Outcomes of a three year videoconference program for family practice professionals

Magdala A. Novaes[a,c], Kleber S. Araujo[c], Jeane L. Couto[b,c], Elisabeth L. D. da Cruz[c], Tessália V. Bandeira[c], Clóvis Henrique Lima[c], José Oliva A. Segundo[c], Marcello R. Mello[c], Luciana A. de Araújo[c], Gustavo C. C. Rosa[c], Danielle S. Alves[c], Cecília Maria F. de Queiroz[c], Lívia B. B. de Albuquerque[c]

[a] *Department of Internal Medicine, Federal University of Pernambuco, Brazil*

[b] *Clinical Hospital, Federal University of Pernambuco, Brazil*

[c] *NUTES - Telehealth Center, Federal University of Pernambuco, Brazil*

INTRODUCTION

- **Pernambuco is a state of Brazil, located in the northeast region, it has 98,311.616 Km2, 185 cities and around 8.5 million people, most of them living on poverty condition.**
- **Several communities are challenged by geographic and social barriers. Family practice has only been introduced in the last decade in our state, furthermore most cities do not have specialized medical care.**
- **The only solution for health departments of these cities is to provide transportation to their patients so they can receive medical assistance at Recife, capital of Pernambuco.**
- **Several problems arise from this logistics, first, hospitals at Recife cannot support all demand from the state, besides they are supposed to assist only high complexity medical cases. Nowadays, patients suffering from common conditions have been treated at these hospitals resulting in over demand.**

INTRODUCTION

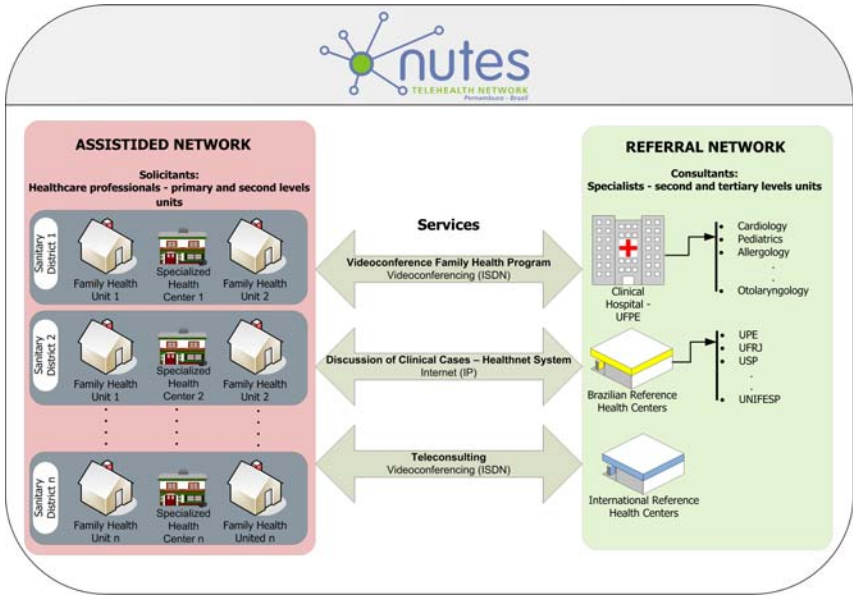
- **Therefore, a telehealth service was proposed to provide support to family practice professionals and reduce referrals to the University hospital leading to faster and better care of high complexity level medical cases.**
- **In 2003, a telehealth network, Rede de Núcleos de Telesaúde (NUTES) de Pernambuco, was established as a pilot project conducted by a research team named TIS (Health Information Technology group) and financially supported by governmental federal funds.**
- **Using videoconferencing technology, family practice professionals at Cabo de Santo Agostinho, Camaragibe, Igarassu and Recife (metropolitan area cities) were connected to specialists at the UFPE University Hospital, in Recife, Brazil. These four cities have been chosen based on referral information provided by the epidemiology department of the Clinics Hospital (HC) at UFPE.**

METHODS

- **A main telehealth center NUTES-HC coordinates the telehealth network and four additional partner sites were connected:**
  - NUTES - PSF Manoel Vigia (Cabo de Santo Agostinho)
  - NUTES - PSF Bairro dos Estados (Camaragibe)
  - NUTES - PSF Santo Antônio (Igarassu)
  - NUTES - Policlinic Lessa de Andrade (Recife)

- **A network among healthcare providers was established involving primary, secondary and tertiary level of care.**

- **Two videoconference based services have been offered to partner's cities, a health continuing education program and teleconsultation on demand.**



METHODS

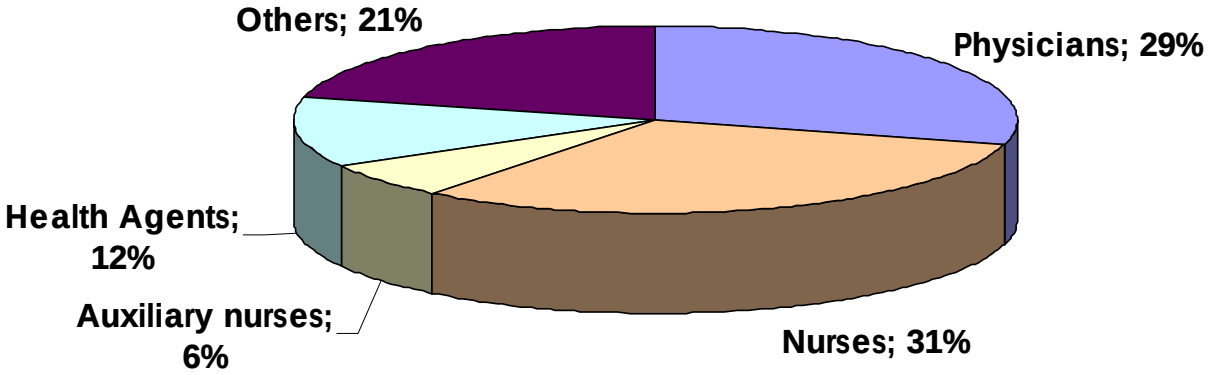
- Each partner's videoconference room is composed by a videoconference dedicated system (point-to-point), a TV, a document camera, a personal computer, a printer, a webcam, a scanner and a digital camera.
- At NUTES-HC the videoconference system is multipoint bridging the partner sites.
- The sites are connected using ISDN lines (Integrated Services Digital Network) in a 384Kb/s rate.
- Partner videoconference rooms have capability of 10-15 people, while NUTES-HC has capacity to accommodate 25 people.
- Technical assistance is available on every partner videoconference room. At NUTES-HC a team composed by information technology, healthcare students and professional, is available to set up the NUTES services.

- Videoconference health continuing education program is provided weekly. Content choice is based on local partners epidemiological data. Most speakers are faculty members. A survey was collected on every session analyzing technical and educational aspects.
- Besides continuing education, our videoconferencing equipment have been used to support clinical care, courses, administrative and clinical meetings, as well.

RESULTS

From August 2003 to December 2005 eighty five videoconferencing sessions were held with 2,300 participations.

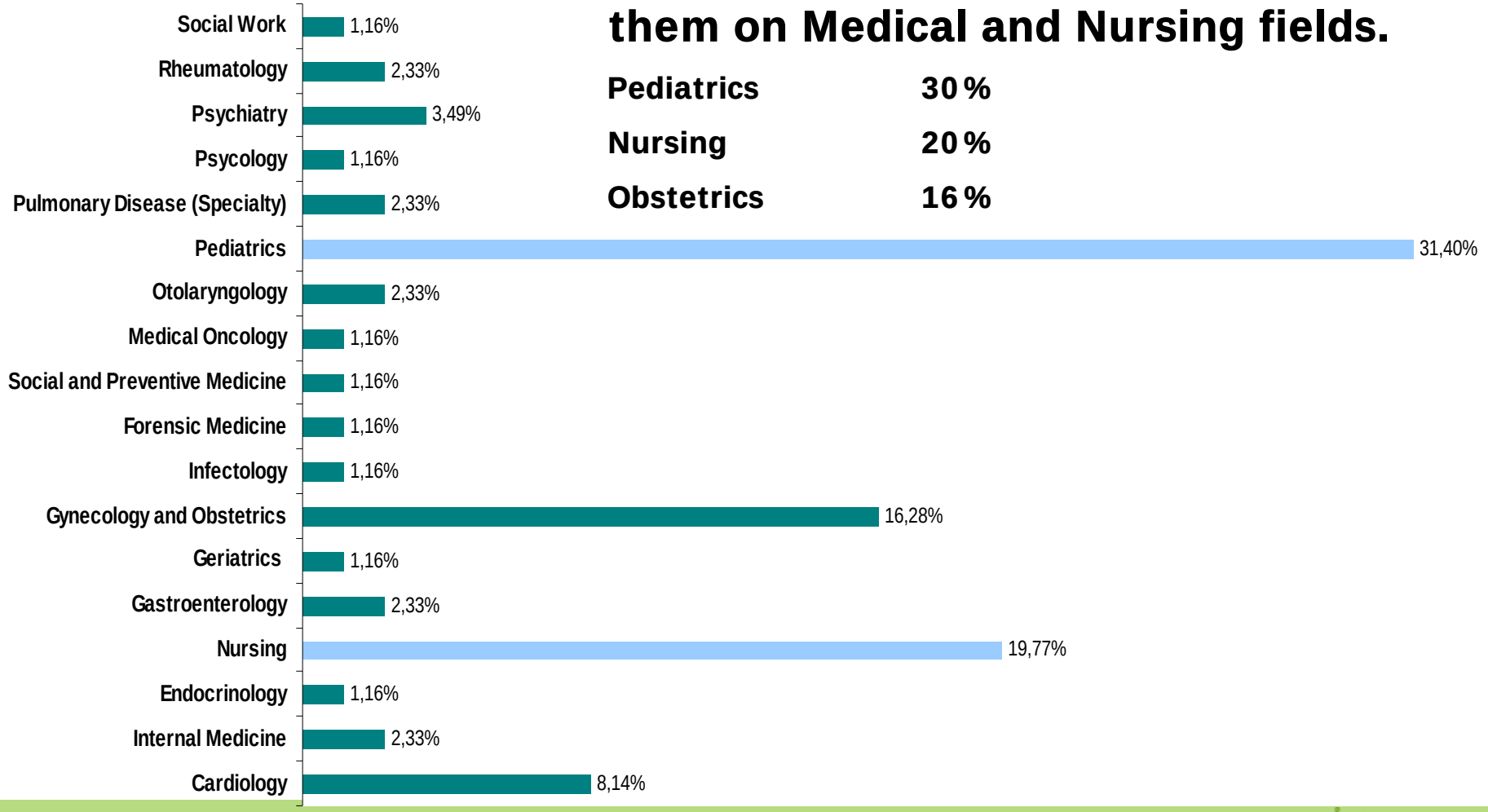
Physicians	29%
Nurses	31%
Auxiliary nurses	06%
Health agents	12%
Other health and administrative professionals	21%



RESULTS

Several specialties have presented videoconference sessions, most of them on Medical and Nursing fields.

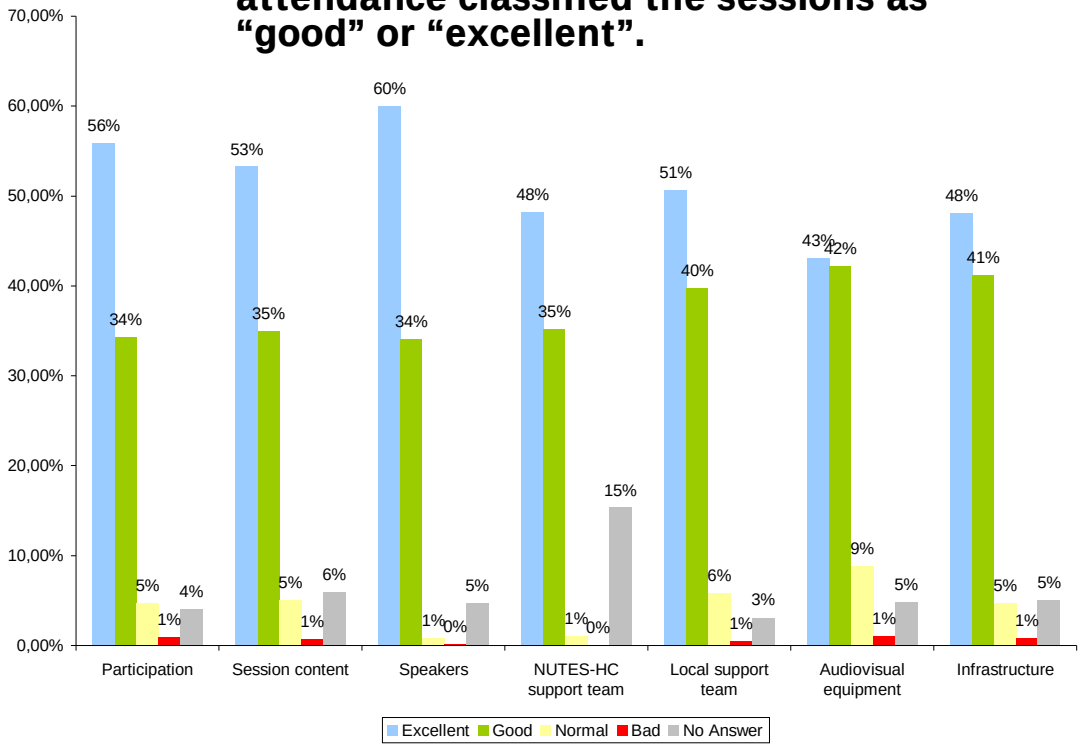
Pediatrics	**30 %**
Nursing	**20 %**
Obstetrics	**16 %**



RESULTS

- **Some examples of presented themes:**
  - Dengue, how to strike?,
  - Fever, how to treat?,
  - Bone tumors,
  - Filariasis,
  - Vaginitis/Vaginosis during Gestation,
  - Cholera,
  - Viral Hepatitis,
  - Hemogram Interpretation,
  - Parasitic Diseases,
  - How to manage Hypertension and Diabetes in FHP (HIPERDIA),
  - Asthma,
  - Schistosomiasis mansoni,
  - Tuberculosis,
  - Breast Feeding: healthy women and baby,
  - Obesity,
  - Leptospirosis,
  - Pregnancy in adolescence,
  - Malnutrition,
  - Diarrheas,
  - Violence,
  - Vaccination in first year of life, etc.

- **From January 2004 to December 2005 a survey was conducted**
- **More then 1000 questionnaires were collected analyzing technical and educational aspects (such as infrastructure, devices, support team, content and speakers)**
- **More than eighty (80%) percent of the attendance classified the sessions as "good" or "excellent".**



DISCUSSION

- **This project was originally designed to focus on teleconsultations, but results demonstrated that continuing education was far more used by health professionals.**
- **Some professional were not comfortable in exposing their lack of knowledge to the specialist.**
  - At a continuing education activity, you can ask questions to the specialist only if you want to, while teleconsultation is a direct confrontation with a specialist
  - Besides that, if the teleconsultation schedule is not introduced as a regular routine in the service, it is easier to order a referral using just a piece of paper with patient name, health problem and specialist required
  - Informing regular teleconsultation schedules could facilitate this process
- **Family practice professionals from remote locations tend to change jobs very rapidly; several teams had to be trained in telehealth every time new professionals were admitted to the unit.**
- **Most speakers were specialists and there is a significant gap between family practice and hospital practice. There are different protocols and resources to assist the patients.**

CONCLUSION

- **Some success factors should be considered in a telehealth program for family practice in public health.**
  - A strategy to get a better professional engagement on telehealth services is first to introduce in their routine a videoconference program for educational purposes. A teleconsultation service should be introduced only after they get used to videoconference technologies.
  - Health Department's managers should be strongly involved and understand the requirements and benefits of a telehealth program to their communities.
    - Telehealth must be included in health policies of the city, allowing financial support for these initiatives as a way to achieve sustainability.
  - Technical aspects should consider not only acquiring equipments, but also maintaining and training staff in telehealth. Communication lines should achieve a good cost benefit ratio concerning the proposed service.
  - Consulting staff have to understand the possibility of reducing inappropriate referrals using a telehealth program, once it is possible to help the primary care professionals solving common clinical problems within their communities.
    - With telehealth both consultants and primary care professionals can better qualify themselves to assist their patients.
  - Telehealth is a strong weapon to provide solutions to solve local problems and benefits all players involved.

REFERENCES

- http://www.ibge.com.br, accessed on 12/01/2006.
- FALK, JW. A Medicina de família e comunidade e sua entidade nacional: histórico e perspectivas. Revista Brasileira de Medicina de Família e Comunidade 2004:1(1).
- http://www.ufpe.br/hc, accessed on 12/02/2006.
- NOVAES, M.A., MATTOS, S.S., BARBOSA, A.K.P., ARAUJO, K.S. Telehealth in Northeast Brazil: a pilot program for the public sector. MEDINFO 2004. M. Fieschi et al. (Eds). Amsterdam: IOS Press. © 2004 IMIA.
- J.R. Moehra,*, J. Schaafsmab, C. Anglinc, S.V. Pantazia, N.A. Grimma, S. Anglinc. Success factors for telehealth -A case study. International Journal of Medical Informatics 75 (2006) 755–763.
- Hersh WR, Hickam DH, Severance SM, Dana TL, Pyle Krages K, Helfand M.Diagnosis, access and outcomes: Update of a systematic review of telemedicine services. Journal of Telemedicine and Telecare. 2006;12 Suppl 2:S3-31.

ACKNOWLEDGMENTS

- **Brazil's Ministry of Health, FACEPE, TELEMAR**

Address for correspondence

Núcleo de Telesaúde (NUTES), Universidade Federal de Pernambuco (UFPE), Hospital das Clínicas, Av. Prof. Moraes Rego s/n, Cidade Universitária, Recife-PE, CEP 50.670-420, Tel. +55 81 2126 3903 Fax +55 81 2126 3904

www.nutes.ufpe.br

Profa. Magdala de Araújo Novaes, e-mail: magdala.novaes@nutes.ufpe.br

Dr. Kleber Soares de Araújo, e-mail: kleber.araujo@nutes.ufpe.br