

Nursing EFFECTIVENESS, UTILIZATION & OUTCOMES RESEARCH UNIT

A collaborative project
of the University of
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Our mission is to
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FACT SHEET - IMPACT OF TECHNOLOGY

What is technology?

Technology includes drugs, medical devices, surgical and medical procedures, and the organizational and supportive systems in which these are delivered (Deber, Wiktorowicz, Leatt & Champagne, 1994). Technology reflects basic assumptions about health care, work, and the organization of health care. It is neither gender nor culturally neutral. It embodies choices about what is to be developed, how, how it will be introduced and who will have access. Further, technology requires choices about resource allocation. With scarce resources and expensive technology, technology purchasing is often done at the expense of the health care work force. Technology has many benefits but it transforms care delivery.

Appropriate technology must be acceptable to both users and those for whom they are used. In 1991, 80% of those with paid work in health care were women and 16% of employed women in Canada worked in the health care sector (Blythe, 1995). Women also make up the majority of unpaid care providers in the home and community. Although women are so deeply involved in health care, they lack a voice with respect to technology. Women need to be central to decisions about what technology is to be developed, about how it is developed and used, and about who uses it where. Nurses, specifically, need to be increasingly involved in technology selection.

What impact may technology have on health care providers?

- can facilitate the rapid recording and retrieval of patient records
- technology constantly forces nurses to make choices between alternatives and structures the understanding of patient care
- individual characteristics of patient and caregiver are reduced if not eliminated by standardization
- turnover with short patient stays facilitated. Often the education and health promotion once provided in hospital cannot be provided in the time available. Responsibility fall on the caregiver at home.
- reliance on equipment and the formulas of new technology means that nurses have less time to do the caring work that would eliminate hospital risks
- computer technology can be useful for long-term care delivery provision of services to clients in their homes, without as much need for home visits

What is a technology assessment and what should it include?

- The Swedish Council of Technology Assessment in Health Care define technology assessment as “the complete, scientifically-based assessment of a technology’s benefit, safety and social ethical and economic consequences”. The Canadian Hospital Association in a 1986 policy statement that “the agenda for technology assessment could focus initially on promoting cost containment and a rational approach to the management of technology by cleaning up wasteful, unnecessary and/or marginally useful tests and procedures.”
- It should include an assessment of:

1. The clinical impact of the intervention including need, safety, effectiveness and efficacy
2. The magnitude of the clinical impact and social impact of the intervention
3. The clinical impact of the intervention, weighed against its costs

What are the issues surrounding technology acquisition?

	<i>Issues</i>
<i>A) Implementation</i>	<ul style="list-style-type: none"> • there are concerns about the speed at which new technologies should be diffused and implemented. They should not be diffused at least until its efficacy and safety have been proven. Most medical interventions still fall into that middle ground where evaluation is incomplete. • new medical technologies are often diffused before even their effectiveness, let alone cost-effectiveness is fully assessed. Once a technology has been widely diffused, it is very difficult, both ethically and methodologically, to attempt to go backward in time and subject it to rigorous evaluation. • conversely, quality of health care and efficiency of health services can be compromised if effective technologies diffuse too slowly.
<i>B) Funding</i>	<ul style="list-style-type: none"> • government policy favours health promotion and community-based services over primary reliance on expensive institutions, but hospitals still experience pressure to acquire new technology. • due to limited government budgets, hospitals are now looking for alternative funding. Some technology may therefore be acquired based more on the ability to attract funds than on public policy.
<i>C) Decision-making</i>	<ul style="list-style-type: none"> • most hospitals involved medical and nursing staff largely in an advisory capacity or as part of the committee structure. • to ensure effective technology planning, Gordon and Tan (1992) stress that interdisciplinary support and representation are necessary, including technical experts, such as biomedical and clinical engineers. • technical planning is most effective as an internal process, taking into consideration strategic plans, quality assurance and hospital dynamics. • decisions should be based on evidence of effectiveness and efficacy, community need, safety, economics and impact on clients and the rest of the institution. • technology selection should be carried out by both its users and its recipients - the majority of both are women. However, recipients are rarely involved in selection and users who make decisions about technology are mainly men. • it is important to educate women about technology. It has been argued that if women acquired greater familiarity and comfort with technology, they would be encouraged to enter technological and scientific fields and increase their voice in decision-making
<i>D) Communication</i>	<ul style="list-style-type: none"> • opportunities need to be provided to students and health care workers to learn about alliance building and networking, resource and expertise sharing • communication, visibility and proactivity need to be improved in the health care sector • a multidisciplinary network needs to be developed for the exchange of ideas related to women and health care technology and the development of innovative partnerships (Deber, Wiktorowicz, Leatt and Champagne, 1994)