Wisecare in practice: using ICT as tool to improve care

Jop Helleman RN BSN
University Medical Centre Groningen,
Hanzeplein 1, 9700 RB Groningen, The Netherlands
E-mail: J.Helleman@chir.azg.nl and Jop.Helleman@HetNet.nl

About the author
Jop Helleman RN BSN (1961) was working at the surgical oncology ward as a registered nurse. He coordinated the project in Groningen, the Netherlands. His interest in nursing informatics grew during the project and he studied nursing informatics at the Hogeschool Holland, Diemen. In July 2001 he graduated the BSc in nursing informatics programme. In September 2001 he was employed by Acquest consulting as a researcher/advisor in the field of nursing informatics. In January 2002 he picked up his old career as a registered nurse on the surgical abdominal ward of the University Medical Centre Groningen in combination with freelance work for Acquest.

Introduction
WISECARE is part of the Telematics project of the European Commission. The project started in July 1997 and ran up till December 1999. WISECARE stands for Workflow Information Systems for European nursing CARE (Sermeus et al, 2000). The aims of WISECARE are to encourage the nurses in Europe to compare their actual clinical practice with other clinical sites, benchmark their practice and develop international guidelines and protocols.

Because this is an ambitious plan there where six partners involved, each bringing different expertise to the project. These partners are: The European Oncology Nursing Society (EONS) brings a network of cancer nurses to the project. The Catholic University of Leuven, Belgium, coordinator of the WISECARE-project, is responsible for the provision of statistical analysis and also stimulation of the project. The University of Kuopio (Finland) and the Glasgow Caledonian University (Scotland) have been responsible for defining user requirements, building the databases and the data collection. HISCOM, an independent company concerned with hospital information management systems, is involved in the project as assessor of the technology employment and validation of the project. Finally, the University of Athens is responsible for networking within the

Abstract
The ward of surgical oncology of the Academic Hospital Groningen in the Netherlands was involved in the European telematics project Wisecare (Sermeus et al, 2000). This article tells about the experiences of the nurses working on the ward of one of the hospitals involved. It will give an overview of the project, the involvements of the Academic Hospital Groningen, and the results for the patients and nurses on this ward. It will give evidence of the effects on the actually given care, the effects of the project on the use of telematics and the managerial level of the ward. The article shows the result of the participation in such a European project and draws conclusions.

Keywords:
Telematics, ICT, nursing care, evidence based practice, management
project and the development of the World Wide Web site of WISECARE.

To get in touch with the reality of nursing care, five hospitals were invited to join the project as validation sites. These were:
- **Beatson Oncology Centre**, Glasgow, Scotland
- **University Hospital of Leuven**, Belgium
- **Huddinge University Hospital**, Sweden
- **Helsinki University Hospital**, Finland
- **Academic Hospital Groningen**, the Netherlands

With exception of the Academic Hospital Groningen, all the sites provided medical oncology wards, whereas Groningen brought in the ward for surgical cancer care. During the last six months a number of six so called demonstration sites were added to test the developed procedure.

**Background**

Nursing care represents between 40 and 60% of healthcare budgets across Europe, but its impact on patient care is hardly evaluated. At the same time budgets are decreased and resources are no longer reaching the sky. Therefore it is crucial for nurses to show what their contribution is to the effectiveness of care given in the hospitals.

The WISECARE project has been developed in response to this scenario. WISECARE aims to use the latest advances in information technology to identify the unique contribution of nursing and to harmonize cancer-nursing care across Europe (Sermeus et al, 2000). In working towards these goals, it is hoped that the WISECARE project will help demonstrating the value of nursing care.

**How the project worked**

Nurses generate vast amounts of data on different levels. This consists of managerial data, like the number of nursing hours used to provide care and patient hours spend on the ward. An enormous amount of data are being gathered about the actual care provided to the patients. However, the vast majority of these data are stored in paper patient records and are merely used for individual and operational communication purposes between individual caregivers, hospitals and community care. It is not available to be used to give evidence of the contribution nurses bring to care. These data could be used for the development, evaluation and improvement of nursing protocols and guidelines. WISECARE has set out to turn actual clinical care information into information ready for benchmarking and the development and evaluation of protocols and guidelines.

**Starting WISECARE**

Project management made the assumption nursing data could be retrieved from the Hospital Information Systems. These data should be re-used to define nursing guidelines and protocols in close collaboration with the nurses. Comparing the data between the different hospitals should tell us something about the care delivered.

This assumption provided the project with perhaps the biggest disappointment, none of the hospitals worked with electronic patient records, so no data could be retrieved from the existing Hospital Information Systems. In Belgium some electronic data were available because of the use of the Nursing Minimal Data Set.

To solve this problem, the **WISEtool** (Hoy, 2000) was developed by Derek Hoy of the Caledonian University. This is a piece of software, easily installed on a personal computer, which made it possible to sample the information needed for the project. **WISEtool** helped the nurses with:
- Sampling patient information
- Sampling managerial information
- Sending data to the Caledonian University
- Giving instant feedback
- Giving information about the used protocols of the five validation sites
- Giving opportunities to add local information.
- Linking clinical data with nursing care data and patient data.

WISECARE included patients with the following types of cancer:
- Breast cancer
- Non-Hodgkin lymphoma
- ALL (Acute Lymphatic Leukemia)
- AML (Acute Myeloid Leukemia)
· Osteosarcoma
· Lung cancer

These were chosen because all five validation sites gave care to patients with one of these cancers. Data about the hospitalisation, staging of the disease and treatment are being sampled. The validation sites decided to focus on four patient indicators:

· Pain
· Oral care
· Fatigue
· Nausea and vomiting

Data about these patient indicators were gathered by using the ‘Wisecare patient questionnaire on pain, fatigue, nausea and vomiting’ based upon the Piper fatigue scale and the EORTC QLQ-30 (the European Organization for Research and Treatment for Cancer QLQ-C30: a quality of life instrument for use in international Clinical Trials in Oncology) (Kearney and Miller, 2000), and the Oral Assessment Guide. (Eilers, et al, 1988). Each patient was asked to fill out the forms at admission, and the next ten days. If a patient is discharged at the 5th day, he is asked to fill in the forms at home and send them back. Managerial information was gathered by using the MOFFITT (Medical and Surgical Oncology Patient Acuity Tools) (Lovett, et al, 1994). See figure 1 for the Moffitt scale in the Wisetool.

Wisecare protocol

At admission patients are checked if they are eligible for WISECARE. If so, information is given about the project, the patient is informed about how to fill in the forms, and normal care is started. Every day the nurse helps to remind the patient to fill in the form. If needed help is given to complete the form. In the WISEtool the patient data are gathered. Name and date of birth are sampled as well, but not send away for the feedback. WISEtool makes a unique code for the patient. Privacy of the patient data is ensured by authorization of the program users. Each day information about the patient gathered at the paper forms is stored in the WISEtool. This feeds the instant feedback mechanism. The nurse is capable to combine her observations with the results shown in Figure 2. She can see how her patient is doing and discuss the outcomes with the patient. In Groningen there where no hand held devices available so the outcomes had to be printed and taken to the patient.

Wisecare in daily practice of the Academic Hospital Groningen

As mentioned before, for the Netherlands the Academic Hospital of Groningen participated in the project. The ward which was included contains 30 beds of which 20 are in use by the Surgical Oncology. At the start of the project there were three personal computer linked to the hospital information system and a couple of terminals with the same function. Only the head nurse had an e-mail account and access to the Internet. Because of the way of information gathering and exchange, the staff nurses needed to have an e-mail account and access to the Internet. At ward level access was made available as well. Of the patient groups included in the project only the women coming in for a surgical treatment in respect to breast cancer were eligible.

Figure 2 is an example of instant feedback about pain of one patient. The graphic shows the assessment of this patient on pain. The thick line at the bottom of the graphic shows the time of hospitalisation. At the left side, a short overview is visible of the treatment and the assessments done. In Groningen standard care plans are available for the different types of surgical procedures. These were available on the WISEweb, so all the nurses taking part in the project were informed about the care given in Groningen. Patients coming in for less severe treatments like an excision biopsy stay only a short period at the ward. The treatment was looked upon as less severe. The outcomes on pain however showed that the patients suffered more pain than expected, with a rise after discharge. This resulted in a modification of the care plan.

Once a week managerial data are gathered. The so called Moffitt tool is used to gather information about the workload brought on by the patient, WISECARE as well as NON-WISECARE, and the staffing level is sampled as well. The data in-
Fig. 1 An example of the Moffitt in the WISEtool

Fig. 2 An example of instant feedback for pain.
cluded in the Moffitt tool makes it possible to link nursing activities to medical events. If the data collection is large enough it will be possible to make a statement about the workload due to a certain treatment concerning breast cancer. In the long run this so called clinical time issue will be used to bring in the nursing activities in the Diagnosis Related Groups (DRGs).

At selected dates all of the information is exported to the central database. After working with it, global feedback is given. It is no longer possible to talk about one patient, but only about the group of patients at your ward in comparison to the other validation sites. In figure 3 an example from Groningen is given.

Thus, benchmarking of the different practices throughout Europe is started. With the results of the global feedback it is possible to spot differences between the different hospitals. This is a starting point to talk about what is causing the outcome of one site in relation to that of the others. A lot of differences have to be taken into account, for example:

- surgical versa medical patients
- treatment on out or inpatients bases
- workload
- staffing level
- cultural differences.

Using the WISECARE results in practice

The global feedback made it possible to discuss actual care between the Wisenurses of the validation sites. This happened during the half yearly meetings, but also by using the WISEweb, a kind of mailing list used to send comment to one another, ask questions about the outcomes, but also to keep spirits high while doing the WISECARE job.

The instant feedback helped to talk about the nursing care given at the different hospitals. The outcomes are being discussed among the nurses. For example: Out of the 70 assessed patients, 14 showed an increase of pain after discharge. Of notable interest is the group of patients who received an excisional biopsy. 8 out of 14 patients reported increasing pain after discharge, although the treatment is considered as less severe by nurses. The patient education on the subject of pain management was reviewed and readjusted. It has led to a change of the daily practice and the care plans that are used.

Although there are many differences between the sites, nursing care, which is hardly ever been put into measurable numbers, is ready to be compared. The way of given statistical feedback is not absolute, but relative according to comparison to the other wards. The marks set for the ward in Groningen were even more difficult to compare to the other sites involved as Groningen was the only surgical ward included. The use of information computer technology has grown over the years of the project and is still expanding. The nurses are more aware of the help ICT can give in their care.

Conclusion

WISECARE has been started to give a picture of the contribution of nursing care given throughout Europe. The project has started to focus on special patient groups, i.e. cancer patients, and on the resources used to treat specific nursing problems. Although this is not providing a complete overview of all nursing resources used to treat those patients, it is a start. WISECARE has achieved to give a picture of these small parts.

Very interesting but also confusing was the linking of the nursing resource data in a clinical perspective. The introduction of the so-called “Clinical Time”, was a first step to provide a link between medical data and nursing data. This is to identify what kinds of nursing resources were related to specific medical activities, like a surgical procedure. Although no conclusion could be drawn, we support the idea of linking those data to find even more interesting information to support an integrated approach of clinical care.

WISECARE has started at a managerial level, but has been taken from there by the clinical nurses to the level of evidence based practice. This is a major achievement of WISECARE, because it is making more clearly what the contribution of nurses to the whole of patient care and quality is. Nursing care is being benchmarked. This, in combination with the
managerial data, makes WISECARE a promising tool for the future of nursing.

WISECARE at this moment is kept alive by most of the validation and demonstration sites in cooperation with EONS, the Caledonian University and HISCOM.

Acknowledgement

I would like to thank the nurses of the Surgical Oncology ward of the Academic Hospital of Groningen.

References

5. Lovett, R.B. et al, Validity and reliability of medi-

Fig. 3 An example of global feedback on nursing hours / patient day

If it’s summer, it must be the time for nursing informatics conferences in the USA. This July was no exception, with the 20th International Nursing Computer and Technology Conference offered by Rutgers University’s College of Nursing and the University of Maryland School of Nursing’s 12th Annual Summer Institute in Nursing Informatics in close proximity. With increasing numbers of nursing and informatics events being held every year, these two pioneers in the field continue to respond to the ever-evolving field of nursing informatics, and to attract both stalwarts and beginners.

This year’s Rutgers conference was back almost on ‘home ground’ after last year’s excursion to Denver, and was held on 12-14 July at the Marriott Financial Center Hotel, New York. Literally yards away from ‘Ground Zero’, the event’s themes, as well as celebrating its twentieth year, reflected the

Conference Report: Two nursing informatics conferences

Peter J. Murray