The Innovative Ward Project: promoting innovation in health service delivery.

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Abstract

An Innovative Ward Project was undertaken as part of the planning for redevelopment of the Princess Alexandra Hospital. Two inpatient units (one medical and one surgical) became pilot areas for developing, implementing and evaluating innovative approaches to service delivery. The project focused on the key areas related to structural environment, information technology and redesign of work practices. This paper provides an overview which includes the key elements utilised to foster innovation. The challenges of disseminating and adopting successful innovations beyond the Innovative Wards are discussed.

Introduction

Health service delivery in Australian hospitals is undergoing marked transformation. There is a move away from large, resource intensive metropolitan hospitals with redistribution of funds according to population patterns (Braithwaite, 1993a). Hospitals are restructuring with management and budgetary control being devolved to clinical units (Braithwaite, 1993a; Braithwaite, 1993b; Queensland Health Central Zone Management, 1999). Performance- or output-based funding is being emphasised in an environment of fiscal restraint (Degeling, 1991; National Health Strategy, 1991; Queensland Department of Health, 1999). Additionally in Queensland, a large-scale capital works program announced by the State Government in November 1992 and commenced in July 1993, has been the focus of change.

The program included a $320 million redevelopment of Princess Alexandra Hospital (PAH). This hospital represented a unique opportunity to plan a service to meet the health care needs of the future. The vision of hospital management was to plan a service congruent with the transformation occurring in Australian hospitals, and to be at the forefront of service delivery by exploring innovative approaches to patient care. The Innovative Ward Project (IWP) involved two inpatient units becoming pilot areas for trialing innovations in service delivery.

The Innovative Ward Concept

Gilmartin (1998) describes innovation as creative problem solving, capturing the unique knowledge of those at the practice level to bring about positive change. Innovation is dynamic, and the means by which an organisation can respond to changing internal and external influences (Gilmartin, 1998). It could be argued that a deliberate effort to foster innovation is essential to respond to future health care needs.
One of the key elements in creating the innovative environment is to challenge traditional ways of thinking. This can be achieved by introducing people who can challenge inherent assumptions and stimulate rethinking of the way things are done (Kanter, 1986). The ‘Inpatient for a Day’ experiment, initiated at PAH in July 1997, was to stimulate such thinking. Health care professionals, service planners, architects and media personnel were admitted to PAH as ‘patients’ for a 24-hour period and given care in accordance with their ‘condition’. The event received widespread media coverage and facilitated considerable debate, not only about the physical structure of the environment but also the manner in which service was delivered.

To capture the interest and ideas created by the ‘Inpatient for a Day’ project, the District Manager introduced the Innovative Ward concept. In preparation for transition into the redeveloped complex, two inpatient units would be established to improve the quality of service delivery by trialing the proposed structural layout of the new complex, integrating information technology into the acute clinical environment, and redesigning work practices.

**Development of the concept**

The IWP was overseen by a reference group with representation from managers of Corporate Services, Clinical Support Services, Medicine, Nursing, Information Technology, Redevelopment and Industrial Relations. The primary function of the group was to provide an avenue for resolution of complex issues and to encourage innovation by supporting the clinicians leading it, rather than assessing ideas and making decisions about approval. As this was a change in role from the traditional hierarchical approach to health care management, clarity in the terms of reference for the group was critical.

Once the reference group was established, submissions were invited from consultants, registrars and level 3 nurses interested in leading the development and implementation of the IWP. Submissions addressed what these staff could offer the project in terms of leadership, establishment of clinical teams, vision for the Innovative Wards and evaluation of innovation. Panel interviews were conducted where required, to appoint a registered nurse and medical officer to lead each Innovative Ward.

The leaders experienced different circumstances regarding the establishment of clinical teams. One team was already established and had presented a submission of interest. This team used a participatory approach to service delivery. The culture was one where staff of any designation were seen to play a valuable role in the team. As this team was already in the process of addressing many of the issues identified in the submission of interest, the concept of the Innovative Ward was readily adopted.

The other leaders needed to establish a team. They had volunteered to champion the Innovative Ward, and felt that other staff should have the same opportunity. This strategy would promote the development of a motivated group of staff committed to the project. There was, however, some difficulty encountered in filling nursing positions. Despite active recruitment across the organisation, further recruitment was required externally.

Once the core clinical teams were established, a working party was formed in each Innovative Ward. Working party membership varied between the Innovative Wards but included nursing (staff internal and external to the Innovative Wards), medical, allied health, information systems, reception and secretarial staff, in addition to a patient advocate representative. The working parties prioritised and organised innovative activity to ensure congruency with the aim of the IWP. Working party meetings became forums to develop ideas, direction and appropriate evaluation of innovation. Many of the ideas presented to the working parties stemmed from a brainstorming workshop organised in conjunction with the Organisational Improvement Unit (Queensland Health). This workshop was to add to the ideas generated from the ‘Inpatient for a Day’ experiment, with staff from all disciplines attending and contributing to idea development.

In order to trial innovative ideas for the new hospital environment, the working parties also coordinated renovation of the Innovative Wards. Two existing inpatient units were closed in December 1997 and renovated to reflect, as closely as possible, the structural environment in the clinical areas of the new hospital. The renovations were funded by an untied infrastructure grant. Improved inpatient accommodation, open plan multidisciplinary workstation, gymnasium, tutorial and interview rooms were remodelled to represent the redeveloped complex. Members of the working parties facilitated staff involvement in the design of the units by liaising with staff and representing their requests when interacting with builders, architects and company representatives.
During the closure period, the clinical teams were prepared for the challenges ahead. Programs incorporating business planning, team building (including problem solving, communication and change management skills) and clinical skills training were conducted.

The Innovative Wards reopened at the completion of renovations in January and February 1998. A significant amount of change was implemented in these wards over the ensuing months.

**Innovation in action**

The modified physical environment allowed staff to assess the functionality of the proposed structural layout of inpatient units planned for the new hospital. Functional and dysfunctional areas were identified. For example, the floor space and layout of 4- and 1-bed patient bays were assessed as functional. Separate medication and clean utility rooms were assessed as dysfunctional. Assessment of carpeting for the clinical areas after 18 months of heavy usage focused on durability, noise reduction and maintenance of cleanliness. The importance of staff training regarding appropriate cleaning methods for the carpet was identified. Concern related to friction led to the requirement for trolleys to have wheels that moved freely on the surface. Reports detailing the evaluation of the structural layout provided architects and planners with evaluation results enabling modification of plans, reducing the likelihood of constructing less than ideal clinical units.

A sophisticated information technology system was planned for the new hospital. One of the aims of the IWP was to improve service delivery by integrating information technology into the acute clinical environment. This had a significant impact on patient care delivery.

A wireless local area network (LAN) allowed staff to use laptop computers at the bedside to access and enter clinical data. Pathology results could be accessed during medical rounds assisting prompt decision making and promoting the delivery of timely information to the patient. The Hospital Based Corporate Information System (HBCIS) could be accessed, enabling bedside updating of nursing condition lists and electronic ordering of patient diets. Patient-specific information pamphlets could be generated in Pre-admission Clinic as the laptop could be transported to this area. The LAN was linked to an automated medication and supply distribution system, which interfaced to the Pharmacy dispensing computer system.

The automated medication distribution system (AMDS) was introduced together with locked bedside drawers to store patient’s medications. Prospective review of a patient’s medication regime by clinical pharmacists involved interaction with medical staff at the time of prescribing to ensure safe, effective and economic drug selection. Following this review the pharmacist generated a medication profile on the AMDS which facilitated a safer drug selection process by nursing staff. A comparison by Coombes et al (1999) of opportunities for drug administration errors between the AMDS and traditional imprest system demonstrated a substantial reduction for opportunities for error (16.0% imprest versus 11.5% AMDS).

This system provided efficiencies in the drug distribution process encompassing reduced nursing time spent manually ordering and restocking medications, and elimination of end-of-shift controlled drug counts. It also increased safety and quality in the medication process, and improved drug usage and prescribing data to patient and prescriber level (Maclean et al, 1999).

Clinical teams of the Innovative Wards examined the way they conducted their work and explored ways to improve the quality of service delivery. Comprehensive reviews of work practices were undertaken across disciplines involving participation from ground level employees. A review of the provision of support services facilitated the introduction of multi-skilled Unit Support Officers (USOs).

**Table 1: Environmental Rounds**

<table>
<thead>
<tr>
<th></th>
<th>Cleaning Status</th>
<th>General Ward</th>
<th>Cleaning Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgical Innovative Ward</td>
<td>74%→83%→91%</td>
<td>73%→95%→96%</td>
<td>72%→80%→99%</td>
</tr>
<tr>
<td>Medical Innovative Ward</td>
<td>58%→75%→93%</td>
<td>67%→87%→98%</td>
<td>82%→88%→99%</td>
</tr>
</tbody>
</table>

Figures indicate % of key evaluation areas achieved from November 1997→March 1998→November 1998,
Infection Control Princess Alexandra Hospital
Previously two different departments provided support services to inpatient units. The service was fragmented, task-orientated and isolated from the clinical team. Volunteers from support services departments were invited to redesign work practices to improve patient focus. Union representation was sought in the design phase. Redesign initiatives included retraining to address the multifaceted aspects of the new role such as infection control, standards of service, food hygiene, workplace health and safety and change management. Rosters were rescheduled to accommodate peak periods in patient activity. Physical resources were upgraded or trialed to accommodate the multi-skilled aspect of the role. USOs were introduced into the Innovative Wards in July and August 1998.

An evaluation in December 1998 revealed significant improvement in environmental audits conducted by the Infection Control Department (Table 1). Initial improvements in environmental cleaning standards prior to implementation of USOs (March 1998) were anticipated given the structural renovation. The level of absenteeism had fallen considerably when compared with data for other support service staff over the same period (Table 2). USOs willingly adopted enhanced roles and responsibilities including self-rostering, evaluation of equipment trials and the development of a user-friendly manual detailing specific cleaning activities. The USOs reported improved job satisfaction.

**Table 2 Sick leave statistics over a 6-month period**

<table>
<thead>
<tr>
<th></th>
<th>Surgical Innovative Ward USOs</th>
<th>Medical Innovative Ward USOs</th>
<th>Environmental Officers</th>
<th>Nutrition &amp; Food Services</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.6%</td>
<td>0.6%</td>
<td>7%</td>
<td>6.7%</td>
</tr>
</tbody>
</table>

* Figures represent sick leave for group across the organisation

Other areas where work redesign was implemented successfully included enhancement of clinical roles for Registered Nurses and review of Intern work practices. See Table 3 for summary of Innovative Ward activities.

**Fostering innovation**

Despite the many successes attained, the path has not been without challenges. One of the key lessons learnt from the project is the importance of support for innovation. Kanter (1984, 1985) argues it is essential that support for new ideas that challenge the status quo flows from key figures in the organisation. High-level, visible commitment to the IWP was a key element to enable the project to gain and maintain momentum. The District Manager articulated a clear vision for the IWP that was congruent with organisational goals. This high level commitment established and maintained support for innovation.

Minimising barriers to innovation is vital to reduce frustration and feelings of futility. Being innovative or creative can be daunting in an environment that is largely designed to maintain the status quo. In the past, conformity and predictability has been promoted within the nursing profession to produce efficiency and thus creativity has been suppressed (Gilmartin, 1999). Berwick and Thomas (1998) maintain that defending the status quo is the dominant professional response in medicine, with only some physicians acknowledging that medical action or inaction has contributed to the problems facing health care. Given these underlying forces, the need to support innovation by minimising obstacles to creativity was apparent. The establishment of a reference group with clear terms of reference and sufficient authority to minimise barriers to change, was undertaken for this reason.

Support for innovation was also demonstrated by devolving ownership of the project. Gilmartin (1998, 1999) argues that people at the practice level are best positioned to provide solutions for future health care delivery. Furthermore, clinicians within the organisation are intimately familiar with the work environment, the demands of their consumers and the potential for improvement in service delivery (Gilmartin, 1998, 1999). The IWP management made use of the talent that existed within the organisation, rather than relying on external consultants. Staff members involved in the Innovative Wards were allowed the freedom to develop ideas in accordance with the aim of the project. The leaders of the Innovative Wards promoted a creative environment by supporting a participatory approach to innovation by all team members.
Table 3: Innovative Ward Activities

- Evaluation of unit structural layout

- Integration of information technology into clinical environment
  - Automated medication supply distribution
  - Digital camera
  - Wireless local area network (LAN) and laptop for bedside consulting
  - Trialing voice activated software for generating reports
  - Electronic unit orientation packages

  © Winner of Australia wide competition for most interesting application of information technology in a clinical setting

  © World leaders in LAN & Automated Medication Supply Distribution interface

- Redesign of work practices to refocus on the patient

  © Nursing staff
  - Modified nursing care models
  - Unit based discharge planning
  - Unit based IV cannulation / phlebotomy service
  - Development of Clinical Management role
  - Proposal for nursing assessment post adverse patient incident
  - Exploration of improved transcultural communication service
  - Development & implementation of falls risk assessment tool
  - Unit based clinical facilitation of undergraduate nursing students

  © Medical staff
  - Improved process for classifying, coding, dissemination of surgical statistics
  - Retrieval of patient information on ward round via laptop computer and wireless local area network
  - Combined Intern / RN clinical skills training

  © Unit Support Officers
  - Expansion of role to include cleaning, food service delivery
  - Responsible for self rostering
  - Initiated time management review
  - Involvement in equipment trials
  - Joint responsibility for environmental rounds

  © Nutritional assistants
  - Multiskilling

  © Pharmacist
  - Prospective profiling of medication

  © Clerical staff
  - Multiskilling

  © Manual handling program for all staff

- Development of multimedia CD ROM outlining project
  - Developed in conjunction with Moreton Institute of TAFE
The potential creativity of staff across disciplines at all levels was accessed. Staff were encouraged to generate and own innovative ideas. Staff were supported in the development of skills in researching, planning, implementing and evaluating initiatives. While Innovative Ward leaders set up processes to ensure initiatives were congruent with the aims of the project (working parties), this facilitated rather than controlled the progression of ideas. Instead of controlling, leaders coached and supported innovators to reduce frustration and promote success. Tross and Cavanagh (1996) support this approach maintaining that the priority for leaders is to shape an environment that promotes innovation and recognises the creative potential of staff. A participatory approach can be built where the clinical leader facilitates rather than controls change (Wright, 1996).

A key element which helps to shape a participatory and creative environment is open communication (Gilmartin, 1998). This promotes free flow and cross-fertilisation of ideas from one discipline to another as information is more readily available (Kanter 1984,1986). Open communication principles were utilised throughout the IWP. These included a participatory approach to interdisciplinary brainstorming sessions, availability of working party minutes to all members of staff and encouraging contributions by all members of staff to the ward newsletter. Open communication principles were interwoven into revised work practices such as interdisciplinary clinical training sessions. To promote a climate of open dialogue, leaders of the Innovative Wards found it necessary to overcome scepticism among their staff, that individual knowledge and skill were valued. It was recognised that if staff were reluctant to speak up, potentially innovative ideas would be lost. People need to feel valued to encourage creativity (Kanter, 1986).

Communication to all staff of the importance of the IWP to overall organisational aims, fostered trust, knowledge and commitment to innovation. Staff at all levels needed to understand how innovations could impact on future organisational directions such as the design of new hospital facilities and the workforce of the future. Communication of the ‘bigger picture’ was achieved by using everyday language at working party meetings, via the ward newsletter and during day to day unit activities. All these actions allowed staff to develop an appreciation of the privileged opportunity they had been given to contribute to a project specifically resourced to promote innovation.

Resources are another key component (Kanter, 1984; Manion, 1993; Wright, 1996). Resourcing innovation requires consideration for specific funds, time, space and equipment or materials (Manion, 1993). The IWP would not have become a reality without funds allocated for the purpose of structural renovations and information technology acquisition. Flexibility in funding supported equipment trials, brainstorming sessions, staff development activities and changes to work practices. Creative rostering enabled staff to work off-line for specific initiatives although many unpaid hours of staff time were devoted to the project. Improved information technology in the Innovative Wards facilitated access to research databases and literature to promote the application of evidence-based practice.

Kanter (1984) notes that not all innovation requires large capital investment and may be supported by creative budgeting. However, high innovation organisations reserve resources specifically to support innovative activity. As the IWP project progressed resources for initiatives were provided from existing ward budgets. This was influenced by changes within the organisation external to the IWP, that supported cost centre management at the clinical level. Gardner (1996) argues that when clinician managers are given discretionary power to move money among different categories of personnel and services, allocation of resources based on cost-effectiveness and the enhancement of quality services is encouraged.

The growing enthusiasm for innovation was managed by not only encouraging and financially supporting idea development, but also preparing staff for setbacks. Innovation by nature will not always proceed as planned and staff need to be prepared for this (Kanter, 1985; Manion, 1993). Revision of ideas should be supported (Manion, 1993). It should be emphasised that not all innovations will be successful and that ascertaining why is still important (Tross & Cavanagh, 1996). Although there was unit-based success in implementation of the USO role and early union involvement, application of changed work practices associated with this role throughout the organisation will require further negotiation with industrial bodies.

To prepare staff for setbacks, leaders of the Innovative Wards encouraged the understanding that initiatives may not be right the first time. Staff were supported and encouraged to rethink, modify and evaluate if things did not proceed as planned. This created an environment that promoted safe exploration of ideas and highlighted the value of evaluation.
Planned evaluation allows ideas to be modified to promote successful innovation (Wright, 1996). Part of the planning process should include determination of key indicators on which the success of innovation will be measured (Manion, 1993). Key performance indicators were determined during the planning phase of the IWP. Other indicators were developed as other initiatives surfaced. Throughout the project the importance of staff at all levels being involved in evaluation was highlighted to promote unbiased assessment of initiatives. While specific indicators were important, evaluation criteria encompassed a broad perspective to allow outcomes to be justified from several sources. This provided feedback to organisational management and to the staff championing innovations.

Innovators require ongoing feedback beyond planned evaluation to sustain enthusiasm and creativity. Recognition and reward for effort serves to maintain innovation (Gilmartin, 1998; Kanter, 1986). Leaders of the Innovative Wards rewarded innovators via acknowledgment of effort from the working party and higher level management (e.g. District Manager). They also offered time off in lieu for work performed out of paid hours, and provided professional development opportunities such as attendance at educational forums or courses and opportunities to promote innovation outside of the unit (such as conference attendance). Rewards for the leaders of the Innovative Wards included the opportunity to own the project, be recognised as leaders of the project and to see the creative potential of team members accessed and developed.

**Future challenges**

The IWP needs to ensure that the knowledge gained is shared and applied throughout and beyond the organisation. Concentrating innovation in pilot sites has several advantages. Staff who are motivated to change and teams with close working relationships are more likely to succeed in implementing change (Kanter, 1985; Wright, 1996). There is a tolerance for setbacks and a willingness to contribute to concept modification (Delbeq, 1985). However, success of this approach to innovation will also depend on organisational strategies to diffuse and apply knowledge gained beyond pilot sites. Kanter (1985) notes that it is almost impossible to contain innovation within one area of an organisation. Innovation will impact on other organisational units via a ripple effect.

Enthusiasm for adopting innovation is encouraging, but planned implementation of innovations will be required to ensure that areas do not function in isolation, with some accepting innovative approaches and those resisting being left behind. Organisational management has an important role in determining which potential innovations will be adopted according to congruency with organisational strategic plans (Gilmartin, 1998). Diffusion of innovation will require ongoing commitment from higher level management, particularly given that some key leaders involved in the IWP have moved elsewhere. Turnover of members of an innovative team and lack of committed leadership have been associated with failure of initiatives (Kanter, 1985). This will be a testing time for the strength and flexibility of the participatory approach to innovation employed throughout the IWP.

Tross and Cavanagh (1996) argue that adoption of innovation is also influenced by availability of information demonstrating the quality, value and effect of innovation. Evaluation has been emphasised throughout the IWP. Outcomes of initiatives and the knowledge gained have been communicated at numerous forums, both within and outside the organisation. A multimedia CD ROM outlining the project is under development.

Broader communication of innovation in health care could, however, be achieved using internet technology. Clinician access to internet sites dedicated to innovation in health care could allow greater cross-fertilisation of ideas between rural, metropolitan and international health care providers. Internet sites dedicated to innovation already exist. The Australian Resource Centre for Hospital Innovations (ARCHI), which was established in May 1998, collates information and resources in relation to innovative health care delivery. Information submitted to ARCHI is subject to editorial review (http://www.archi.net.au).

In order to access and contribute to such dynamic and powerful information tools, clinicians need awareness of and local access to such information. This could be achieved by creating links to relevant sites from health care organisations intranet systems or web pages of other health care professional bodies. Adoption of innovation in health care could be promoted via innovative communication.
Conclusion

The IWP at PAH was established to encourage innovative approaches to inpatient service delivery in preparation for transition into a new hospital complex. A participatory approach to innovation encouraged staff across the disciplines at all levels to generate and own innovative ideas.

Key elements that promoted innovation included high level commitment to the project, a mechanism for minimising barriers to innovation and devolution of the project to those at the practice level. Additional financial resources supported project initiatives. Appropriate rewards served to maintain innovative activity among those championing new ideas. Planned evaluation provided valuable feedback to staff involved in the project and to hospital management. Dissemination of successful innovation throughout and beyond the organisation, is the challenge now facing the project.

The IWP will conclude with the move to the new hospital. However, organisational strategies to foster innovation should continue. If health care organisations are to be in a position to respond to rapidly changing health care needs, then innovation must become an expectation of all staff within an organisation, rather than a separate entity that occurs in addition to ‘real work’ (Gilmartin, 1998).

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