Videophonic system for cancerous patients receiving chemotherapy at home

Mona LAILA[1]
Vincent RIALLE[1, 2]
Lydie NICOLAS[3]
Catherine DUGUAY[3]
Alain FRANCO[1, 3]

1- Laboratoire TIMC-IMAG UMR CNRS 5525e, Université Joseph Fourier, Grenoble, France
2- Département d'informatique Médicale, Centre Hospitalier Universitaire de Grenoble, Grenoble, France
3- Pôle de Médicine Aiguë et Communautaire, Centre Hospitalier Universitaire de Grenoble, Grenoble, France

Correspondence: Mona LAILA, Laboratoire TIMC-IMAG, équipe AFIRM, Faculté de médecine de Grenoble, Bâtiment Jean Roget 38706 La Tronche Cedex, France. Tel : +33 4 76 63 74 33, Fax: +33 4 76 63 74 08. mona.laila@imag.fr

Introduction

- Nowdays progression of various medical phenomena:
  - ✓ **Increase of social, medical and economic needs of dependent people(old, sick, disabled).**
  - ✓ **Progression of nosocomial infections specially in cancerous patients.**
  - ✓ **Growth of health resources consumption and healthcare expenditure.**

  ➡ Increase of medicalized home care request
- Telemedecine applications (telemonitoring, telesupport, teleconsultation) favor a medicalized maintenance at home
- Medicalized maintenance at home represents an interesting alternative to the placement/stay at health institutions (1-2).

Introduction

Goal of study

- Evaluation of the feasibility and utility of videophonic system used to provide healthcare for patients having cancer and receiving chemotherapy at home.
- The study is carried out in HMC(Home Medical Care) service at the Grenoble University Hospital, in the framework of MCC*(Medical Care Continuity) Project

* http:// www.eten-mcc.org

Materials and methods

- Controlled non randomized study:
  - Telemedicine group: patients receiveing home healthcare and beneficiary from videophonic system.
  - Control groupe: patients receiveing home healthcare and non having videophonic system at home.
- Population:

Adult cancerous patients receiving chemotherapy treatment at home.

Materials and methods

- Inclusion criteria

✓ Having cancer and receiving chemotherapy.

✓ Older than 18 years.

✓ Life expectancy more than 12 weeks.

✓ Stable vital State (vital parameters).

✓ Specialized medical care provided at home.

✓ Patient and general practitioner consent

✓ Logistic feasibility

Materials and methods

- Videophonic system (figure 1) links patient at home to hospital staff and consists of:
  - ✓ **Central station (central station) installed at HMC unit.**
  - ✓ **Mobile station (patient station) installed at patient's home.**

- Each station (patient and central), is equipped with a videophonic kit: personnel computer, digital camera, modem, Microphone, loudspeaker, keyboard.
- Remote control with unique button, allows the patient to receive, send, and finish a call.
- Functions availables at central station: piloting of camera at patient home , control of sound heard by the patient.
- Communication established by HMC staff → directe contact with the patient at home.
- Communication established by the patient → call centre → HMC staff or urgency service

Materials and methods

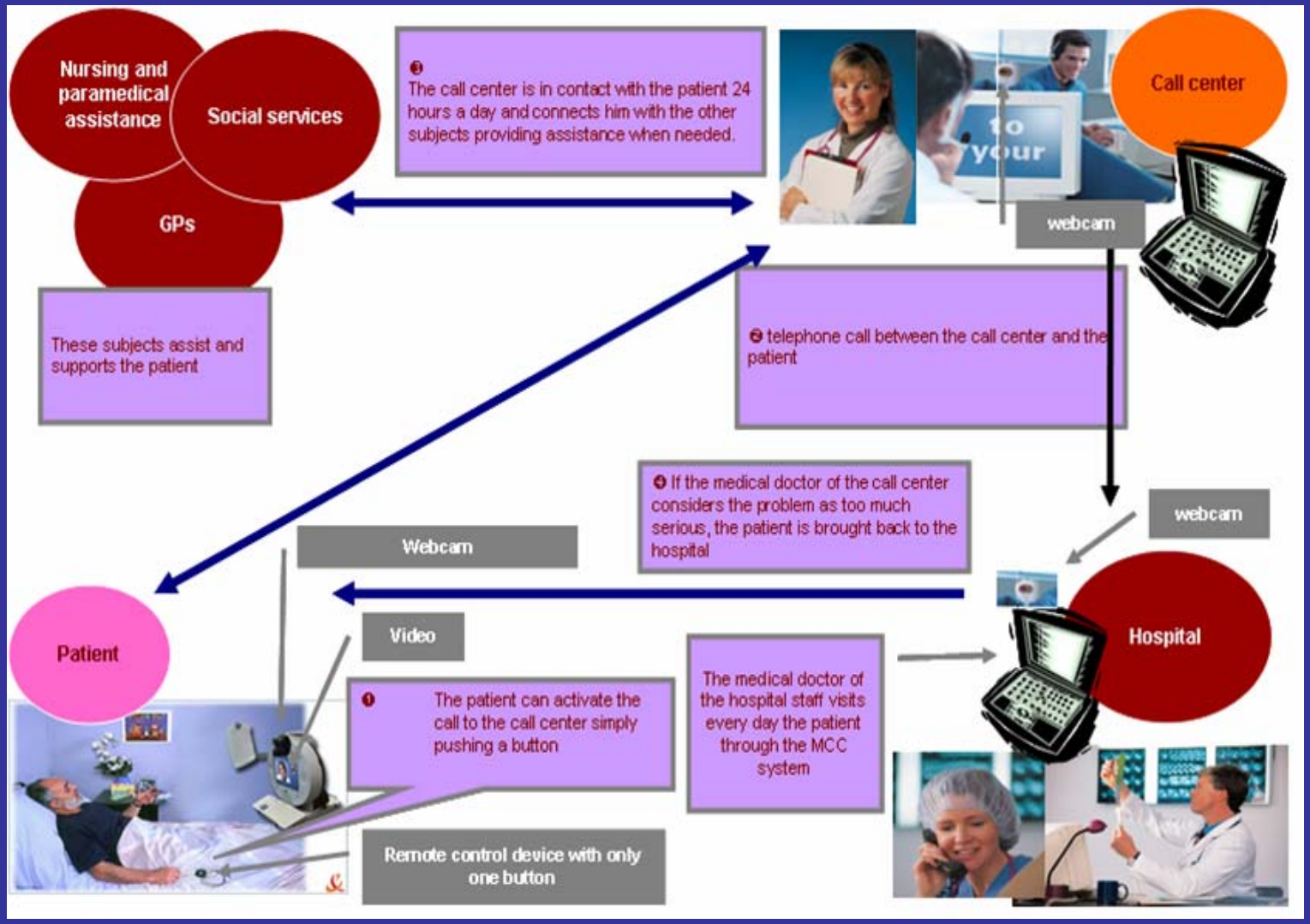

Figure1: Videophonic system for medical care continuity

Materials and methods

- Clinical evaluation
  - ✓**Patient and patient's family satisfaction and acceptability of videophone (questionnaires prepared at the HMC unit for this study).**
  - ✓**Patient functional state (functional capacity index of KARNOFSKY)[3] .**
  - ✓**Patient independence in the daily living activities (index of KATZ ADL)[4] .**
  - ✓**Patient's anxiety and depression(Hospital Anxiety and Depression: Scale HAD)[5].**
  - ✓**Patient quality of life and healthcare quality (SF36 scale and POS scale)[6,7].**

Materials and methods

- The same evaluation tools are used in the two groups, except the patient and patient's family acceptability and satisfaction which are evaluated only in the telemedicine group.
- For each patient:
  - ✓ Inclusion duration for 3 months
  - ✓ 3 clinical evaluations carried out during the study (at the begining, at the midle and et the end).

Discussion

- In spite of the large developement achived in telemedicine field, its use in usual practice at health institutions is still limited(8):
  - ✓ **Patient and careprovider reject (not enough familiar in the socio-medical milieu).**
  - ✓ **Lack of pertinent studies about its utility and effectiveness.**
  - ✓ **Telemedicine activities not covered by health insurance systems.**
- Following items are necessary for telemedicine evaluation :diagnostic test reliability, clinical effects, patient and care provider satisfaction, patient's life quality and economic analysis[9].
- Experience related to using videophony in oncology concerned radiotherapy, teleconsultation, multidisciplinary meeting, e-learning, and professional update[10,11,12]. No one evaluated the delivery of home healthcare.

conclusion

- Telemedicine applications favor a medicalized patient maintenance at home.
- There is a lack of proofs showing the benefits of using technology to provide home healthcare for cancerous patients.
- New clinical researches, like this study, are still necessary in this field.

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