

# Stepwise implementation of a specialist breast nurse position and clinical pathway: impact on patient satisfaction

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## Abstract

### Background

Key success factors for significantly improving patient satisfaction on breast cancer care are not well known. Data obtained over a period of 6 years in a breast cancer clinic provide a portrait of the evolution of patient satisfaction on quality of care.

### Methods

We measured 19 patient satisfaction items and 6 groups of 60 consecutive Primary Operable Breast Cancer patients filled in the (validated) questionnaire. A first group prior and a second group after the implementation of a clinical pathway, a third group after the introduction of a breast cancer nurse following patients systematically only postoperatively, a fourth group having an additional consultation of the breast nurse in the diagnostic and preoperative phase and a fifth and sixth group after implementing education sessions for hospital staff and the Eusoma and other national guidelines.

### Results

We found that the successive modifications of the care process resulted in an improvement of patient satisfaction for all items and for 16 of the 19 items these improvements were significant. The number of items for which dissatisfaction was higher than 5% diminished from 18 to 3 of the 19 items (group 6 versus group 1).

### Conclusion

Significant improvements were only achieved by combining the implementation of a clinical pathway, a specialist breast nurse, education sessions and Eusoma and national guidelines. In particular, the role of the specialist breast cancer nurse was found to be of major importance to coordinate the care process and guide patients through the pre- and postoperative phase of their treatment.

## Summary statement

### What is already known about this topic

- Breast cancer patients and their family often suffer from psychological distress, have social problems and substantial needs for information.
- A specialist breast nurse improves the outcomes for women by providing information and support which promote continuity of care, improve their illness experience and quality of life.

### What this paper adds

- A measurement of patient satisfaction over a 6 year period after each phase in the stepwise implementation of a clinical pathway, specialist breast nurse position, education sessions and Emma guidelines.
- In-depth analysis of impact of each modification to the care process on patient satisfaction, which revealed that improvements were only made after implementation of the specialist breast nurse position.

#### **Implication for practice and/or policy**

- Hospitals focusing on improving patient satisfaction should implement a specialist breast nurse position in combination with a clinical pathway and education sessions for nursing staff.
- The specialist breast nurse should play a central coordinating role in the cancer care process.
- The specialist breast nurse's main tasks should be providing information and emotional support to patients and family and providing information about the patients to other health care providers.

**Keywords:** breast cancer care, specialist breast nurse, patient satisfaction,

## **1 Introduction**

Breast cancer is the most frequently occurring form of cancer amongst women (WHO 2005). The incidence is estimated annually at 1,151,289 new cases (2002) with 410,712 patients dying from the disease each year (Parkin 2005). Several studies have shown that breast cancer and its treatment often lead to psychological distress and social problems (Morris 1983, Knobf 1986, Schag et al. 1993, Schover 1991). Dealing with the many challenges relating to a diagnosis of breast cancer, such as lengthy treatments and trying to combine recovery with family and work commitments, can have a significant and negative impact on women (Fallowfield 2002, Schultz 2005, Spagnola 2003). Moreover, the effects on family members may decrease their ability to emotionally support breast cancer patients (Lewis 1990, Hilton 1993). Research has shown that women with breast cancer have unmet needs for information and support (Suominen et al. 1994, Rees et al. 2000). Studies by Maguire et al. (1983), Clacey et al. (1988) and McArdle et al (1996) showed that a Specialist Breast Nurse (SBN) can have a positive impact on the continuity and women's understanding of care. They reduce psychological morbidity and anxiety and increase the identification of women's depression (National Breast 2003). The National Breast Cancer Centre (NBCC) report defines the SBN as a registered nurse who applies advanced knowledge of the health needs, preferences and circumstances of women with breast cancer to optimize the individual's health and well-being at various phases across the continuum of care including diagnosis, treatment, rehabilitation, follow-up and palliative care (National Breast 2005).

The care of breast cancer patients is increasingly organized within the framework of multidisciplinary breast cancer clinics (Calman et al. 1995). According to the European Society of Mastology (EUSOMA) position papers on key mandatory requirements for breast cancer clinics, the care they provide should include Specialist Breast Care Nurses (EUSOMA 2006). The SBN works collaboratively with the treatment team to ensure that women are fully informed, to coordinate care, to offer counseling and support, to facilitate liaison with and referral to other health professionals and to act as a resource for other members of the treatment team (National Breast 2003). Most evidence about the benefit of SBN's comes from the United Kingdom, Australia and Canada.

Recently, the Australian National Breast Cancer Centre developed an evidence based SBN model of care for Australian Hospitals (National Breast 2005). This model includes a clinical pathway in which women were offered five scheduled consultations at key treatment phases: diagnosis, preoperative, postoperative and two follow-up phases across a 12 week period from diagnosis.

According to Cruickshank et al. (2009), further research is required before the impact of SBNs on aspects of quality of life for women with breast cancer can be known. When we reviewed the existing body of literature, we found that the impact of implementing the SBN role and the clinical pathway on patient satisfaction had never been thoroughly investigated. This is an important gap in the research literature given the increasing number of patients being treated by SBN's. For a long period of time,

the role of the SBN did not receive much attention in Belgium. The Sint-Augustinus hospital in Antwerp was pioneering for introducing the SBN role based on the Australian model in Belgium.

## **2 Background**

### **2.1 Clinical pathway**

Clinical pathways are structured multidisciplinary care plans that detail the essential steps in the care of patients with a specific clinical problem and describe the expected progress of the patient. They facilitate the introduction of clinical guidelines into clinical practice. They are also a means of improving systematic collection of clinical data for audit and promoting change in practice (Campbell et al. 1998). The hospital monitors a number of Key Performance Indicators (KPIs) to measure the effectiveness of the provided care. One of these KPIs is patient satisfaction. Patient satisfaction is seen by the hospital as being of major importance. A couple of years ago, the management set the goal to turn its breast cancer unit into one of the leading centers of the region and to make patient satisfaction into one of its key competitive advantages. Patient satisfaction on the provided care was thoroughly measured and the results were continuously analyzed to discover potential avenues for further improvement.

### **2.2 Information and support needs of women with breast cancer**

Women with breast cancer (Boman et al. 1997, Degner et al. 1997) and their family members (Hilton 1993, Carlsson et al. 1996) have substantial needs for information (Rees et al. 2000). Adequate information allows the patient to make informed decisions (Cawley et al. 1990, Cooley et al. 1995), can aid coping (Cameron et al. 1994, Shaw et al. 1994), and lower anxiety and distress (Meredith et al. 1996, Michie et al. 1996). There have been multiple studies that analyzed the information needs of women with breast cancer and their family members around diagnosis (Northouse et al. 1997, Kilpatrick et al. 1998), during treatment (Galloway et al. 1997, Northouse 1989) and after diagnosis and therapy (Degner et al. 1997, Luker et al. 1996).

Luker et al. (1996) and Degner et al. (1997) found that the information needs of women with breast cancer are not static but change over time. Around diagnosis, women specifically need information about probability of cure, treatment options and the stage of disease (Bilodeau & Degner 1996, Shaw et al. 1994). During treatment, they mostly want information about therapy (Harrison-Woermke & Graydon 1993, Galloway et al. 1997). They also want information about the disease, investigate tests and recurrence at this time.

Some studies also investigated the information needs of family members at various points of time (Chalmers & Thomson 1996, Chalmers et al. 1996). They found that family members also want information regarding the disease, diagnosis, prognosis, treatments, expected course of recovery and prevention of recurrence (Hilton 1993, Kilpatrick et al. 1998).

### **2.3 Problems with information and support provision by Health Care Professionals**

In the literature, the importance of the role of Health Care Professionals (HCPs) in providing information to women with breast cancer has often been highlighted. Fridfinnsdottir (1997) found that information support by HCPs is essential during the diagnostic phase. Bilodeau & Degner (1996) found that newly diagnosed breast cancer patients preferred verbal information from HCPs.

Unfortunately, many women are not satisfied about the information received from HCPs (Cawley et al. 1990, Palsson & Norberg 1995). They complained receiving “double messages” from physicians, insufficient and inadequate information regarding treatment and doctors hurrying their consultations too much (Palsson & Norberg 1995). Women were also found to be unsatisfied about the preoperative information they received (Cawley et al. 1990).

Cancer care is increasingly being organized around multidisciplinary teams (Calman & Hine 1995). Van Wersch et al. (1997) analyzed a multidisciplinary breast cancer care approach and found that the multidisciplinary care received by women led to problems and gaps in the continuity of information provided by HCPs. As a result, many patients received contradictory information because different professionals did not know what other team members were doing to, or telling the patients. A study by Lerman et al. (1993) showed that 84% of women with breast cancer reported difficulties communicating with their HCPs. These problems included difficulties in understanding physicians, difficulties in expressing feelings, difficulties asking physicians questions and desire for more control. These communication problems were associated with increased anxiety, depression, anger and confusion. Moreover, partners complained about HCPs ignoring their information needs (Bilodeau & Degner 1996) and having little contact with nursing and staff (Northouse 1988).

#### **2.4 Role of the specialist breast care nurse**

Several researchers have discussed the important role of nurses as information providers (Poole 1996, Galloway et al. 1997). Hardie et al. (2010) compared patient experiences of the breast cancer nursing service before and after a clinical nurse specialist was appointed. The evaluation showed that the clinical nurse specialist improved respondent's experience and satisfaction with the cancer service. According to Poole, breast cancer patients should have access to specialist breast nurses who are trained to give information and psychological support. Research has shown that the SBN helps in improving the outcomes for women by providing information and support which promote continuity of care (Redman 2003, Yates 2007). Women themselves were positive about the outcomes of their interactions with the SBN. Gray (2002) showed that women found supportive care by the SBN to be essential in improving their illness experience and quality of life. Likewise, in interviews with women with breast cancer conducted by Halkett (2006), interviewees repeatedly highlighted the importance of the role of the SBN in providing support through communication, establishing rapport and an awareness of their needs. National and clinical guidelines recommend multidisciplinary teams as the best way to manage breast cancer and maximize outcomes (Grunfeld 2005, NICE 2002). The effectiveness of these teams comes from common goals and understanding among members as to the impact of the illness on each woman, recognizing her circumstances, feelings, concerns and preferences for the treatment and the contribution each can make (Mileshkin 2006). SBNs are a regular feature of multidisciplinary breast cancer care teams (Amir 2004, SIGN 2005) and have been shown to impact positively on the overall quality of clinical care provided to women and on the work of their teams and medical colleagues (Haward 2003). The recent study of Clark et al. (2009) showed that SBN's were able to provide an equal level of support to depressed patients as to non-depressed patients whereas depressed patients felt less supported by surgeons and ward nurses than did non-depressed patients.

In the United Kingdom (UK), the breast care nurse has been an established specialist nurse position in the health care system since the mid 1970s (Tait 1995). In the UK, this role mainly focused on providing psychosocial support and advice to the patient and her family during the diagnosis and initial treatment phase of breast cancer (Richards et al 1994, Poole 1996). Poole adds that this nurse also has an important role to play in health promotion by generating public awareness, educating patients and nurses about "breast awareness" and providing an accessible service to encourage women with breast cancer symptoms to seek advice, investigation and assistance. A third aspect of the role according to Poole (1996) is the provision of comprehensive prosthesis fitting service to patients with breast cancer who have undergone surgery. The study conducted by Tait (1995) describes how nurses view the role of the breast nurse in the UK. It turned out that the characteristics of the breast nurse's role varied significantly across the sample of 108 nurses. One of the most interesting conclusions of Tait's study was that the role of breast care nurse was still relatively new and developing over time with significant variations both in how it is enacted and the level of expertise evident amongst the nurses. Both Poole (1995) and Tait (1995) highlighted the difficulties in describing the role of the breast care nurse.

Over the last decade, the number of specialist breast nurse positions has increased significantly in Australia. White et al. (1998) was the first published research paper that describes the role of the breast care nurse in an Australian context. Questionnaires were distributed to 16 expert nurses. Again, the results revealed that these nurses, whilst specialists in breast care, have extensive variation in the

enactment of the role. Eleven role elements were described as significant, although to varying degrees: supporter, educator, counselor, adviser, team member, resource person, caregiver, public advocate, manager and researcher. The major focus of their role is the psychosocial support of patients during their breast cancer journey. Recently Jones et al. (2010) confirmed through interviews with SBN's and HCP's that provision of information and support to people with breast cancer and their family are the core of the role. These findings are in line with those reported in the literature (Tait 1995, Neale 1997). The role is "holistic" in that the breast care nurse also provides physical care for patients. Yates (2007) identified five main domains of competency for SBNs. The advanced level of SBN knowledge and skills is reflected in five core domains of practice and the SBN competency standards have been developed around these five core domains. The five domains of practice are as follows:

- Supportive care: This domain comprises competency standards that reflect the ability of the SBN to identify multiple physical, psychological, social, sexual and spiritual needs of clients throughout the continuum of breast cancer care and to implement evidence based supportive care interventions in a flexible and responsive manner, in the context of a collaborative multidisciplinary approach to care, to achieve optimal health outcomes for clients with breast cancer.
- Collaborative care: This domain comprises competencies reflecting the ability of the SBN to facilitate a collaborative approach to care planning, implementation and evaluation by ensuring the client and service providers are working effectively as a team and that those involved in a client's care have established secure and dependable relationships to meet client needs. These competencies include the recognition of the critical interdependence between the SBN role and other nurses and health professionals involved in a woman's care.
- Coordinated care: This domain incorporates competencies reflecting the ability of the SBN to facilitate a coordinated approach to care planning, implementation and evaluation by ensuring a comprehensive range of health and support services are delivered in a timely, flexible and efficient manner in response to client needs.
- Information provision and education: This domain incorporates competencies reflecting the ability of the SBN to provide comprehensive, specialized and individualized information to clients about the pathophysiology of breast cancer and its effects, treatment approaches, supportive care and self management strategies, using evidence based educational strategies that are consistent with individual clinical circumstances, preferences, information and self-care needs.
- Clinical leadership: This domain contains competencies reflecting the ability of the SBN to advance and improve breast cancer care through a range of clinical leadership and professional activities.

These competency standards are very similar to the ones defined by the Canadian Breast Cancer Initiative for the so-called Navigator role (Canadian Breast 2002). Various educational models and post-graduate programmes have evolved to prepare SBNs for their role (Eicher 2006, Cataliotti 2007, RCN 2007).

### **3 The study**

#### **3.1 Aim**

The aim of this study was to identify the key success factors for significantly improving patient satisfaction on breast cancer care. We describe a case study on the stepwise implementation of an evidence based clinical pathway and an evidence based specialist breast nurse model in a breast cancer clinic. We thoroughly measure, analyze and describe the evolution of patient satisfaction before, during and after the introduction of the clinical pathway, the SBN consultation during the postoperative phase, the SBN consultation during the preoperative phase, the education sessions for hospital staff and the EUSOMA and other national guidelines.

### **3.2 Participants**

The Sint-Augustinus hospital is located in Antwerp (Belgium) and has over 600 patient beds. The Oncology center treats about 2500 new cancer patients a year. The hospital is also part of the Iridium Cancer Network consisting of 6 hospitals in Antwerp. The Breast Cancer Clinic treats about 400 new patients with Primary Operable Breast cancer each year. In the past, the treatment of breast cancer and the collaboration between the different stakeholders of the care process happened on an ad hoc basis. In the year 2002, the clinical path POBC was introduced.

In this study, 6 groups of 60 consecutive POBC patients filled in the questionnaire. The first group did this prior to the implementation of the clinical path. The second group filled in the questionnaire one year after the introduction of the clinical path with scheduled consultation of a breast cancer specialist (from January 2003 onwards) in the postoperative and follow-up phase of treatment. The third group filled in the questionnaire after introducing a breast care nurse (from January 2005 onwards) following patients systematically only postoperatively in the same setting. The fourth group filled in the questionnaire (from January 2006 onwards) having additional consultations of the breast nurse in the diagnostic and preoperative phase. The fifth and sixth group did this after the implementation of the education sessions on breast cancer care for the hospital staff and Eusoma and national guidelines (from January 2007 and 2008 onwards).

The questionnaire was handed over to the patients by an independent person who was not involved with the care process of the patient. Patients received the questionnaire at the day of their admission from the hospital. Patients completed and posted the questionnaire anonymously.

### **3.3 Data collection: patient questionnaire**

During this study, patient satisfaction was measured using a previously validated questionnaire developed by the Belgian Dutch Clinical Pathway Network (BDCPN) on 19 different aspects of organization of care. These questions were scored from 1 to 4 (1: dissatisfied; 2: more or less dissatisfied; 3: more or less satisfied; 4: satisfied). Whether or not the patient would choose the same hospital the next time was asked in a final question (no 20). This questionnaire was derived, adapted and translated from English to Dutch from a larger questionnaire developed by Chou et al. (1999). We chose to use this questionnaire because most of the other available instruments only measure overall satisfaction in hospitals and cannot be used for measuring the impact of the organization of the care process.

### **3.4 Ethical considerations**

The evaluation of patient satisfaction is part of the continuous quality monitoring and improvement project of the hospital. Every patient consented to fill in the questionnaire and the questionnaire was filled out by the patient herself. The person handing over the questionnaire explicitly mentioned to the patient that the provided information will be processed anonymously. This person also explained to the patient that participation is voluntary and that she is free to withdraw at any time without giving a reason and that a decision to withdraw will not affect the care she receives.

### **3.5 Data analysis**

The data at hand was analyzed using Microsoft SPSS software. Procedures undertaken included descriptive and inferential statistics. Descriptive analysis focused on frequencies and measures of central tendency. Significance test were used to examine the relationships between high and low patient satisfaction in relation to, for example, the introduction of a SBN role. The conventional levels of significance ( $p < 0.01$ ,  $p < 0.05$  and  $p < 0.10$ ) were used.

## 4 Findings

The spider-web diagrams in Figures 1-5 represent the level of patient satisfaction on 19 different aspects of the provided care. The evolution of patient satisfaction is visualized over a 6-year period (from 2003 onwards till 2008). The diagram should be interpreted as follows: the level of satisfaction is highest (up to 100%) on the outer part of the web and lowest on the inner part of the web (50% and lower). Analyzing the web reveals that from 2003 until 2008 there has been a clear evolution towards the outer part of the web and thus towards a global higher level of satisfaction. The exact levels of patient satisfaction are displayed in Table 1. The p-values were obtained by comparing the values of 2008 with those obtained in 2003.

The introduction of the clinical pathway POBC significantly improved patient satisfaction on the waiting times during the hospital stay, the way hospital staff cared about the patient as a person and the initiatives to keep the family well informed and to involve them in the provided care ( $p < 0.01$  for group 2 versus group 1). Moreover, the amount of dissatisfaction higher than 5 % was reduced from 18/19 to 13/19 of the questioned items (group 2 versus group 1).

Introducing the breast care nurse in respectively the postoperative phase (group 3) and pre- and postoperative phase of the care process (group 4) further significantly improved patient satisfaction regarding uniformity of information from the care providers ( $p < 0.01$  for group 4 versus group 2), the information given to them about the disease, investigative tests and treatment ( $p < 0.05$  for group 4 versus group 2) and the preparation they received to care for themselves after discharge from the hospital ( $p < 0.05$  for group 4 versus group 2). Moreover the level of dissatisfaction was further reduced having 8/19 items in group 3 and only 3/19 items in group 4 ( $p < 0.05$  versus 1,2,3) scoring higher than 5 %.

After introducing the combination of the clinical pathway, the SBN consultation during the pre- and postoperative phase, the education sessions and guidelines patient satisfaction improved for all questioned items. For 16/19 items this improvement was significant (4 items with  $p < 0.01$ , 10 items with  $p < 0.05$  and 1 item with  $p < 0.10$  for group 6 versus group 1).

## 5 Discussion

In this section, we analyze the stepwise modifications of the care process and their impact on patient satisfaction in detail. We describe the aspects of the provided care for which patient satisfaction improved significantly over the past years and we perform an in-depth analysis of the reasons behind these improvements and the organizational changes that allowed them to happen. We expose the key success factors of this project and give advice for practitioners. The first modification of the process consisted of implementing a clinical pathway. We found 5 elements to be determining for the improvement of patient satisfaction:

1. Structuring the care process using a time-task matrix: In the past, the treatment of breast cancer and the collaboration between the different stakeholders of the care process happened on an ad hoc basis. The introduction of the pathway allowed for a better coordination and standardization of the process, resulting in a higher throughput time. This had a significant positive impact on patient satisfaction on item 8 and 10 of the questionnaire. The last several years, we see a decrease in satisfaction in waiting times, this is due to the increasing number of patients (245 in 2004 versus 381 in 2008) receiving surgery in the Breast Clinic of the hospital whereas the number of surgeons remained equal.
2. Clearly defining the goals of the care process, using amongst others discharge criteria: Discharge criteria are prerequisites that should be fulfilled before a patient can be discharged from the hospital or go to the next treatment phase. It is a validation mechanism to reassure that all the necessary care has been provided to the patient. This had a positive impact on items 13 and 14 of the questionnaire.
3. Developing a patient brochure to give patients and their relatives access to a clearly written summary of their expected care plan and progress over time: This brochure has a reinforcing effect for the orally provided information, which patients tend to forget easily because of the

- overwhelming breast cancer experience. This positively impacted items 6, 7 and 19 of the questionnaire.
4. Better communication between the different members of the multidisciplinary team: During implementation of the clinical pathway, multiple brainstorming sessions were organized during which different team members can learn from each other on how they provide information and what they expect from other team members. This improved alignment and unicity of information provision and beneficially influenced patient satisfaction on items 6, 7, 13 and 17.
  5. IT support and automation of the care process: The care trajectory of each patient is monitored electronically and automated requests are sent to the team members responsible for the aspects of care that should be provided. This had a positive impact on items 8 and 10 of the questionnaire.
  6. Information provision by Health Care Professionals: During the postoperative and follow-up phase of treatment a consultation with a breast cancer specialist, who provides information to the patient and her family on the surgery and pathology result, was introduced. After the postoperative multidisciplinary meeting the patient has a consultation with an oncologist who communicates the decision of this meeting to the patient and her partner and explains the adjuvant treatment options. The social service, physiotherapist, etc. also have scheduled consultations with the patient. This had a positive impact on satisfaction on items 12, 15 and 19 of the questionnaire.

The second modification of the process consisted of introducing the SBN during the postoperative phase and the third modification of the process consisted of introducing the SBN during the preoperative phase. These modifications had a massive impact on patient satisfaction. The following role elements were found to be crucial for these improvements:

1. Information role of the SBN: The informational role of the SBN was found to be the most contributing factor for improving patient satisfaction. During each consultation the SBN provides comprehensive and specialized oral and written information on the disease, treatment options and prognosis, tuned to the individual clinical and psychological needs and strength of the patient. The information needs of women with breast cancer are at its highest level at the moment of diagnosis. This consultation is handled with care and extensive information is provided. We found that the information role of the SBN during the postoperative consultation had a positive impact on patient satisfaction on items 5, 6 and 13 of the questionnaire. The introduction of the information role during the preoperative consultation (further) improved satisfaction on items 1, 2, 3, 4, 13 and 19.
2. Coordination role of the SBN: The SBN plans the treatments of the patients and makes agreements with the different team members to assure a swift succession of the surgery and investigative tests. The SBN is present from the moment of diagnosis till the moment of discharge from the hospital. She knows about potential problems that may occur and gives this information to the other team members, which allows them to better anticipate on these problems. This had a positive impact on satisfaction on items 8, 9, 11 and 17 of the questionnaire.
3. Support role of the SBN: During the consultations, the SBN provides psychological support to the patient. The patient can freely talk about insecurities, emotions, complaints, etc. The SBN supports her in solving her problems, in decision making, in communicating to her partner etc. This positively impacted items 15, 18 and 19 of the questionnaire.
4. Clinical leadership role of the SBN: The SBN promotes the unicity of the information provided by the team to the patient by amongst others giving the team members information about the care trajectory, treatment and appointments made with the patient. She also makes agreements with the team members on the provision of care. This had a positive impact on items 7, 16 and 17 of the questionnaire.
5. Continuity and collaborative role of the SBN: The SBN is present at the key moments of treatment. She is in the same room as the medical specialist while he examines the patient and she is aware of the information provided by the oncologist and other HCPs. Throughout the care trajectory the SBN becomes the central point of reference and reliable source of information for breast cancer patient. Every patient receives her phone number to obtain additional information if necessary. This positively influenced satisfaction on item 7 of the questionnaire.



After 2006, there was a decrease in patient satisfaction on self-care information received for after discharge (item 13), satisfaction on the unicity of information received from the caretakers (item 7) and satisfaction on the information provided on the disease (item 5). This was caused by a change in the composition of the multidisciplinary team and the lack of experience of these new people. After 2006, the following modifications were made that positively impacted patient satisfaction:

1. Implementation of information and education sessions about breast cancer care for the nurses and other members of the multidisciplinary teams: These education sessions on breast cancer were introduced because patient satisfaction on items 5, 7 and 13 were decreasing. This also had a positive impact on item 4 of the questionnaire.
2. EUSOMA and national guidelines: The care trajectory was modified to conform with the most recent guidelines on breast cancer care. These guidelines give amongst others constraints on the time allowed between successive care steps. To work in accordance with these guidelines, the care process was reorganized in a way that allowed for a more swift succession of care steps. A preoperative multidisciplinary meeting was introduced and the collaboration between the different team members was officialised and specific protocols were written. This had a positive impact on satisfaction on items 6, 9 and 12 of the questionnaire.
3. Improving psychosocial support: The number of psychologists was increased to improve the psychological support provided to each patient and her partner. This had a positive impact on satisfaction on items 14, 18 and 19 of the questionnaire.

## 6 Conclusion

Over the past six years, we have seen significant improvements in patient satisfaction on breast cancer care in our hospital. These improvements were the result of the stepwise modification of the care process. The implementation of a clinical pathway resulted in an improvement of patient satisfaction on many items but significant improvements were only achieved by combining the implementation of a clinical pathway with a specialist breast nurse position. In this project, the breast nurse not only provided information and support to the patients but also played a central role in monitoring and coordinating the care process. She continuously evaluated the provided care and analyzed the obtained data to find avenues for further improvements. In 2007, the breast unit of our hospital received the official homologation of breast cancer clinic by the Belgian government. In 2008, our breast unit was visited by a delegation of 4 professionals of EUSOMA and it received a positive evaluation for the multidisciplinary functioning of the team. This was an additional affirmation of the high quality of the provided care. We found that the stepwise care process improvements described in this paper, in combination with competent people and high-class infrastructure were the key enablers for the success of this project.

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Table 1. Evolution of patient satisfaction over a 6-year period. \* if  $p < 0.01$ , \*\* if  $p < 0.05$  and \*\*\* if  $p < 0.10$ .

How satisfied were you about the	2003	2004	2005	2006	2008	P-value
1. Information on how to prepare for your stay in the hospital	78.7	72.5	77.0	98.4	98.3	*
2. Information on the course of your stay from the moment of admission until the moment of discharge	85.2	85.0	86.7	93.4	96.7	**
3. Information on how to prepare for a test or a treatment	88.5	87.5	90.0	98.4	98.3	**
4. Explanation on the provided care before and during it was carried out	91.8	92.5	90.0	95.0	98.3	
5. Information on your disease	86.9	90.0	98.4	98.3	96.7	**
6. Information which you received concerning the possible assistance after your discharge	77.0	90.0	96.7	95.0	98.3	*
7. Uniformity of the information you received from the care providers	75.4	87.5	93.4	95.0	90.0	**
8. Smooth completion of your admission to the hospital	91.8	95.0	96.7	98.4	98.3	
9. Consecution of investigative tests, interventions and the general organization of care	91.8	92.5	93.4	98.4	100	**
10. Waiting times during your hospital stay	75.4	100	96.7	85.0	90.0	**
11. Complying of doctors and nurses with appointments during your stay	90.2	90.0	93.4	93.4	95.0	
12. Hospital staff caring about you as a person, in sense that you were not just part of their job	70.5	95.0	97.0	96.7	100	*
13. Preparation you received to care for yourself after the moment of discharge	80.3	90.0	97.0	100	91.7	***
14. Degree in which felt ready to leave the hospital at the moment of discharge	90.2	95.0	97.0	96.7	100	**
15. Kindness of care providers	90.2	97.5	100	100	100	**
16. Similarity of implementation of returning care	88.5	90.0	95.0	96.7	98.4	**
17. Teamwork among doctors, nurses, physiotherapists and other hospital staff	95.1	97.5	98.4	100	98.4	
18. Guarantees of your privacy and dignity during your stay	90.2	92.5	96.7	96.7	100	**
19. Initiatives to keep your family well informed on your condition and needs to involve them in the provided care to you	65.6	92.5	91.7	98.3	100	*

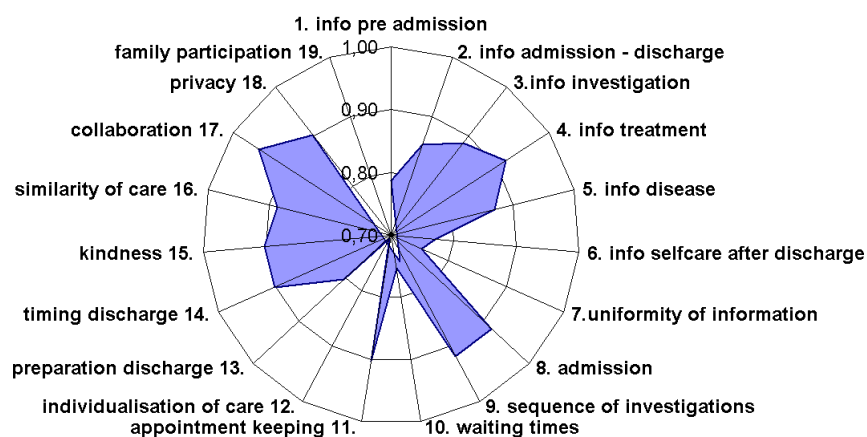
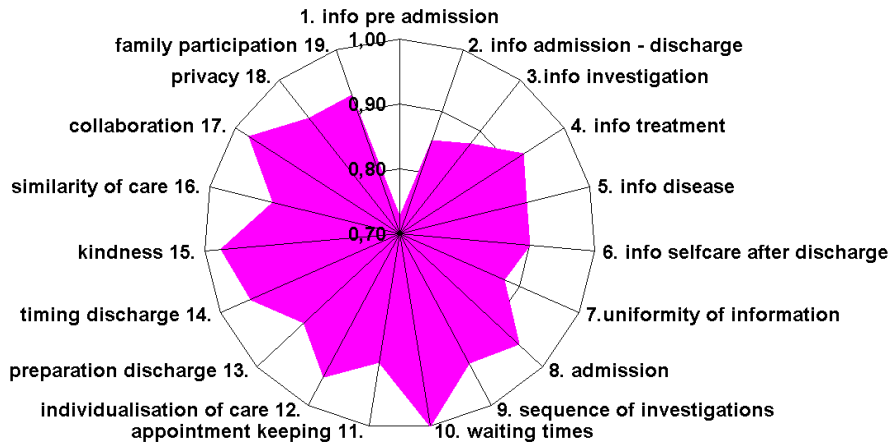
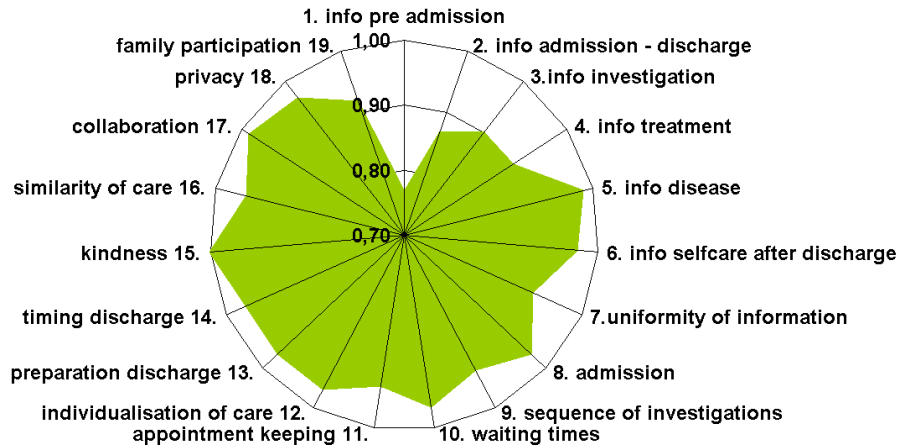


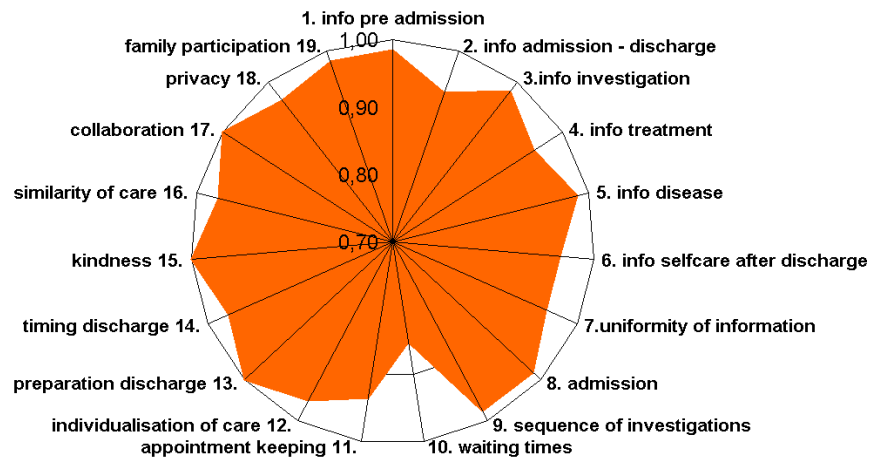
Figure 1. Patient satisfaction in 2003.



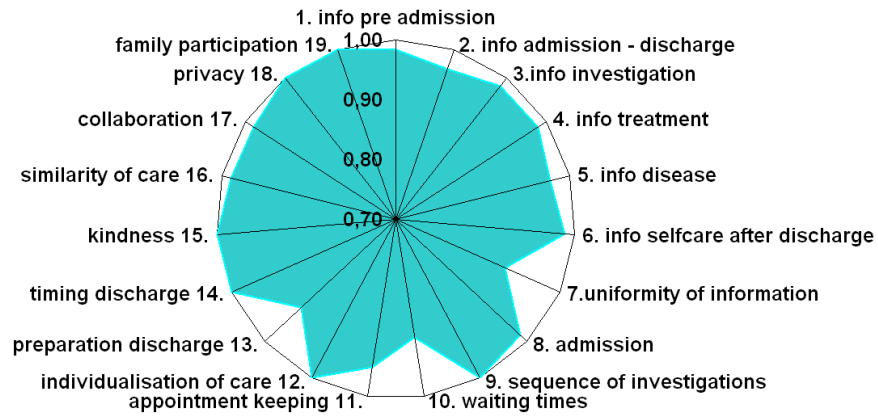
**Figure 2.** Patient satisfaction in 2004: after implementation of the clinical pathway.



**Figure 3.** Patient satisfaction in 2005: after implementation of the SBN role in the postoperative phase.



**Figure 4.** Patient satisfaction in 2006: after implementation of the SBN role in the preoperative phase.



**Figure 5.** Patient satisfaction in 2008: after implementation of the education sessions on breast cancer care and guidelines.