

Organisational design for an integrated oncological department

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Abstract

Objective: The outcomes of a Strength, Weakness, Opportunities and Threat (SWOT) analysis of three Integrated Oncological Departments were compared with their present situation three years later to define factors that can influence a successful implementation and development of an Integrated Oncological Department in- and outside (i.e. home care) the hospital.

Research design: Comparative Qualitative Case Study.

Methods: Auditing based on care-as-usual norms by an external, experienced auditing committee.

Research setting: Integrated Oncological Departments of three hospitals.

Results: Successful multidisciplinary care in an integrated, oncological department needs broad support inside the hospital and a well-defined organisational plan.

Keywords

integrated oncological care, hospital care, continuity of care, multidisciplinary care

Introduction

Oncological care in the Netherlands is in a re-orientation phase. Eight years after the statement of the Health Council that oncological care should be organised in a multidisciplinary way in outpatient clinics, hospitals are actively redesigning the oncological care process [1]. Several hospitals started with the implementation of Integrated Oncological Departments (IOD). Regardless of treatment settings, the illness or condition of the patient must be addressed with maximum effectiveness and efficiency. This way, clinical and non-clinical interventions are brought together in a setting where they are likely to have the greatest positive impact [2].

The specialist-oriented care was replaced by patient-oriented care in the IOD. Already in 1971, Hattinga Verschure predicted this development in hospitals [3]. An IOD is comparable to a Product Market Combination (PMC) which aims to deliver service to one type of homogenous patient group instead of to all kinds of patients of a specialist group [4]. Concentration of knowledge and equipment is expected to increase the quality of care and decrease the costs [5]. A possible side effect caused by the concentration of know-how is an increase in the complexity of the patient group.

In the literature, there is support for the organisation of a multidisciplinary oncological department. Harding [6] demonstrated that a centralised treatment is favourable to the patient. Abu-Own [7] stated that

Integrated Care Pathways (multidisciplinary approach to clinical patient care) for surgical patients improved communication, promoted an appreciation of each health group's role in patient care, increased nursing autonomy, reduced calls to junior medical staff, improved patient education and confidence, and reduced the length of hospital stay. Kutzschers et al. [8] research supports the use of multidisciplinary teams as a redesign strategy for enhancing work effectiveness in the health care environment.

Description of integrated oncological care

In IODs the traditional division of care, which follows the borders between the medical professions, is left behind. This is the main difference between the IOD and regular oncological departments.

In *traditionally organised oncological care* the care is specialist-oriented [9]. The oncological care is provided in the clinic, the outpatient clinic and in day care facilities. Sometimes the chemotherapy is also given in the outpatient clinic. These structures are organised separately (policy and personnel included). When treatment by other medical disciplines is necessary (i.e. surgery), the patient is transferred. Home care is organised by a separate organisation. Normally, the oncology nurses of a non-IOD do not provide oncological care at home (in some hospitals in the Netherlands there are experiments with special high-tech care at home).

In an *Integrated Oncological Department* the care is provided in the clinic, the outpatient clinic and in day care facilities and if necessary at home. The IOD is one organisational structure and preferably the different functions are located together. The oncological care is patient centred and multidisciplinary. If other medical disciplines are necessary in the treatment they are consulted. One responsible medical doctor during the whole cure and care process guides the patient. The nurses on the IOD have a key role in the care process, they co-ordinate the care inside as well as outside the hospital and act as consultants for oncological care questions to family and professionals. They also have the possibility to rotate between the different functions (i.e. ward, nursing outpatient clinic, day care facilities) to be able to support the same patients in the different stages of their disease.

Caretakers experience through the multidisciplinary approach an increased quality of care for the patients [10]. Theoretically, an increase in the quality and efficiency of the provided care enables several advantages for the IOD patients. Subtle advice, a sense of security, a small group of recognisable caregivers,

multidisciplinary checked treatment scheme, univocal communication and improved continuity of care could have a positive influence on the quality of care for the patient. Also the results of research of Gabel et al. [11] in a Multi Disciplinary Breast Care Centre (MDBCC) showed that patient satisfaction increased and that the time between diagnosis and initiation of treatment decreased. The success of the MDBCC is highly dependent on employing a sincere and competent nursing co-ordinator.

Multidisciplinary audit of three IODs in the Netherlands

Because it was uncertain if the above-mentioned positive effects of multidisciplinary care also existed in integrated oncological units, in the spring of 1997 the executives of three Dutch hospitals took the initiative to audit each other's multidisciplinary oncological departments. The three audit hospitals Canisius-Wilhelmina Ziekenhuis in Nijmegen (CWZ), Catharina Ziekenhuis in Eindhoven (CZE) and Rijnstate Ziekenhuis in Arnhem (RZA) had each independently developed and implemented an **I**ntegrated **O**ncological **D**epartment (IOD).

The audit of different IODs took place for the first time in the Netherlands. A golden standard for an IOD organisation or IOD audit was not available in 1997 in the Netherlands or in other countries with a similar health care system.

The audit concentrated on the functioning of the IOD inside and outside (i.e. home care) the hospital. The aim of the audit was to obtain insight in the strong and weak points of medical, nursing and organisational characteristics of an IOD in comparison to oncological care-as-usual. The points of interest of the performed audit were:

- the goals of the different IODs, their realisation and their support in the rest of the hospital,
- the process quality of the oncological care in the IOD (medical, nursing and paramedical) and the realised integration inside and outside the hospital in comparison to oncological care as usual in the Netherlands,
- the adequacy of the structure of the organisation and its incorporation in the hospital organisation.

Objective

The outcomes of the audit gave an impression of the organisation of Integrated Oncological Care in the Netherlands. No information was available on the future developments in the different IODs. In this study we analysed the outcomes of the Strength, Weakness,

Opportunities and Threat (SWOT) analysis of the audited IODs and compared it with their present situation to define factors which can influence a successful implementation and development of an IOD inside and outside (i.e. home care) the hospital.

Method

The study is a comparative qualitative case study. The outcomes of the audit of 1997 are studied and compared with the present situation of the IODs in January 2001.

Development of the multidisciplinary audit model

The used multidisciplinary audit model was developed by the audit committee with the use of examples of the Dutch Society of Medical Specialists for non-teaching hospitals [12] and examples of the Comprehensive Cancer Centre Northern Netherlands [13]. The remaining part of the model was newly developed because no guidelines and standards existed for a broad multidisciplinary audit of an IOD. To perform the audit, a special multidisciplinary audit committee was assigned. The audit committee consisted of a radiotherapist, an oncologist, two oncology nurses (also nurse consultants at Regional Cancer Support Centres), a researcher of oncological care and two directors of different Comprehensive Cancer Centers. The members of the committee were not affiliated to any of the visited hospitals. The average experience with cancer care and the organisation of cancer care among the reviewers was more than 15 years.

Data collection

The actual audit took place in August 1997. To be able to assess a complete view of the different IODs, data were gathered from four sources of information: policy documents, semi-structured questionnaire, medical and nursing records and interviews with representatives.

In preparation of the audit visit, the involved oncological departments were requested to send policy documents and annual notes and to fill in a questionnaire about data on production, organisational structure, consultations, meetings and personnel. Before visiting the different hospitals, all the policy documents and returned questionnaires were studied and discussed by the audit committee.

The medical and nursing records were analysed during the audit visit with the use of a checklist. During

each visit 6 medical and nursing records, chosen at random, were studied.

The respondents for the interviews were classified into three groups: Medical, Nursing and Organisation & Policy. During the one-day visits to the different departments the committee interviewed 18–20 representatives of the management, medical doctors (of the IOD as well as of other departments like surgery, radiotherapy, otolaryngology), paramedical disciplines, oncology nurses and general practitioners and home care. The interviews with the representatives were semi-structured using the aspects mentioned in the first column of Table 2. The aspects represented indicators for integrated oncological care.

The results of the audit were published in a report of almost 200 pages and the results are summarised in Tables 1–4 [14].

SWOT-analysis

The results of the audit were represented using a Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis. SWOT analysis is an effective qualitative evaluative technique [15]. The SWOT analysis technique is to study the organisations current performance (strength and weakness) and factors in the external environment (opportunities and threats) that might affect the organisation. In Table 2 the different aspects are evaluated with + (Strengths) and – (Weaknesses) in comparison to oncological care-as-usual as far as possible. Some aspects are not available in the care-as-usual and are defined by the auditing committee as processes important in Integrated Care (e.g. multidisciplinary co-operation). In Table 3 the process of analysing if an aspect is strong or weak as indicated in Table 2 is illustrated by the information from the audit report. In Table 4 the opportunities and threats are summarised for each hospital.

This is the first description of Integrated Oncological Care in the Netherlands. Comparisons with similar projects in the Netherlands were not possible: a lot of organisational changes in hospitals are being developed and implemented but the effects of the changes are not measured or compared to the former situation [16, 17]. At this moment there is no framework of norms for an IOD so comparison to a “golden standard” was not possible. Therefore the results of the SWOT analysis were compared to the oncological care-as-usual.

Measurement of present situation IODs

Three years after performing the audit, the oncological researcher interviewed the management (medical and

Table 1. Index numbers of the three audit hospitals. Data obtained from policy documents and semi-structured questionnaire

Index numbers IOD	CWZ	CZE	RZA
number of clinical beds	652	721	772
Organisational model of the IOD	<ul style="list-style-type: none"> • oncological ward • day care • outpatient clinic • oncological nursing outpatient clinic 	<ul style="list-style-type: none"> • oncological ward • short stay-day care • oncological nursing outpatient clinic 	<ul style="list-style-type: none"> • oncological ward • day care • outpatient clinic • oncological nursing outpatient clinic
number of beds (clinical) IOD	20	29 clinic 6 short stay	18
number of new and repeating patients/year	621	824	543
number of locations of IOD	2	1	3
number of administrative units	1	1	1
number of personnel units	1	1	2
capacity of day care	4	6	10
% occupation of clinical beds	94.5	87.3	85
nursing consultation (yes/no) and number of nursing consultation in outpatient clinic	yes, ± 39 patients/week	yes, number unknown	yes, 5 to 6 patients/week
nursing formation (in full time equivalents)	14.7	29	16.75
Number of nursing formation/bed (in full time equivalents)	0.6	0.8	0.9

nursing) of the IODs about the developments in their Integrated Oncological Departments. The outcomes of 1997 of the SWOT analysis were compared to the present situation.

Results

The Canisius-Wilhelmina Hospital in Nijmegen (CWZ) developed in the beginning of the 1990s a vision about the optimal organisation of oncological care. Step by step this vision was implemented in the daily practice and gradually improved. The Rijnstate Hospital in Arnhem (RZA) and the Catharina Hospital in Eindhoven (CZE) started in 1993 and 1994, respectively, after an implementation period of several years.

In [Table 1](#), the characteristics of the three hospitals and their IODs are summarised. The hospitals were of the same size. The three IODs each were an organisational unit for personnel, policy, budget, medical and nursing records, information supply, education/training, research and external relationships. The nursing formation/bed ratio differs and is the highest in the RZA IOD.

Strength and weakness

[Table 2](#) shows the results of the audit strength and weakness analysis. Remarkable was that strong points differed among the hospitals. It concerned for example the lack of a hospital oncology policy (CWZ) or undeveloped transmural care (RZA). Apparently, it was hard to develop successfully all the different aspects of integrated oncological care at the same time. The results of the strength and weakness analysis are discussed separately for the medical, nursing and organisational/policy outcomes.

Medical outcomes

All patients with cancer formed the target population of the three IODs. In practice it was not possible to treat all the patients with cancer inside the three IODs. Specific admission and discharge criteria were used to handle the patient flows. Selection criteria were: the amount of multidisciplinary and/or intensive treatment needed and the need for chemotherapy or special diagnostic procedures.

In the IODs there were three core disciplines: the internist/oncologist, the oncological surgeon and the

Table 2. Strong/weak points: Medical Outcomes, Nursing Outcomes and organisational and policy Outcomes of an IOD.+ is a strength and – a weakness. These data are in 1997 obtained from the interviews with representatives

Medical Outcomes	CWZ	CZE	RZA
	1997		
Multidisciplinary co-operation	–	–	+
Co-operation medical specialist and nursing staff	+	+	+
Integration with paramedical disciplines	+	–	–
Transmural care	+	–	–
Medical record	+	+	–
Palliative care in hospital	+	+	+
Palliative care at home	+	–	–
Continuity in medical care between clinic and outpatient clinic	+	+	+
Training of residents	–	–	+
Nursing Outcomes			
Multidisciplinary co-operation with other disciplines	+	–	+
Involvement of nurses in IOD/department policy	+	–	–
Involvement of nurses in medical policy	+	+	+
Integration of internal (oncological) medicine with oncological surgery	–	+	–
Job satisfaction	+	+	+
Participation of nursing staff in clinical scientific research	–	–	–
Used nursing system	+	–	+
Rotation of nursing staff over the different structures of the IOD	+	–	+
Nursing time/patient	–	+	+
Continuity of care between clinic (ward) and outpatient clinic	+	–	+
Nursing record	–	–	–
Training/education of nursing staff	+	+	+
Organisational and Policy Outcomes			
Oncological policy in hospital	–	+	+
Representation of different areas in organisational model of IOD	+	–	+
Structure of IOD	–	+	+
Budget of IOD	–	+	–
Competencies of IOD	–	+	+
Space of IOD (physical)	–	+	+
Integration medical and nursing staffs.	+	+	+
Integration day care	+	+	+
Integration outpatient clinic	+	–	+
Integration social work	+	+	–
Transmural care	+	+	–
Evaluation/reporting of IOD	+	– (developmental stage)	+

Table 3. Illustrations of several aspects of strength/weakness analysis. Comments of representatives are clustered under the same aspects

Medical Outcomes	CWZ	CZE	RZA
Multidisciplinary co-operation	<p>“the involvement of other disciplines is only on indication”</p> <p>“Exchange of information between lung specialists with medical oncologists is limited to the nursing staff”</p> <p>“no demand for more co-operation with IOD; lung specialists do not want to lose their oncological patients”</p> <p>“oncological surgeon is only involved in the common oncology meeting, not involved in oncology meetings on the IOD”</p> <p>“Radiotherapist consultant does not notice difference between IOD and other departments of hospital”</p>	<p>“the IOD is considered as a department of internal medicine and lung specialists”</p> <p>“the internists are leading; other specialists consulting”</p> <p>“the multidisciplinary meeting is often one-sided; only medical oncologist, assistant oncologist, surgical assistant, nursing staff, paramedical discipline and radiotherapist contribute”</p> <p>“complete integration of medical and surgical oncology was not attainable”</p>	<p>“integration with oncological dental surgeons”</p> <p>“realised multidisciplinary co-operation medical and nursing staff on IOD”</p> <p>“Radiotherapist participates in oncology meeting of IOD”</p> <p>“Surgeon is often missed on oncology meeting of IOD”</p> <p>“representatives of hospice and nursing home are present on meetings of the IOD which contributes to the transmural care”</p> <p>“the oncological surgeon has positive experiences with the IOD; on average the IOD has 4 oncological surgical patients who need multidisciplinary treatment”</p>
Transmural care	<p>“5 experienced nurses trained for specialised hospital based home care”</p> <p>“The medical oncologist is continuously on call for medical problems during the treatment at home”</p> <p>“The transmural nurses are closely co-operating with the regular home care and GP”</p> <p>“the co-operation between the transmural nurses and medical oncologist is good, there is much room for consultations and work is executed on base of equality”</p>	<p>“Inside the hospital 4 transfer nurses are available for patients with a problematic home situation”</p>	<p>“Inside the hospital 2 transfer nurses are available for patients with a problematic home situation”</p>
Nursing Outcomes	CWZ	CZE	RZA
Multidisciplinary co-operation with other disciplines	<p>“The nursing staff of the IOD positively experiences the multidisciplinary co-operation with the medical oncologists and other paramedical disciplines”</p> <p>“an integrated medical-nursing and</p>	<p>“the IOD is mainly built on the medical discipline; the nursing aspects are not yet fully developed”</p> <p>“the opinion of the oncology nurses are taken into account in the treatment of the patient”</p>	<p>“structured consultations with the medical specialists (1x /wk) The radiotherapist is also participating”</p> <p>“the opinion of the oncology nurses are taken into account in the treatment of the patient.</p>

(Continued on next page)

Table 3. (Continued)

Medical Outcomes	CWZ	CZE	RZA
	paramedical” treatment scheme is in development”		“no structural consultations with the paramedical disciplines” “no integrated medical-nursing and paramedical” treatment scheme available”
Organisational and Policy Outcomes	CWZ	CZE	RZA
Oncological policy in hospital	“oncology committee is not committed with the oncological policy of the entire hospital” “oncology committee does not fill in their assignment” “oncology committee is a club of only medical oncologists”	“oncology committee is supported by medical staff and management” “Oncology committee is advisory board of IOD” “Oncological policy is spearhead inside hospital”	“nursing staff has a contribution in the oncological policy” “oncological policy is broadened inside in the organisation” “the oncological committee is established by the management and the Comprehensive Cancer Centre East participates ” “relationship between oncology committee and IOD; IOD is established for all medical disciplines but patients must need multidisciplinary or complex treatments” “Oncological policy is spearhead inside hospital’

radiotherapist. In each IOD two or three medical oncologists were working, assisted by one or two residents. Oncological care outside the hospital (i.e. home care, nursing home care and hospice) is an essential part of the IOD. The multidisciplinary co-operation was strongly developed in the RZA. In all the IODs the collaboration with the nursing staff was good. The integration with paramedical disciplines was structurally implemented in the CWZ. Also, only in the CWZ was the palliative home care a structural part of the department.

The CWZ has succeeded in implementing hospital based oncological care at home. To extend the oncological care to the extramural setting is a goal of the involved IODs. The three IODs delivered palliative care to their patients.

The structure of the medical record needed improvement in the RZA.

Nursing outcomes

The nursing staff in the IODs was well trained, educated and experienced in different aspects of oncological care. The oncology nurses in the three IODs supported the patient during all the phases of care. The nurses also guarded the continuity of care and referred the patient in time to the paramedical and psychological support staff. Besides the clinical tasks, in the IOD of the CWZ the nursing staff also delivered day care, home-based oncological hospital care, and consultations with the patients in the outpatient clinic [18]. The nurses in the RZA also provided consultations in the nursing outpatient clinic and oncological day care.

Only in the CWZ were the nurses fully involved in the department policy. In all cases, the nurses were involved in the medical policy and the decisions around patients. In the CZE, the oncological surgical ward was on the same floor because of the integration

Table 4. Opportunities and threats of developed IODs. The data used for this table were extracted from the interviews and semi-structured questionnaires

	CWZ	CZE	RZA
Opportunities	<ul style="list-style-type: none"> • Development of multidisciplinary medical co-operation • Enforcement of oncological policy inside the rest of the hospital • Sub specialisation of oncology in other disciplines • become an independent oncological unit • stimulation of oncological developments in—and outside the hospital • start of an integrated/multidisciplinary oncological outpatient clinic • patient centred nursing care 	<ul style="list-style-type: none"> • Development of oncological centre (complex care, education/training and research) • development of oncological protocols • integration of outpatient clinic inside IOD • rotation of oncological nurses over day care, internal oncological medicine—and oncological surgical ward • further development of transmurals care/oncological home care 	<ul style="list-style-type: none"> • Appreciation of gained results and increasing co-operation with other disciplines • Facilitation of intensive and complex oncology inside the hospital • further development of extramural co-operation and palliative care • extension with surgical and gynaecological oncological patients • development of IOD care standards on other hospital departments • development of nursing research programme
Threats	<ul style="list-style-type: none"> • The existence of the department in the future is unsure because of the lack of organisational structure • The IOD is isolated inside the hospital • no involvement of hospital management, hospital oncological committee or board of medical specialists • physical circumstances of the IOD • finance of IOD innovations 	<ul style="list-style-type: none"> • Differences in working styles among the different parts of the MDO department • Occurrence of fatigue and stress under personnel through fast changing environment • The development of the IOD is not positioned inside a hospital wide oncological policy • Lack of integration between clinic and outpatient clinic • Limited computerisation • Limited manpower of medical oncologists • Lack of research infrastructure • The IOD is isolated inside the hospital 	<ul style="list-style-type: none"> • Finance of IOD innovations • Laborious co-operation with other medical disciplines • Occurrence of fatigue and stress under personnel through fast changing environment • Time pressure and workload of medical oncologist of IOD • Financial, historical and organisational structures delay co-operation among medical specialists • The IOD is isolated inside the hospital

of both disciplines. In the RZA only the surgical otolaryngology cancer patients were also treated on the IOD. Rotation of nurses over the different functions

was realised in the CWZ and RZA. The workload for nursing staff in the CWZ was high, the nursing formation was the lowest of all three.

The nursing staff of the RZA worked with a system of patient assignment, the CZE used the system of team nursing and the CWZ used a combination of patient assignment and team nursing.

Transfer forms and lists of complications were not found in any of the analysed nursing records.

Organisational and policy outcomes

The goals of the compared IODs were similar: to offer integrated oncological care, intramural and extramural, to patients who need intensive treatment and/or specialised nursing care. One team, consisting of medical, nursing and paramedical disciplines, operated around the patient. Important objectives of the IODs were the continuity in medical and nursing care, one main responsible doctor, one information flow towards the patient, development of one medical and nursing patient record, and unity in consultative structure and management.

The oncological care encompassed four areas: the clinic (ward), day care, outpatient clinic and oncological home care/palliative care (transmural care). Within the three IODs, the removal of the organisational barriers between the different areas of care was fully or partially realised. The CZE located the oncological surgical beds on the same floor as the internal oncological beds.

The daily management was the responsibility of the head nurse and the medical manager (one of the medical specialists). In the Canisius-Wilhelmina hospital (CWZ) and the Rijnstate Hospital (RZA), the internist-oncologists were responsible for the medical policy and management of the IOD. In the Catherina hospital (CZE) the internist-oncologist was responsible for the management of the IOD but the medical responsibility depended on agreements between the participating medical specialists.

Opportunities and threats

The audit committee also defined opportunities and threats for the different oncological departments (Table 3). The main opportunity for the CWZ was the potential to become an independent oncological unit with developments in—and outside the hospital. The opportunity for the CZE was further integration with the outpatient clinic, rotation of nurses and development of oncological home care. RZA's opportunities were diverse, such as increasing co-operation with other disciplines and the development of palliative care, transmural care and a nursing research programme.

The IODs were not specialist oriented like the traditional departments and served in the RZA and CZE as an example for the rest of the hospital organisation. Still, the organisational design of the IOD was not further implemented in other departments of the studied hospitals. The audit committee stressed in their report that it was very important that the IOD should be an accepted part of the hospital organisation. An isolated, special position of an IOD was not desirable and could block further integration and new developments. The IOD of the RZA was most aware of her isolated position in the hospital and tried to expand collaboration within the hospital instead of further developing the different aspects (i.e. transmural care) of the IOD. The IOD of the CZE did not have the support of the rest of the hospital organisation and held a special and isolated position inside the hospital. The IOD of the CWZ functioned as a special and organisationally isolated department of the hospital. Another threat to further development was the "tiredness" of the IOD-nursing and medical staff of changes. Also cultural differences between groups (internists/surgeons, day care nurses/clinical nurses) had to be overcome. In the CWZ and the RZA the financing of the oncological care innovations was a problem as well.

Present situation of the three integrated oncological departments in January 2001

Three years after the visitation the oncological researcher interviewed the heads about the present situation of their IODs. The outcomes of 1997 were compared with the present situation in January 2001.

Description of the present situation of the three IODs

The IOD of the CWZ has concentrated all functions (day care, ward, outpatient clinic, home-based oncological hospital care and palliative care) physically and organisationally. The concentration of functions had a positive effect on the internal and external co-operation and the organisational unity. The oncological day care increased with 100%. The reception and sleeping facilities for family members also increased. The palliative care is extended by a grant of the government. A Consult Team Palliative Care, a collaboration between the Canisius-Wilhelmina Hospital and the University Medical Centre Nijmegen is established to support caretakers with a palliative care request. The transmural home care plays an active role in the Consult Team Palliative Care because of their 24 hour

availability. The IOD of the CWZ succeeded in increasing the integration with the rest of the hospital, but their patient centred approach of care remains unique inside this hospital.

The situation of the IOD in the **CZE** hospital changed after the audit. The oncological surgical beds are no longer situated on the same floor. The ward and day care were united organisationally. They started oncological outpatient nursing consultations. In the hospital, a discussion about the functioning of the IOD started. At this moment there is insufficient support for an IOD. Therefore the IOD of the CZE is in a reorientation period of their organisational structure.

The IOD of the **RZA** hospital developed itself in accordance with the organisational scheme. The integration with the oncological surgery succeeded and eight oncological surgical beds were added to the department. The day care clinic expanded to 12 places. The nursing outpatient clinic expanded to 3 shifts a week. Also the outpatient clinic for multidisciplinary breast care was developed and implemented inside the IOD. The experimentally started combination consultations (an internist-oncologist with a surgeon or radiotherapist) increased to a number of 400 a year. The weakest point of the IOD of the RZA in 1997, the transmural care, successfully developed into a palliative centre in a nearby hospital. Organisationally, the palliative centre is now a part of the IOD. This palliative centre is a co-operation of the IOD, nursing home, home care and hospice. The number of internist-oncologists increased to 4 (and two residents). The IOD of the RZA realised all the goals as described in the organisational design of an oncological department. Remarkable is also that the IOD of the RZA had no problems attracting new nursing personnel. The organisational approach of the IOD of the RZA formed an example for the rest of the hospital organisation. In the near future other departments will start to implement the patient-centred approach of the IOD.

Discussion of the outcomes of 1997 with the present situation

The outcomes of 1997 are compared to the present situation to give an indication as to the development of the IODs. Some trends, for example the extended palliative consultation in the CWZ are not covered because the development in 1997 was already a strength of the IOD.

Medical outcomes

The CWZ concentrated on improving and extending the palliative care. The multidisciplinary co-operation

is extending but no further integration with other medical disciplines is formalised.

The CZE is in a reorientation phase. The promising multidisciplinary co-operation and integration with surgery of 1997 has not been realised.

The weaknesses of the RZA in 1997 are changed into strengths. The transmural care, an opportunity, is developed at home as well as in a palliative centre.

Nursing outcomes

The CWZ invested in enlarging the department and improving the conditions for patients and nurses. The CWZ is gradually formalising the structure of the IOD.

The reorientation of the IOD in the CZE blocks further developments for the nursing staff as well.

The RZA invested further in the nursing staff. The integration with oncological surgery succeeded. Also a nursing research centre was developed.

Organisational and policy outcomes

The CWZ is improving and formalising the organisational structure. The functions of the IOD are located together in 2001. The IOD of the CWZ functions as an isolated unit inside the hospital.

In the CZE, the oncological surgery was transferred to another floor. In the CZE, they integrated the organisation of day care and IOD. The reorientation phase of the IOD will take some time. Before implementing a new IOD structure, broad multidisciplinary support inside the hospital is necessary to prevent an isolated position in the near future.

The IOD of the RZA was able to improve several organisational aspects. Especially the transmural co-operation is important in the further development of the IOD. The threat concerning the isolated situation has disappeared; the IOD serves as an example for the hospital organisation.

Discussion

The study was explorative. It was the first time that an audit was conducted in three integrated oncological departments. There was no consensus about the organisation and functioning of an IOD. There was no quantitative or qualitative information from comparable studies in the Netherlands either. No comparison was made with a reference group. The main goal of the audit, obtaining insight in the organisation and functioning of an IOD for the involved hospitals succeeded.

The differences in design of the described IODs could be explained partly by their different developments. The internist-oncologists of the CWZ focused their attention on the integration and optimisation of the medical, nursing and paramedical procedures around the patient. RZA and CZE concentrated in the first place on an optimal organisational incorporation of the IOD in the hospital structure. The latter approach had a positive influence on the amount of multidisciplinary co-operation with other departments. After 3 years one IOD (RZA) successfully integrated the IOD in—and outside the hospital. Looking at the SWOT analysis of the RZA IOD, the organisational aspects, except for the home care, were strong. The IOD of the RZA hospital invested much effort in the incorporation of the IOD in the organisational structure of the hospital. The process of incorporation also slowed down temporarily the progress of this IOD. Further development of palliative care and home care could only take place after the incorporation phase was finished. The IOD of the RZA has become a transparent structure for the rest of the hospital organisation.

Using the literature on organisation, the creation of the IODs can be explained by the technological advances in oncological treatments, which leads to an increase in the complexity of care. More complexity requires further specialisation. Concentration of know-how increases the differentiation and segmentation of the patient groups (refinement). The increase in knowledge and specialisation requires more research into the effects of the realised changes. Maintaining the level of innovations requires constant improvement [19]. The IODs stress the importance of the quality of the delivered oncological care to their patients. The IODs all started as organisations with an organic character. Mintzberg [20] named those structures 'adhocracies'. An adhocracy is a flexible organisation form. Mutual adjustment is the primary co-ordination mechanism. The IOD functions inside a professional bureaucracy (i.e. the Hospital). Co-ordination and adjustment are important inside an IOD. The managers (head nurse and medical specialist) have to invest a lot of time in personnel to forge them into a functional team. The external relations are important; co-operation with other disciplines is the only way to reach the goal of patient centred care in—and outside the hospital. At a certain stage of the development more structure is necessary to ensure the continuity of an IOD. The lack of clarity and efficiency in an organic structure can be its downfall. By shifting in time to another more structured organisational form, i.e. professional bureaucracy, continuity can be established. Those steps are the beginning of the restructuring of

the organisation from an organic to a formalised structure.

The auditing process showed that for a successful implementation the IODs needed in the first place a broad support in their hospital. Also, in time, formalisation of the structure is necessary to ensure continuation. The focus on the external environment is important because an IOD operates in a multidisciplinary and patient centred way. Another important factor is the prevention of fatigue and stress among personnel as a result of the fast changing oncological environment. The phases in progression and the ultimate target should be transparent to the involved personnel and the hospital organisation. Serious involvement of the personnel in each phase broadens the support. Another important factor is the necessity of sufficient financial means. Innovating without a reasonable budget is demoralising to the involved staff and threatens further developments.

Other points of interest for success are: development of protocols, training of the nursing staff, public relations in—and outside the hospital, research and objective measurements of key IOD indicators. These points of interest also agree with the findings of Doerg and Hagenow [21]. These authors stated that there are four key factors in redesigning care towards patient centred care: support from the top, involvement of all key disciplines, the timely movement from envisioning to implementation and communication of tangible measurements of the change process.

From the patient perspective Rabinowitz [22] wrote in his review that in the comprehensive breast centre multidisciplinary teams can work efficiently and compassionately in a co-ordinate fashion to support women through the breast cancer experience. In an IOD, the multidisciplinary teams can support the cancer patient in a similar fashion.

The results in this paper were based on an auditing procedure of three Integrated Oncological Departments. No data were collected on outcome qualities, such as clinical outcome, patient satisfaction and cost effectiveness. In the future, cost effectiveness analysis of IODs should be performed and the effectiveness of different models compared. In the future the results of this multidisciplinary audit of integrated oncological care can be used to develop an audit based on a framework of norms. This study also supports the findings of Johnston [23], after reviewing 93 publi-

cations, that clinical audit could be a valuable assistance to any programme that aims to improve the quality of care. Combination of qualitative measures of organisational and behavioural changes with quantitative measures of clinical outcomes compared to guideline targets is a useful tool to facilitate changes to improve effectiveness [24]. Therefore, both re-

search and audit have their role in the pursuit of effective health services [25].

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References

1. Commissie Taakverdeling in de Oncologie. Kwaliteit en taakverdeling in de oncology [National Advisory Council on Health. Quality and division of tasks in the Oncology]. Den Haag; 1993. (report nr 1993/01).
2. Zitter M. A new paradigm in Health Care Delivery. In: Todd WE, Nash MD, editors. Disease Management. A systems approach to improving patient outcomes. AHA Press; 1996. Chapter 1.
3. Hattinga Verschure J.C.M. Het verschijnsel zorg. De tijdstroom; 1981.
4. Kooij CR van, Ravensbergen JM. Het Marketingplan: een cyclische en interactieve methode voor de non-profitsector. Utrecht: SWP; 1995. p. 58.
5. August DA, Carpenter LC, Harness JK, Delosh T, Cody RL, Adler DD. Benefits of a multidisciplinary approach to breast care. *Journal of Surgical Oncology* 1993;53:161–7.
6. Harding MJ, Paul J, Gillis CR, Kaye SB. Management of malignant teratoma: does referral to a specialist unit matter? *Lancet* 1993;341:999–1002.
7. Abu-Own A, Sachs R, Loudon C, Linnard D, Buckland J, Murphy S, et al. Vascular surgical society of Great Britain and Ireland: integrated pathways for vascular surgery. *British Journal of Surgery* 1999;86(5):703.
8. Kutzscher LI, Sabiston JA, Laschinger HK, Nish M. The effects of teamwork on staff perception of empowerment and job satisfaction. *Healthcare Management Forum* 1997 Summer;10(2):12–24.
9. Folter RJ de. The services of medical specialists and hospitals. In: Schrijvers AJP, editor. Health and health care in the Netherlands. A critical self-assessment by Dutch experts in the medical and health sciences. Elsevier/De Tijdstroom; 1998. Chapter 8.
10. Fountain MJ. Key roles and issues of the multidisciplinary team. *Seminars in Oncology Nursing* 1993;9(1):25–31.
11. Gabel M, Hilton NE, Nathanson SD. Multidisciplinary breast cancer clinics. Do they work? *Cancer* 1997;79(12):2380–4.
12. Landelijke Specialisten Vereniging (LSV). Kwaliteitsbeleid medische specialisten. [Dutch Society of Medical Specialists. Quality policy medical specialists]. LSV; 1995.
13. Otter R, Annyas AA, Bekkum D van, Botke G, Kaasjager WA. Kwaliteit in de oncologie. Een multidisciplinair visitatieproject in Noord-Nederland. [Quality in the oncological care; a multidisciplinary audit project in the northern part of The Netherlands]. *Medisch contact* 1998;53(4):126–9.
14. Comprehensive Cancer Centre East 1997. Audit report of three integrated oncological departments [visitatierapport betreffende drie OAAZ-afdelingen].
15. Balamuralikrishna R, Dugger JC. SWOT analysis: a management tool for indicating new programs in vocational schools. (*E*)*Journal of Vocational and Technical Education* 1995;12(1).
16. Linden BA van der. The birth of integration. Explorative studies on the development and implementation of transmurale care in the Netherlands 1994–2000. Thesis University Medical Centre Utrecht; 2001.
17. Rozendal H, van Beekum WT, van der Linden BA, Schrijvers AJP. De effectiviteit van transmurale zorg [The effectiveness of transmurale care]. *Tijdschrift voor Gezondheidswetenschappen* 2000;78:426–31.
18. Turnhout JM van, Oosten HR, Teunissen SC. Thuiszorg voor de patiënt met kanker: Formele structuren in kleinschalige zorg [Home care for the patient with cancer: formal structures in small-scaled care]. *Medisch Contact* 1992;47(13):409–11.
19. Kapteyn B. Organisatietheorie voor non-profit. Bohn Stafleu Van Loghum; 1986.
20. Mintzberg H. Mintzberg on management. The Free Press NY; 1989.
21. Doerge J, Hagenow N. Patient-centred process of work redesign. Arizona hospital reengineers with no outside help. *Health Progress* 1995 Nov–Dec;76(8):28–32.
22. Rabinowitz B. Psychological issues, practitioners' interventions, and the relationship of both to an interdisciplinary breast center team. *Surgical Oncology Clinics of North America* 2000; 9(2):347–65.
23. Johnston G, Crombie IK, Davies HT, Alder EM, Millard A. Reviewing audit: barriers and facilitating factors for effective clinical audit. *Quality in Health Care* 2000 Mar;9(1):23–36.
24. Bell CM, Ma M, Campbell S, Basnett I, Pollock A, Taylor I. Methodological issues in the use of guidelines and audit to improve clinical effectiveness in breast cancer in one United Kingdom health region. *European Journal of Surgical Oncology* 2000 Mar;26(2):130–6.
25. Thomas B. Research audit in effective health services. *Nursing Standards* 1999 May 5–11;13(33):40–2.