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Implementation of an Ultra-short-stay Program After Breast Cancer Surgery in Four Hospitals: Perceived Barriers and Facilitators

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Abstract
Background The objective of this study was to identify barriers and facilitators that professionals see when implementing a program incorporating ultra-short hospital admission in the treatment of breast cancer. Such an intervention is an essential step when designing a strategy for implementation of a care program that is different from established daily routines.

Methods In a prospective quasi-experimental study qualitative data were collected from four hospitals in the Netherlands between January 2005 and July 2006. Potential barriers and facilitators for successful implementation were extracted from detailed notes of all contacts between the researchers and each participating hospital. Subsequently, these items were categorized according to themes.
Results Over 40 items were identified. Most barriers concerned organizational and program-related aspects, whereas the most common facilitators addressed organizational issues. Six of the 29 study recommendations were perceived as impeding or facilitating. Thirty of the 40 barriers were mentioned in one hospital only. Several key factors were found that determine the success of implementation of an ultrashort-stay program. Provision of care in the home setting should be assured. Policy makers and insurance companies should acknowledge that multidisciplinary care teams and teams integrating primary and secondary care fulfill important roles in delivering continuity of care. Specific strategies should be set out to convince everybody in the organization about the new ideas, particularly the minority of people who do not agree with the plans.
Conclusions A set of barriers and facilitators for implementation of the program was described that may be used by any professional preparing to perform breast cancer surgery in an ultrashort–stay facility. The systematic approach that led to this set may be used by any healthcare professional concerned with implementation and consolidation of innovative programs in healthcare in order to enhance the effectiveness of the chosen strategy.

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Early discharge after breast cancer surgery is increasingly advocated because of the potential to reduce wound pain [1], facilitate shoulder movement [1], and improve

informal support [2] without affecting the number of complications or the psychosocial situation of the patient [1, 3–5]. In addition, early discharge has the potential to reduce healthcare costs without affecting the quality of the care process [2, 6–8], and decrease costs resulting from loss of work [9]. In 2002, a short-stay program for breast cancer surgery was successfully implemented at the University Hospital Maastricht (uhM). Subsequently, a detailed guideline for an ultra-short-stay (day care or 24 h of hospital admission) program for breast cancer surgery patients was defined, partly based on existing guidelines [10–15]. In contrast to several other studies [16, 17], type of surgery was not a selection criterion for participation in the program.

Publications on breast surgery in a short-stay setting are numerous. However, no study reports results of provision of surgical care to patients of all ages undergoing all types of surgical interventions, including major ablative surgical resections. Neither did we find any study in which emphasis was placed on multi-institutional implementation of a multifaceted program following breast cancer surgery, incorporating, for example, important roles for home care nursing and informal caregivers, and a drug protocol tailor-made for short-stay admission purposes.

While acknowledging that healthcare professionals tend to stick to their routines [18] and that hospitals differ in the way they are organized [19, 20], the uhM developed a strategy for large-scale implementation of the short-stay program in 2004.

During any implementation process, different impeding and stimulating factors may play a role in each step in the process and in the success of the implementation. Insight into these "barriers" and "facilitators" is essential to adequately design implementation strategies for different settings and gain information on the kind of activities to be developed [21]. Professionals should not only focus on factors that arise during actual implementation but systematically explore and try to resolve those (often unexpected) barriers and facilitators that are perceived by the target group before the true start of the implementation. Thus, the risk can be reduced of interventions being ineffective or of implementation of activities focusing on aspects of patient care that are not crucial. We did not come across a study in which attention was paid to impeding and stimulating factors for adoption of a comprehensive care program.

Although ultra-short-stay admission may have been adopted in different ways in different settings, this does not imply that all breast cancer patients in these settings are actually treated in ultra-short-stay settings. Compliance numbers concerning ultra-short-stay admission differ between institutions, countries, or even continents. Yet, most of these results can be improved or optimized if healthcare professionals pay careful attention to factors that may impede or stimulate the success rate of an ultra-short-stay program. This includes healthcare professionals who have already implemented short stay in their settings, as well as those working in an environment where the socioeconomic situation allows only for improvement of certain aspects of such a program.

To our knowledge, no previous study has entailed implementation of such a multifaceted program in four hospitals at the same time, nor have barriers and facilitators for implementation of an ultra-short-stay program after breast cancer surgery been explored systematically. The aim of this study was to systematically describe the identification of a set of potential barriers and facilitators for implementation of an ultra-short-stay program after breast cancer surgery. This set should be considered by healthcare professionals in preparing for implementation of such a program. In addition, the methods and results described in this article may also serve as an example when implementing changes in healthcare organizations.

Materials and methods

Study design and setting

This quasi-experimental study was part of a large prospective study concerning the implementation of ultra-short-stay program after breast cancer surgery in four hospitals in the Netherlands that were known to be interested [22], and was performed between January 2005 and July 2006, before the actual implementation of the ultra-short-stay program. Participants in the hospitals were healthcare professionals associated with breast cancer care. Approval of this study was obtained from the Medical Ethical Committees of all participating hospitals.

Procedures and data collection

Qualitative data regarding facilitating and impeding factors for implementation of the program were derived from extensive notes of all contacts with each hospital: audiotaped project-group meetings, interviews during outreach visits (MdK), telephone conferences, and e-mails. The minutes were taken by one of the authors (MdK).

All stakeholders of the implementation program were present at the project-group sessions: surgeons, breast nurses, ward nurses, managers, anesthesiologists, anesthesiology nurses, and sometimes a nurse of the home care company, a representative of a patient support group, or a nurse responsible for communication with the home care nursing team. Project-group meetings were tape-recorded,

minutes were taken by one of the authors (MdK), and approved by the participants.

Outreach visits to the different hospitals were performed on a regular basis by a physician (MdK) and a nurse to prepare each hospital for the actual change through the provision of information, instruction and support, and to provide them with feedback on current practice. During these outreach visits, semistructured interviews with one or more participants were arranged at their convenience (before or after their shifts or at other times). The interviews lasted 10-90 minutes. The focus of the interviews was the professionals' perceptions about the barriers and facilitators for the implementation of the guideline for the ultrashort-stay program.

The number of e-mails and telephone calls between the researchers and healthcare providers at the hospitals was not registered. Only reports that contained possible barriers and facilitators were archived.

Analysis

Minutes, notes, reports, and e-mails were analyzed by two of the authors (MdK, TvdW). Potential barriers and facilitators for successful implementation of the ultrashort-stay program were extracted and arranged according to the following themes: program, care provider, patient, colleagues, organization, and financial resources and reimbursement. Frameworks for this categorization had been suggested by Grol [21]and Cabana [21, 23]. Differences in opinion were solved through consensus. Subsequently, the set of barriers and facilitators was shown to the participants. Based on their comments, the set was adapted and the definitive set was approved by the participants.

Results

The patient outcome measures "quality of care" and "quality of life" were essential characteristics of the study according to several care providers, and made them want to participate in the study. Other reasons for participation were related to positive publicity, acknowledgments in scientific papers, curiosity, personal challenges, possibility to take part in important decisions, and previous positive experiences with similar studies.

Nearly 15 outreach visits per hospital (mean = 14.8, SD = 3.2) were conducted from January 2005 until July 2006. On average, four project-group meetings (SD = 2.0) were held per hospital from February 2006 until July 2006 (Table 1). In one hospital, professionals were not prepared to participate in more than one meeting because they did not perceive any gap between actual care in their hospital and the short-stay program. All participants actually approved the set of barriers and facilitators as it is shown in this article.

Table 1 Methods and numbers of data collecting moments in the different hospitals[a]

Hospital number	No. monthly meetings[b]	No. outreach visits[b]	No. barriers and facilitators
1	5	18	18
2	5	17	17
3	5	12	13
4	1	12	14

[a] For confidentiality purposes, the names of the hospitals are not shown

[b] December 2005 through June 2006

Well-known general resistance to change was observed, such as reluctance (especially by the long-stay wards) to give up the well-established current practice. For 6 of the 29 recommendations in the guideline of the program, impeding and facilitating factors were perceived to influence adherence to the guideline (Table 2). Barriers and facilitators related to other aspects are shown in Tables 3 and 4. Most barriers and facilitators ($n = 30$) seemed rather specific because they were mentioned in one hospital only. One barrier was specifically related to a hospital's organization; healthcare workers at the university hospital felt that the more "complex" disease presentations and corresponding treatments at their hospital, compared with those at the other participating hospitals, were related to longer durations of stay.

Barriers and facilitators related to the program (Table 2)

Many professionals had a negative attitude toward the recommendations regarding planning of surgeries, treatment of nausea and pain, and postoperative visits by healthcare workers. Moreover, negative attitudes toward home care seemed to play an important role; some ward nurses found it difficult to accept that wound and psychological care could also be provided by home care nurses or given by the patient's proxy rather than solely by the ward nurses themselves.

Five program-related aspects were identified as facilitators: the lymphoscintigraphy for the sentinel node procedure performed in an ambulatory setting, the planning of breast cancer surgeries early in the morning, pre- and postoperative medications aimed at ultra-short stay, and drain removal before discharge.

Table 2 Perceived barriers and facilitators to implementation of ultra-short-stay admission for breast cancer surgery related to the recommendations of the program

	Perceived in *N* hospitals
Recommendation: "Optimal use of staff, occupation of beds, and operation rooms for breast cancer surgery in day care"	
Barriers	
Surgeon's preference for "major" nonbreast surgery before breast surgery which may result in a low % of day care admission	1
Goal is to perform as much as we can in 24-h admission	1
Facilitators	
Possibility to perform first part of SNP or wire localization at the morning of surgery	1
Reservation of two "places" for SNP breast cancer patient planned for day care surgery	1
Intention to perform breast surgery early in the morning which may increase % of day care surgery	2
Recommendation: "Breast nurse informs the patient about the need for informal care in the home situation"	
Barrier	
Doubt whether family members have enough time to take care of the patient	1
Recommendation: "Removal of drain at discharge"	
Facilitator	
Intention to remove the drain before discharge	2
Recommendation: "Decisions on patient discharge are based on clear guidelines"	
Barriers	
Postoperative visits by specialist only with admissions periods longer than 24 h	1
Postoperative visits by breast nurse only with admissions periods longer than 24 h	1
Recommendation: "The prescription of opiates is minimized"	
Barrier	
Opiates for postoperative pain are often provided which may result in a low % of day care surgery (some hospitals: contraindication for day care surgery)	3
Facilitator	
Nonopiates used as pain medication	1
Recommendation: "Specialized home care[a] for patients in the period following surgery is facilitated"	
Barriers	
Home care nursing offered only to total amputations and axillary node clearance patients	1
Indication for home care nursing cannot be given anymore before surgery (before: yes)	1
Difficult to get an indication (=fee) for psychosocial support from home care nursing	1

Day care admission = admission and discharge at the same day; 24-h admission = admission and discharge within 24 h after surgery and/or before noon the day after surgery; clinical admission = all other admissions; SNP = sentinel node procedure

[a] Noncomplicated wound and/or drain care and psychosocial support and education. This care is provided by a nurse who finished the training for breast nurse or who followed clinical lectures on breast cancer care

Barriers and facilitators related to the individual care provider, patient, or colleague (Table 3)

Some professionals were concerned about the acceptability of the program for the patients. On the other hand, eagerness to participate in innovative programs in healthcare such as short-stay surgery or cooperation between intramural and extramural care professionals increased their motivation for change.

Patients' income-dependent out-of-pocket costs for home care and their foreseen unwillingness to visit the hospital for wound care were the only perceived barriers from patients. Informing patients before surgery about the effects of opiates on the possibility of day care surgery and providing the ward with signed prescriptions for medications to prevent patients from waiting for physicians to prescribe the medications were viewed as important facilitating factors.

Previous poor experience with home care resulting in lack of trust in the home care company and lack of communication between colleagues were barriers that were perceived on the level of colleagues.

Table 3 Perceived barriers and facilitators to implementation of ultra-short-stay admission for breast cancer surgery related to the individual care provider's own motivation for change, the care provider's view of the patient's motivation, or the care provider's view of colleague(s)

	Perceived in *N* hospitals
Barriers	
Unwillingness to discharge patients on the day of surgery	2
Patients' unwillingness to visit the hospital for wound care	1
Patients' unwillingness to pay an income-dependent fee for home care nursing	2
Insufficient communication about admission plans for patients between anesthesiologists and surgeons	1
Hesitation about home care due to previous poor experiences	1
Facilitators	
Participation in national trends (decrease admission time, cost effectiveness, effective use of hospital's capacity)	3
Opportunity to start transmural home care	2
Inform patients preoperatively about opiates and their contraindication for day care surgery	1
Patients expected only 45 min before surgery so no one is admitted the day before surgery	1
Signed prescriptions for recipes needed at discharge available	3

Table 4 Perceived barriers and facilitators to implementation of ultra-short-stay admission for breast cancer surgery related to the organization and finances

	Perceived in *N* hospitals
Barriers	
Selection of specific patients for difficult breast cancer surgery leads to increase in admission time	1
Short stay and long stay combined into one ward	1
Short stay open until 2000 h and discharge until 2000 h	1
<5–10% patients admitted at long-stay departments (only) in case of shortage in day care capacity	2
ICT system does not allow correspondence of information between caregivers about patients	1
Inconsistent use of written and digital notes which increases the chance of incomplete files	1
New building without day care operation room which might cause a low % of day care surgery (if other surgeries take longer than planned)	1
Fear of the hospital staff to be responsible for the work by the home care nurses	1
Surgeons expect less income with day care as compared to the clinical setting	1
The hospital expects less income with day care as compared to the clinical setting	1
Facilitators	
Patients can be admitted in the morning (unless blood parameters needed)	1
Recovery and short stay combined into one ward	1
Breast cancer patients will be admitted on one day care ward instead of different wards	1
Short stay open 24 h/day	1
Discharge from short stay possible until 2100 h	2
Home care nurses receive clinical lectures from hospital nurses	2
Decrease in postoperative checks the day after surgery, which makes day care more acceptable	1
Surgeons: "hospital payment is independent of the admission period"	1
Increase in working hours for breast nurse is cost effective	2

Barriers and facilitators related to organization and finances (Table 4)

Of the organization-related barriers, the majority described issues related to the type of ward at which the patients would be located; the combination of "short-stay patients" and "long-stay patients" in one ward was perceived as a problem for both departments. Therefore, caregivers at those different departments aimed at different admission periods for their patients, which would be confusing for patients. Other barriers were caused by the use of different communication aids that caused confusion about the

patients' treatment plans (e.g., an ICT system that did not allow nurses and anesthesiologists to look at the surgeon's considerations for a certain admission period). Examples of perceived facilitators related to the organization were not admitting patients before the morning of surgery, placement of all breast cancer patients in one ward, all-week possibility of discharge, and abolition of a time-consuming blood check that had not been proven to be cost effective.

Financial system barriers involved the surgeons' fear of loss of income for day care surgery compared to standard admission, and the insurance declaration system in the Netherlands that does not induce healthcare workers to promote ultrashort stay. In contrast, other participants identified two facilitators on the financial level. First, they had perceived an intention of insurance companies to pay hospitals for breast cancer surgery independent of the admission time. Second, the payment of extra hours of breast nurse care was perceived to be cost-effective; although patients are offered more consultations after ultra-short-stay surgery, which leads to an increase in consultation costs, admission costs decrease at a relatively higher rate.

Discussion

In this article we have outlined a set of relevant factors that potentially influence the success and ease of the implementation of an ultra-short-stay program for breast cancer surgery and its consolidation. Program-, care provider-, patient-, and system-related factors were perceived to play a role in supporting and impeding the implementation of the ultra-short-stay program after breast cancer surgery.

Surgeons and breast nurses were the stakeholders who perceived the most barriers. This may be explained by the coordinating role that these two types of professionals have in the current organization of breast cancer care. A striking outcome, in our opinion, is that (together with the surgeons) the ward nurses perceived the most facilitating factors for the program; we expected the nurses to be most reluctant about the introduction of a program that means shorter and less intensive contact with the patients. The nurses admitted regreting the decrease in time they could spend with the patients but anticipated other challenges in their work because of the shift from traditional to ultra-short-stay admission.

All stakeholders expected more or about as many facilitators as barriers, except for some of the participating anesthesiologists, who expected mostly barriers. Extra attention should be paid to their opinions about the overall program because negative attitudes of only one or a few people can be decisive in the (un)successful process of implementation.

Our study confirmed the importance of several factors as published by others such as drain removal before discharge [24, 25] and support at home [1, 26]. However, it also provides additional factors that, to our knowledge, have not been described before in the literature.

Key barriers

Barriers concerning the use of home care are important to consider for they may influence the success of the program if a hospital decides to involve home care nursing for wound care during the first days following surgery. In our opinion, wound care should be given to the patient within the first 48 h after surgery, either by the home care team or by the breast nurse. If expert wound care cannot be guaranteed, professionals should strongly consider 24-h admission for breast cancer patients who could otherwise be discharged. Depending on the patient's wishes, wound care given by home care nurses could be followed by extra wound care visits to the breast nurses. Hospital professionals and home care institutions should reach clear agreements on expectations, responsibilities, and financing of the care provided to this group of patients. Moreover, policy makers and insurance companies should acknowledge the supplementary role multidisciplinary and multisetting (integrating primary and secondary care) care teams can fulfill in the provision of continuity of care. However, the current payment structure does not encourage this change at all, at least not in the Netherlands. On the contrary, it even discourages cooperation between different settings.

Second, communication on all levels of the organization proved to be crucial for successful implementation, as shown by other studies [27, 28]. This study confirms that communication needs to be streamlined on all healthcare levels, including communication between leaders from different hospitals. A multidisciplinary meeting ensures that different specialists become acquainted with and can discuss each other's plans with patients on different aspects such as type of admission and type of treatment.

Finally, despite decisions on the hospital management level aimed at decreasing the number of written notes and increasing the use of one standard electronic patient record, management teams should consider that not all professionals are willing to give up their trusted paper notes. They should use a strategy to motivate these people to act according to newly implemented rules. If this problem is not solved, it will result in professionals who are misinformed by colleagues about what will happen to patients, which unnecessarily leads to a lower standard of quality of care than could be achieved.

Strengths and weaknesses

Data collection was generally based on high contact frequency between the uhM researchers and the hospitals. Furthermore, we covered different types of surgical departments and provided member checks on the final results. Therefore, we think that very few barriers and facilitators within the participating hospitals remained unidentified. Because our primary goal was to identify facilitators and barriers rather than to quantify relative importance, we do not think that the qualitative design of the study limits our ability to draw conclusions on the topic of barriers and facilitators for implementation of the program.

Although this study was performed in one country only, we believe the results are useful for those countries with comparable organizations of breast cancer care (e.g., organizations where the breast nurse plays a central role in the care process).

Conclusions

We have described a set of barriers and facilitators that may influence the effectiveness of the implementation of a program of ultra-short stay after breast cancer surgery. This set can be used by any healthcare professional who intends to use ultra-short stay after breast cancer surgery in order to aid a swift and successful implementation of such a program. It can also be used by any healthcare professional who has already adopted breast cancer care in an ultra-short-stay setting and aims to improve the compliance numbers and support consolidation of the adopted program. In addition, we think that the methods of data collection and (several of) the results can be helpful and serve as an example for those healthcare professionals who are planning to implement changes in their healthcare system.

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