

Improving quality of life for dialysis patients through telecare

by

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Project Context:

**ATTRACT: Applications in Telemedicine
Taking Rapid
Advantage of Cable Television
network evolution**

Financial Support

**European Commission, DG XIII Health Telematics
B: (4th FP)**

Dialysis Market

Chronic renal failure patients:

- about 1,000,000 worldwide
- ca. 200,000 in Europe
- ca. 800,000 worldwide depend on *dialysis*
- growth rate 8 % per annum (= doubling in 9 years)

Turnover:

- €21 milliard p.a. world-wide for treatment/services
- € 6 milliard p.a. world-wide for renal care products
- in Germany: about 1 % of national health care costs
- enormous labour market and social costs

Aim of the project:

to explore the possibility of improving home care for dialysis patients (initially only for CAPD patients) by adding video-based support

If successful, we expect:

- **the extension of *haemodialysis* and CAPD to more home patients**
- **a gain in quality of life (QoL) for these patients**
- **cost savings for the health system**
- **a competitive advantage for the clinics involved**

Methods:

- **Iterativ discussion of aims, expectations and methods**
- **formulation of hypotheses**
- **process analysis / observation of CAPD service process**

Results:

- 1. Model for the video service**
- 2. Protocol form for each video call**
- 3. Development of further survey instruments (QoL, technology handling)**

Expected short-term benefits from video communications

Medical aspects

- compliance / environmental monitoring
- fluid (peritonitis) control
- catheter exit-site inspection
- psychic condition check

Technical aspects

- assistance in equipment handling

Patient aspects

- improved security / self-confidence; QoL

Risks

- training
- seamless organisational integration
- quality and reliability of technology

Equipment

Constraints:

- **easy to handle, robust**
- **good picture quality under changing lighting conditions**
- **limited table space**
- **acceptable costs**

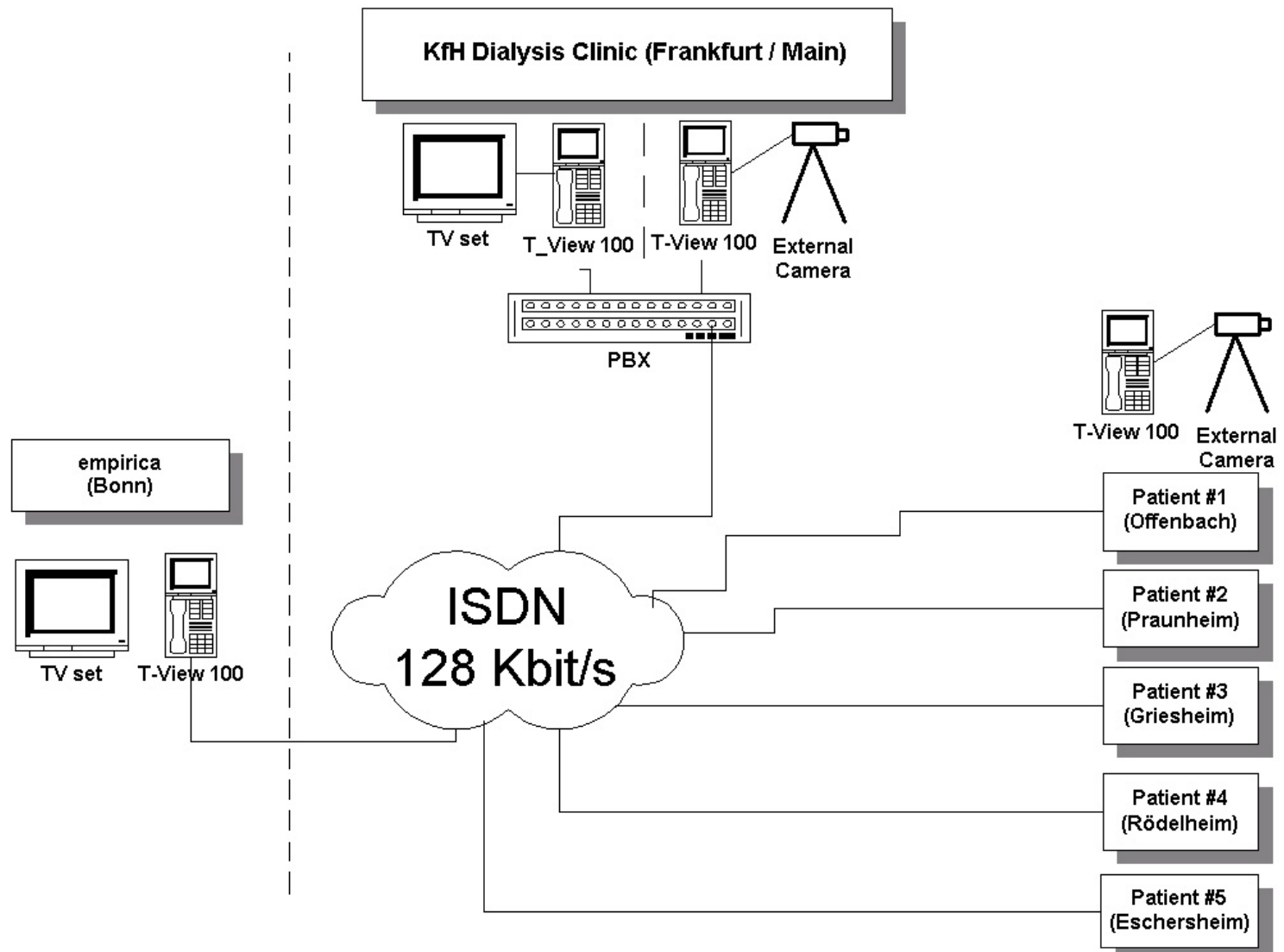
Video communications:

- **T-View 100 videophone (128 kbits/s) [€450]**
- **connected to a standard TV set (service centre)**
- **different analogue and digital video cameras [€200 - 1,000]**





Network of Medical Service for CAPD-Patients in Frankfurt / Main (Germany)



Implementation

- **Training of physicians and nurses**
- **Development of patient information and handbook**
- **Demonstration of video equipment to patients and selection of 1 + n patients**
- **Application for ISDN access and equipment installation**
- **Weekly videophone calls**
- **Surveys: QoL (KDQoL-SF,V 1.2), handling of equipment**

Preliminary results (I)

- Medical aspects**
- compliance with hygienic precautions/ environmental monitoring not possible
 - fluid (peritonitis) control possible
 - catheter exit-site inspection only with higher quality camera and after "learning-by-doing"
 - psychic condition check ok
 - consultations of smaller centres with larger clinics
- Technical aspects**
- assistance in equipment handling difficult (colourless, transparent tubes)

- variations in the quality of equipment
- very poor installation service

Preliminary results (II)

- Patient aspects**
- improved security / self-confidence
 - particularly during transition phase from hospital to the home
 - for patients living alone

- Risks**
- training & learning efforts acceptable
 - organisational integration easily achieved (equipment in consulting room; video calls on days without scheduled consulting hours)
 - reliability of technology - after successful installation - not problematic