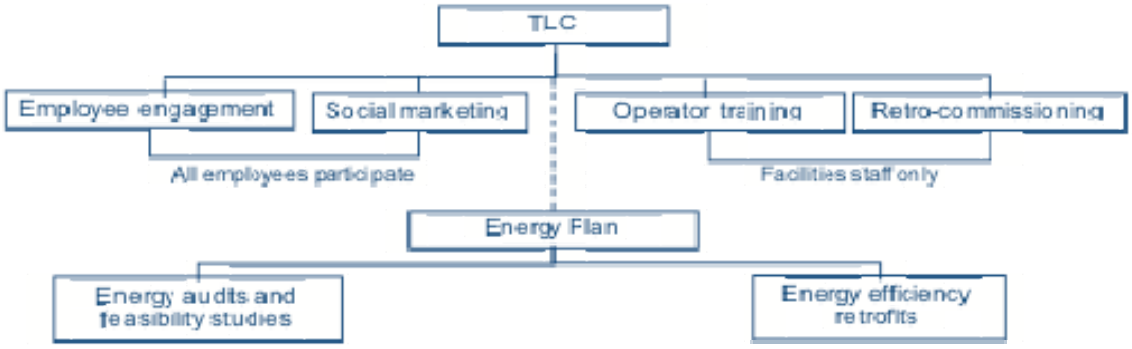

Figure 1 Schematic representation of TLC program

The TLC program was designed and implemented at TWH by a project team, which consists of staff from the UHN Energy and Environment Department (UHN) and external consultants (IndEco Strategic Consulting (IndEco), Finn Projects and the University of Toronto Sustainability Office). The project team also worked in collaboration with the TWH energy team, which is comprised of senior facilities staff from the hospital and UHN to design and implement the program. IndEco, in addition to a leadership role in SM and EE, provided overall project coordination and management, which encompassed the management the TLC program including the activities of the project team and energy team.

In the first year of the pilot (June 2007 – June 2008) the TLC program was introduced at TWH and the SM, EE and OT components were designed and implemented. Following a detailed design process the SM and EE programs were implemented in TWH beginning in January 2008. The SM campaign was piloted in four areas of the hospital while the EE program was implemented hospital wide.

The operator and senior manager training, which assists facilities and maintenance staff in identifying process changes to ensure that equipment is utilized correctly and more efficiently, was implemented in May and June 2008. An assessment of the RCx opportunities was also made and recommendations produced, however actual RCx changes, that yield energy savings, were not made in the first year of the program due to a delay in the approval process. RCx is a systematic, documented process that identifies low-cost operational and maintenance improvements in existing building systems and brings the buildings up to the design intentions of its current usage.

The first year of this pilot culminated in the development of a comprehensive and integrated energy management plan for TWH. This plan created a framework for all energy management activities taking place at TWH including, but not limited to, continued development and implementation of the TLC program components including the comprehensive audit and retrofits.

When deviations from the hospital's energy baseline were measured to obtain initial program results in late March 2008 a 4.6% reduction in electricity consumption, a 4.4% reduction in natural gas consumption and a 5,642.5 tonne reduction in CO_2 equivalents were observed. These substantial savings are attributed solely to the SM and EE campaigns, as at the time of measurement these were the only components of the TLC program that were implemented in the hospital and no other energy saving activities outside of the TLC program had been implemented during the period of measurement.

In years two and three of the pilot (June 2008 - June 2010) it is intended that a comprehensive audit, and retrofits will be conducted at TWH and that the other program components (social marketing, employee engagement, operator and senior management training and retro-commissioning) will continue to be enhanced and implemented at the hospital. At the same time elements of the program, tested at TWH, will be rolled out to the other UHN hospitals (Toronto General and Princess Margaret). In the long term, 2011 and beyond, the TLC program will continue to be improved and implemented at all three sites.

Program branding

Prior to development of the SM campaign and EE program a clearly defined brand was established for the energy management and awareness program based on a healthcare theme. This brand included: a program name (TLC – Thermostats, Lights and Controls), a tagline (Care to Conserve), a program logo and an overall look for program materials. These brand elements attempted to blend both the healthcare and energy themes so that staff would make the connection between the two. The healthcare theme was continued in some of the images used in the SM and EE materials (e.g. the use of doctor and nurse images). Going forward in year two of the pilot, this focus on healthcare images will continue and be expanded in an attempt to capture some of the other roles of hospital staff including administrators, researchers and lab technicians, and housekeeping and facilities staff so that these staff can relate to the program and make the linkage between energy use and their specific job. This brand was employed consistently across all components of the TLC program so that hospital staff were presented with a single unified energy program. From the employees perspective they are not aware whether they are participating in the SM or EE component to them it is all just TLC.

In the first year of the pilot there was some degree of brand recognition from those staff that were exposed to the program; obviously those staff that received both the SM and EE campaigns were more aware of the TLC brand and what it stood for. In year two minor modifications will be made to the logo to improve and update the look, however, the overall brand and messaging will remain the same.

Social marketing campaign

What is social marketing?

Social marketing is the systematic application of marketing to achieve specific goals for a social good. Its main purpose is to influence social change. The SM component of the TLC program was designed to reduce energy consumption in the hospital using social marketing tools that encourage staff and residents to make simple changes in their daily energy behaviours. The social marketing tools developed for TLC included detailed discussions of the environmental impact of specific behaviours, implementation strategies for changing that behaviour (energy conservation), and an assortment of 'action tools', such as e-mails, banners and posters etc., which were used to promote and prompt changed and sustained behaviour. These tools were based on the social marketing principles of psychologist and *Fostering Sustainable Behaviour* author, Dr. Doug McKenzie-Mohr. The behaviours targeted by social marketing are simple yet have large collective impacts. For the TLC program these behaviours included: more efficient use of lighting, computers and monitors and personal appliances.

Social marketing tools employed

A range of materials and tools was designed and employed in the first year of the TLC program to encourage behaviour change that results in energy savings. Rather than relying on one approach, a range was employed so that different techniques could be tested in the pilot phase. The types of tools employed and how they were disseminated are described below. These materials and tools were selected as, based on their experience implementing SM campaigns in other large institutional settings, the SM experts on the project team thought that these materials would be the most effective in encouraging behaviour change with regards to energy in the hospital. These are also the tools that UHN staff thought would work best in a healthcare setting given some of the unique challenges including: restrictions on posting materials, many

competing activities and campaigns (e.g. hand washing, infection control) and an extremely busy, high stress environment.

Social marketing champions. Social marketing champions were recruited for each of the four test sites[1]. These champions were staff that were keen to participate in the program and that were well-known and trusted within their work area. These champions were recruited during visits to each of the test floors by project team members. Project team members spoke to staff to get an idea of which person or persons would be the most interested in participating in a program of this nature and who on the floor was already very involved in department, floor and hospital activities. Green Team members working on the floors were also approached to be champions. These champions were asked to fulfill a number of roles during the implementation of the social marketing component including disseminating program materials, providing feedback to the project team on the program and leading by example. Using social marketing champions to help implement the program and provide feedback on design was very beneficial to the program as it freed up the time of the project team and allowed hospital staff to get program information from a trusted and respected peer. These champions will continue to be recruited and utilized across TWH and a similar approach to finding and engaging champions will be used at TGH during the second year of the pilot.

Tri-fold brochure. A tri-fold brochure, the size of a business card, was designed and distributed. This tri-fold brochure included information about the TLC program, why it is important to save energy, some energy saving actions that should be taken (consistent with the energy saving behaviours targeted by the program), contact information for the project team, and a 2008-2009 calendar to encourage staff to refer to the tri-fold brochure on an on-going basis. To encourage staff to retain the tri-fold brochures they were numbered and information provided about a prize draw to be made at the end of the first year of the program. Despite the efforts to get staff to refer to the brochures on an on-going and long-term basis, evidence suggested that these tri-fold brochures were not retained and used by staff. The reasons for this included that they did not fully understand the purpose of the brochure and were unsure where to keep an information piece of this size. Therefore it was decided that these brochures would not be employed as part of TLC in the future. Evaluation of the materials by the project team indicated that there was a need for more action specific prompts that contained less educational information and directed staff to take specific actions. Subsequently, in year two of the program stickers are being developed and tested that directly prompt staff to turn off the targeted end uses (lighting, computers, personal appliances).

Program pledge. Program pledges were placed in a high traffic area of each of the test sites. This pledge took the form of a large laminated poster that staff could sign. This pledge requested that staff sign to declare that they would participate in the TLC program by conserving energy and that they were committed to a more sustainable workplace. To encourage staff to sign the pledge the signatures of senior managers were placed on the pledge prior to posting. Only a small number of signatures were obtained. Feedback suggested that many staff were not aware of the pledge and those that were aware were uncomfortable publicly declaring their commitment to the program. To avoid this lack of participation in second year of the pilot the pledge has been included as part of the pre-implementation survey distributed to staff at TGH.

[1] The four test sites were four floors distributed throughout the hospital's three interconnected buildings. These four floors were selected for a number of reasons: they included activities and staff that were expected to be most receptive to the program and avoided those that would be difficult to engage (e.g. doctors, nurse, in-patient areas, labs); the sites selected had very similar floors that could be used as controls for measurement purposes; the floors had only one or a limited number of related activities or departments; there were a high proportion of Green Team members (a UHN-wide environmental group) on those floors that could be approached as SM champions. The test sites selected consisted of office areas and day use clinics that employed a range of staff including administrators, researchers and some clinical staff.

Initial results show that 89% of those that completed the survey have signed the program pledge. The pledge will also be placed on the TLC website which is being developed in year two.

Posters. A series of three posters was developed which highlighted energy saving actions that staff could undertake. The behaviours targeted in these posters and promoted by the TLC program are: lighting, computers and monitors and personal appliances including radios, fans, printers etc. These posters provided staff with information on what energy saving actions they should take and why these actions should be taken. The posters also tried to address barriers to energy saving activities that had been identified such as permission to turn off equipment. The posters were distributed at evenly spaced intervals throughout implementation of the program. The posters were successful in encouraging staff to turn off lighting, computers and monitors, and personal appliances in year one and as a result the series of three posters will be used in year two in both TWH and TGH. Some minor modifications will be made to the design of the posters to make them more visually appealing and to make the posters more distinct from one another (e.g. a different colour). Information about new TLC materials (e.g. stickers and website) will also be added to the posters.

Banners. A large vertical banner was developed which provided staff with information about the goal (15% reduction in energy use) of the SM campaign and what actions could be taken to achieve this energy saving goal. Again these actions were consistent with and reinforced those on the other program materials. This banner was placed in a high traffic area of each of the test sites. An example of the banner is shown in Figure 2 below. The banners were very well received by the staff at TWH and so the banners will be employed in both TWH and TGH in year two without any modifications to the design. Larger retractable banners will be produced to capitalize on the success of these materials.

Figure 2 Vertical banner image

Energy related give aways. To act as a promotional material for TLC and as a tool that will allow staff to save energy in their homes employees were provided with a CFL lightbulb. Staff enjoyed getting a free gift, but did not make a connection to the TLC program and saving energy in their workplace. Many CFL bulbs remained after the first year of the pilot and these will be employed in the year two at TWH and TGH. However, the focus will be on getting the SM champions to distribute the CFLs to their peers along with information about the program.

Kick off event. A kick-off event was held in each of the four social marketing test areas. Staff in each area were invited via their SM champion. At these events the following activities took place: a Powerpoint slide show was presented which described the TLC program, why it is important and what staff members could do to participate; the tri-fold brochure was distributed to all attendees; the champion was provided with the first in the series of social marketing posters to hang in his/her work area, which was subsequently posted; all event participants were given a CFL light bulb.

Attendance at the kick-off events were lower than anticipated, making the kick-off event very resource intensive for very little benefit. One of the main reasons for holding the kick-off event was to provide an opportunity to deliver the pre-implementation survey to the staff at the test sites; going forward surveys will be distributed via champions and through on-line surveys so that such events are not necessary.

Site visit. A site visit was made by members of the project team to each of the test areas. This site visit was intended to provide one-on-one promotion of the social marketing campaign and to gain informal feedback from staff on the social marketing activities conducted up to that point. Specifically, the site visit included the following activities: the SM campaign was promoted to staff via one-on-one conversations; staff were asked about their knowledge of the program and to give informal feedback on

the program materials and tools that had been presented to date; staff were asked whether they wanted to become more involved in the program; staff were handed a copy of the tri-fold brochure and a CFL lightbulb or they were placed on the desks of staff that were away from their stations; the second in the series of posters were posted on the floors.

The site visit was extremely useful in providing one-on-one information about the program to staff and for obtaining feedback from staff. In year one an external consultant from the project team conducted the site visits; feedback from staff in the test sites indicated that the site visit would have been better received if conducted by a peer from the hospital. Therefore going forward, at TWH and TGH, site visits will be conducted by UHN staff, including volunteers and the SM champions. To obtain this one-on-one contact and direct feedback UHN staff will also attempt to speak about TLC at department meetings.

E-mails. An e-mail was sent to those staff that indicated during the site visit that they were interested in becoming more involved in the SM campaign. This e-mail provided specific actions for becoming more involved in the program. An e-mail was also sent to all floor staff, for which contact information was available, asking them a question about the content of the second poster. A correct response to this question allowed staff to be eligible for a prize. E-mails are an extremely quick and low-cost method of distributing information and have received satisfactory response from staff during year one. The e-mail about the poster content will continue to be used in TWH and TGH, however, the approach will be slightly different to encourage greater uptake. Rather than a prize for a correct answer, the prize will be given to the SM champion that recruits the most staff to respond to the e-mail. The use of e-mails is more useful if appropriate (e.g. department or floor) e-mail lists are available or can be produced or if the program is being offered to all hospital staff.

Volunteers. Volunteers were recruited and trained specifically to assist with delivery of the TLC program at TWH. These volunteers assisted with a range of activities including posting the third in the series of posters. The TLC volunteers used in year one were well trained and extremely competent in matters related to healthcare. However, they were not well versed in energy issues and therefore were unable to help to implement the program as well as hoped, even with training. Moving forward the project team will work with UHN Volunteer Services to recruit volunteers specifically interested in energy and the environment and to develop a training program so that volunteers have a detailed understanding of energy and TLC prior to promoting and implementing the program.

Lessons learned/considerations

A number of very valuable lessons were learned from successfully implementing the TLC program at TWH in the first year of the pilot. These lessons have been translated into things that should be considered when developing a SM campaign as part of a comprehensive energy management and engagement program in a healthcare or institutional setting. These considerations are described below.

Pilot. Pilot/test the SM component in one or a few areas in the hospital. Roll out the component to the whole hospital, or other portions of the hospital, once satisfied with the campaign and the results achieved. When selecting sites start with those sites/staff that are expected to be most receptive to the program and avoid staff or areas that may be difficult to engage (e.g. doctors, nurses in-patient areas etc.). Roll out to those sites/staff once the campaign is more refined.

Recruit champions. Social marketing champions are essential to developing and implementing a successful SM campaign. These champions should be staff well-known and trusted within their work area. Identify

champions for each of the test sites early and utilize them as much as possible. Tasks that champions can be asked to assist can include, but are not limited to: disseminating information to colleagues – orally, electronically and by posting social marketing materials; providing information and feedback to the project team on campaign materials and tools and leading by example.

Identify barriers. Identify barriers to staff taking conservation action - and to the campaign in general - prior to implementing the SM campaign as well as after each year of implementation. Some barriers to action may include: an institutional hierarchy within the hospital; a lack of control (real or perceived) over surroundings and equipment; restrictions on posting SM materials and other programs or processes in the hospital that may restrict activities (e.g. accreditation, certification). These barriers can be identified by various means, including through surveys, observations and interviews with program participants and project team members.

Design then implement. Design the SM campaign prior to implementation. However, the design must be adaptable to situations that arise within the hospital. Where possible, campaign design should be iterative and staged.

Use a variety of materials. Employ a variety of different types of materials and methods of delivery for the SM campaign, particularly at the pilot stage. This allows different types of materials and modes of distribution to be tested. If a material or delivery method is not meeting your needs and engaging staff, then it can be scrapped or refined to better meet your objectives.

Integrate. Integrate SM activities into existing programs, where possible. This should be done to reduce resource requirements and to capitalize on the success of the other program(s).

Be inclusive. Program materials and messaging should speak to or be adaptable to communicate with a range of staff (e.g. doctors and nurses, management, housing keeping and facilities staff).

Timing. Build in long lead times for tasks particularly those that require institutional approval. Artificial or tight timelines should be avoided when designing and implementing a SM campaign as behaviour change is by nature slow. The campaign materials should be delivered at regular intervals – no large gaps or too much information at once.

Measure. Measure the results of the SM campaign. Both the energy savings achieved (via installation of submeters, engineering calculations or deviations from baselines) and the behavioural and attitudinal changes of the staff (via delivery of surveys prior to and following implementation of the campaign). Consider the use of control areas for comparison, where practical. Determine the appropriate metrics for measurement for both the project team and for the program participants including translating energy savings into metrics that resonate with staff e.g. dollars saved, equivalent cars off the road etc.

Summary

The success of the SM component of the TLC program was due to the types and range of materials and tools employed. The use of peer champions to spread the message was extremely beneficial as it saved time and resources and provided information and prompts to the test sites from a trusted and credible source. Selecting the office areas and clinics as the test sites also contributed to the success of the campaign as this allowed the materials to be tested in a more receptive environment prior to roll out to those areas of the

hospital that are more difficult to engage. The success of the campaign was also due in part to the materials that were employed, in particular the large, highly visible and visually appealing posters and banners. The simplicity and consistency of the message was also an important factor in the success of the campaign. All materials reinforced the same basic actions of turning off lights, computers and personal appliances.

Employee engagement program

What is employee engagement?

In the context of TLC, employee engagement is a marketing and communication tool or framework used to assist the hospital in identifying and implementing energy conservation actions. The difference between EE and other types of communication tools such as SM is that EE allows for the two-way flow of information regarding energy and energy efficiency. In EE not only do staff receive messaging on energy conservation, but they also have opportunities to provide their ideas for improvements in energy efficiency. Peers then evaluate these ideas and the most appropriate energy measures are implemented. The results of implementing the measures are then reported back to the employees in a timely fashion to motivate them. Employees are subsequently rewarded for their efforts. This process allows staff to become more aware of energy use and conservation and allows them to take ownership of the ideas and their implementation.

Employee engagement materials employed

A range of materials and tools was designed and employed to promote, track and implement the EE component of the TLC program. The types of tools employed and how they were used are described below. These tools and materials were employed as they were viewed as essential elements of a successful EE program by the employee engagement experts on the project team. The materials developed to promote the EE program were selected as the social marketing experts on the project team thought that these materials would be the most effective in promoting the EE program and in encouraging staff to submit their energy saving ideas. UHN staff also thought that these materials would work best in a healthcare setting given some of the unique challenges. A range of different materials and tools were also employed so that one approach was not relied on and so that different materials and tools could be tested in the pilot phase.

Employee engagement team. An employee engagement team was established to evaluate the energy saving ideas submitted by hospital staff and to help promote the EE program to staff. This team took some months to recruit and consisted of staff from a range of departments including clinical, housekeeping, public affairs, and security. A range of departments was used to provide more depth of knowledge when evaluating the energy saving ideas submitted by staff and to help promote the program to a number of different departments. To provide technical knowledge and assistance, members of the energy team (senior facilities staff and the UHN Energy and Environment Department) worked with the EE team to evaluate the energy saving ideas that were submitted.

In the first year, it took some months for the EE team to understand the program concept and to get comfortable with evaluating the ideas. The EE process developed by the project team had to be revised a number of times to better meet the needs and capabilities of the team. The EE team will continue to be used in year two at TWH and a similar team will be established for TGH. Recruitment for the TWH EE team also continues in order to acquire staff from unrepresented departments, which may be able to make a valuable contribution to the evaluation of the energy saving ideas (e.g. Human Resources).

Program process. A detailed and transparent process for promoting and tracking the EE program and for submitting and evaluating ideas was established. It is important to have a transparent EE process so that participants can be recognized accurately for their contributions and so that if staff question what happened to their ideas and why the idea was or was not implemented, an appropriate and accurate response can be provided.

Tools - including a tracking database and evaluation matrices - were also developed to accompany this process. The tracking database is a repository for all the information needed to track the submission, evaluation and implementation of an idea. This information includes: who submitted the idea, when it was submitted, the results of the evaluation by the EE team, the date that follow up response was sent to the staff member that submitted the idea, and the date that the recognition and/or reward was provided. Evaluation matrices were also developed so that the EE team and energy team could evaluate the ideas submitted by staff and provide recommendations as to whether they should be implemented. The criteria used to evaluate the ideas included ease of implementation, importance and level of innovation.

Throughout the first year the EE process was revised to address the barriers and opportunities that arose during implementation of the EE program and to better meet the needs of TWH. The tools, both the tracking database and evaluation matrices, were also modified to better meet the needs of the process, the project team and the EE team. For example, the tracking database was originally a simple spreadsheet document, however, as implementation of the process proceeded, it became evident that a lot of information needed to be tracked and that a more detailed and robust tracking system would be required. The process and tools will continue to be used in year two at TWH and refined as needed. The existing process and tools will also be transferred to TGH and will be modified as required to better meet the specific needs of that hospital.

Promotion. To promote the EE program to all hospital staff a number of promotional materials were developed. The EE program was promoted so that staff were aware that they could submit their energy saving ideas and where and how they could provide their suggestions.

To promote the EE program a postcard with a detachable business card portion was distributed to all employees with their pay stubs. This method of distribution was selected as it was one of the only ways available to distribute materials hospital-wide in which all staff were guaranteed to receive a copy. This postcard allowed staff to write down their energy saving ideas and submit them to the project team via intradepartmental mail. A section of the postcard could be detached and retained by the staff as a reminder about the TLC program and to provide them with information about the EE program and how they could submit additional ideas in the future. An example of the image presented on the front side of the postcard is shown in Figure 3 below. This postcard was extremely well received (particularly the image used) by TWH staff and solicited a great response in terms of returning the postcard with energy saving ideas. Staff did not however retain the detachable portion of the postcard as intended, instead submitting the whole postcard. Due to the high cost associated with this method of promotion the postcard will not be produced for TWH in year two; instead the image and request will be distributed via a hospital wide e-mail. Since the program is just being introduced at TGH, the postcard will be distributed to promote the EE program and to create a general interest and buzz about TLC.

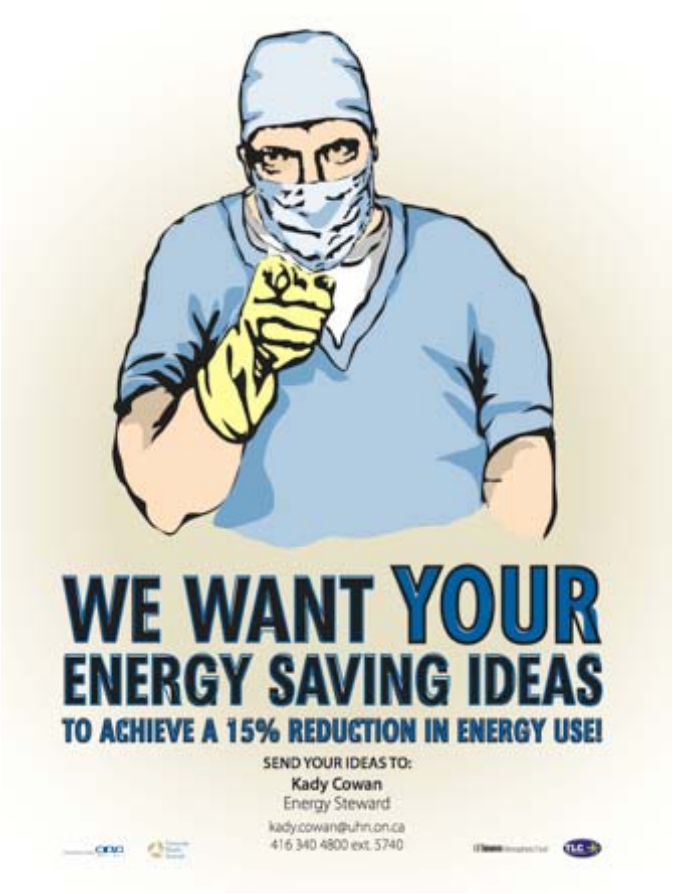

Figure 3 Employee engagement postcard image

A promotional package was also developed to promote the EE program. This package was provided to members of the EE team, members of other existing energy or environmental groups in the hospital (e.g. Green Team members) and to other staff members that expressed an interest in becoming more involved in TLC. This promotional package provided a toolkit that keen staff could use to promote the EE program to their colleagues. The promotional package included the following materials: an introductory letter – thanking staff for their participation and providing information about how to use the promotional package; a generic e-mail – about the EE program that participating staff can send to their colleagues; FAQs – a list of questions and answers about the EE program that participating staff can use to address any questions they may receive regarding the program; talking points – a short speech that participating staff could relay to their colleagues either during a meeting or just in conversation; a flyer poster – a small (8½ x 11) poster promoting the EE program that can be photocopied and posted by participating staff in their work areas

The promotional package worked extremely well to solicit energy saving ideas from employees as staff heard about the program from peers and they were able to use materials that worked best for them to promote the program. The packages will continue to be produced and distributed to interested staff at TWH and will be provided to the same types of employees at TGH.

Feedback, recognition and rewards. An important part of an employee engagement program is to provide feedback, recognition and rewards to staff to encourage further participation and allow them take ownership of the energy saving ideas. In the first year of the program feedback was provided to staff (in the form of an e-mail) upon receipt of the idea and once a decision was made about whether or not to implement the idea.

Those that submitted an idea were also recognized through publication of their names in the hospital newsletter. Rewards were also offered to all staff that submitted an idea as they were entered into a draw to win a prize. Rewards were also provided to those staff that submitted the most innovative ideas as determined by the EE team. At this stage in the implementation of TLC is difficult to tell whether the feedback, recognition and rewards are working as intended due to the limited number of ideas that have made it through to implementation. This approach will continue to be employed at TWH unless evidence suggests that is not working and a similar approach will be used at TGH – with modifications to adapt to the TGH specific context.

Lessons learned/considerations

A number of very valuable lessons were learned from successfully implementing the TLC program at TWH in the first year of the pilot. These lessons have been translated into things that should be considered when developing an EE program as part of a comprehensive energy management and engagement program in a healthcare or institutional setting. These considerations are described below.

Establish a team. Establish an employee engagement team to evaluate the energy saving ideas submitted by the hospital staff. This team should be recruited early in the process and made up of staff who are extremely keen to participate in the program. If possible staff should be recruited from a range of departments (e.g. clinical, housekeeping, public affairs, human resources) to provide more depth of knowledge when evaluating the energy saving ideas submitted by staff. Technical knowledge and assistance will likely be required and so participation by facilities and maintenance staff is also needed.

Develop a process. Develop a rigorous and transparent process for tracking, evaluating and implementing the energy saving ideas submitted. Careful consideration should be given to the tools (e.g., database, spreadsheet, etc.) used for tracking and evaluating ideas so that they are flexible and scoped appropriately. Once the process has been developed by the project team, test it by running through some ideas submitted with the EE team. Revise the process as required based on this testing.

Evaluate ideas. Evaluation criteria for ideas should be carefully considered. Parameters such as research required, the degree of practicality of the idea and level of innovation of the idea are recommended.

Promote. Promote the employee engagement program to staff hospital wide to solicit energy saving ideas. Again, like the SM component a range of materials and methods of delivery should be used to promote the program. Be careful not to over-promote the program and end up with many more ideas than can be realistically evaluated and implemented within a reasonable timeframe.

Provide feedback. Provide feedback to all staff that submit an idea on the status and results of their idea. Promote successes hospital wide to build momentum and to encourage further participation in the employee engagement program.

Recognize and reward. Recognize and reward staff for their participation (e.g. certificate of participation for submitting an idea) and for an idea that leads to implementation (e.g. prizes, recognition in a hospital newsletter).

Measure. Measure the results of the employee engagement program. Both the energy savings achieved (on an idea by idea basis using submeters or engineering calculations) and the behavioural and attitudinal

changes of the staff (via delivery of surveys prior to and following implementation of the program) should be measured.

Summary

The process and the accompanying tools developed for the EE program worked well in part due to the on-going modifications made following implementation and testing. Over time (months) the EE team gained a good understanding of the program and became more efficient and expert in the evaluation of ideas. The promotional materials produced worked extremely well to solicit a large, yet manageable number of ideas from hospital staff. Due to this success, this approach will continue to be used at TWH and transferred to TGH. Moving forward it will be important to incorporate long lead times into the development and implementation of EE to get the EE team up to speed and comfortable with the process and to develop a process that will work for the team and the hospital as a whole.

Conclusion

The behavioural components (SM and EE) of the TLC program have saved large amounts of energy and reduced GHG emissions in just the first three months of implementation; and have the potential to save much more (up to 15%). Savings are enhanced by incorporating these components into a larger, more comprehensive energy management and engagement program which includes more technical energy saving measures such as RCx, training and audits and retrofits. The elements of the TLC program, such as the SM and EE components presented here, can be developed and implemented in isolation however a comprehensive and integrated approach to energy management is recommended.

The tools and materials developed as part of these behavioural components are essential to the program's success. These materials have achieved the desired results, however, there is room for improvement. The tools and materials employed in the first year of TLC, and presented in this paper, represent an important and valuable foundation upon which to build the TLC program in future years and from which to develop and implement similar programs in other healthcare and institutional facilities.

Important and very valuable lessons were learned from designing and implementing the SM and EE components of the TLC program in the first year. These lessons should be taken into consideration when developing an energy conservation program for a hospital or any other large institutional facility.