The Vitaphone Tele-ECG System: Telemonitoring of patients with cardiac dysrhythmia

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Rhythm disturbances: facts & figures

- 25% of adults suffer from paroxysmal dysrhythmia with ECG changes
- 1% of the total population suffering from atrial fibrillation with a 5-fold increased risk for stroke
- 150,000 deaths/year due to sudden cardiac arrest
- Most common problem in internistic-cardiologic practice
- Significant reduction of quality of life
- Paroxysmal occurrence
- Delayed diagnosis
- Clear diagnosis inevitable for risk stratification
- Significant burden on the health care budget
Cases per year: n = 517,699; 10% of cardiac patients (US)

**Costs approx. $1.3 billion/y**

- not classified
- Conductance Disturbance
- Sick Sinus Syndrome
- Extrasystole
- Junktional Rhythm
- Atrial Flutter
- Atrial Fibrillation
- Ventricular Tachycardia
- Ventricular Fibrillation
- Cardiac Arrest

*The Lancet*, 1993;341:1319
Telemedical solutions
Vitaphone Tele-ECG-Card 100 IR

- indications: symptomatic dysrhythmias, dizziness, palpitations, rapid heart rhythm
- wireless transmission of ECGs; easy to operate
- lightweight, creditcard size
Telemedical solutions
Vitaphone Tele-ECG-Loop-Recorder

- for asymptomatic rhythm disturbances, i.e. tachycardia, bradycardia, atrial fibrillation, pauses and syncope of unknown cause
- automatic event recording
- available as 1- or 3-channel device
- just 78 Gramm; easy to operate
- automatic transmission of ECG via Bluetooth
- recognition of malposition of electrodes
Telemedical process

ECG recording

Data transfer via telephone landline or mobile phone

Data transfer to server; Data storage & visualization via REMOS Software

Data transfer via Email or Fax to Doc

Data analysis and therapeutic management

Telemedical process
Analysis of the ECG

- measurements of ECG segments
- automatic R-recognition
- export and local storage in PDF format
- comfort functions, i.e. zoom
Valuable diagnostic options
- No inpatient admission for diagnostic purposes
- Monitoring of medication treatment
- Pacemaker spike recognition
- Shorter inpatient stays

Key benefits
- Transmission acoustic and digital (exclusive)
- Audio recording of symptoms by patient (exclusive)
- ECG at destination within minutes
- Conclusive diagnosis within 8-10 days
- High diagnostic yield
- ECG-integrated support for data evaluation (exclusive)
Design: prospective, controlled
Collective: 104 Pts with undiagnosed tachycardial rhythm disturbances
(Male: n = 24; Female: n = 80; Age: 50 +/- 16 Years)
Observation Period: 3 Months/Patient

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<th>reason for contact to the TSC</th>
<th>total</th>
<th>emergency</th>
<th>hospital admission</th>
<th>consultation</th>
<th>advice</th>
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<td>10</td>
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<td></td>
<td></td>
<td>36</td>
<td>26</td>
<td>87</td>
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- minus 35 emergency dispatches
- minus 16 hospital admissions
- minus 77 visits to family physicians or cardiologists
- efficient diagnostic tool
- cost effective therapy with a significant reduction of costs
- reduction of unnecessary hospital admissions
- easy to operate; simple handling
- increased quality of life for the affected patient
The way forward …

Network thinking – act jointly