Association for Ukrainian Telemedicine and eHealth Development, TREDEX Ltd (corporate member)

TELECARDIOLOGY AND TELE-ECG NETWORK IN UKRAINE – ACHIEVEMENTS AND CLINICAL EFFICIENCY

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Wilhelm Einthoven

Trans-phone ECG since 1905
1950-1960 – space telemetry
1970-1990 – civil ECG telemetry

photo granted by dr.G.Kirzhner
Telemedicine system “VOLNA” ("Wave")

Analogous system for ECG transmission

30 years of telecardiology
First Tele-ECG center in Ukraine – Poltava, 1969
In Poltava region
GOOD quality!

BAD quality!
TELECARD
telemedicine system with digital transmission
Fucntions of TELECARD network

1. Diagnosis
2. Control
3. Learning
4. Management
TELECARD work places

Nikolaev

Donetsk

Kiev

Kharkiv
TELECARD in 2005-2008 at regional level

2005-2006 – 8622
2007 – 10627
2008 – 14109
Growth – 33%

- **650-3500 teleconsultations per year**
- **100-1000 teleconsultations per year**
- **10-180 teleconsultations per year**
- **30-0 teleconsultations per year**
TELECARD in 2005-2008 at rural level

2005-2006 – 3383
2007 – 5775
2008 – 10605
Growth – 84%

500-1000 teleconsultations per year
150-500 teleconsultations per year
100-350 teleconsultations per year
120-0 teleconsultations per year
- 12-channel ECG
- Digital transmission
- High noise-immunity (even at parallel phone lines)
- One-call teleconsultation
- Easy to operate (one button)
- ECG+Holter+Telemedicine
- Cheap
ECG transmissions

- Success: 96.50%
- Non-fatal malfunctions: 3%
- Re-transmission needed: 0.50%
Heart diseases at Poltava region

Marienko et al, 2007-2009
Total heart diseases mortality (active TELECARD)

Marienko et al, 2007-2009
MI mortality at Poltava region (active TELECARD)

Marienko et al, 2007-2009
After ECG transmission
(data from Thernopil region)

- 63% Teleconsultation
- 37% Teleconsultation + Expert travel
Clinical reasons for TELECARD teleconsultations
(data generalization from all regions)

<table>
<thead>
<tr>
<th>Medical Reason</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Myocardial infarct or chronic ischemia</td>
<td>11-63%</td>
</tr>
<tr>
<td>Different arrhythmias or conductivity disorders</td>
<td>14-57%</td>
</tr>
<tr>
<td>Other cardio-vascular pathology</td>
<td>3-14%</td>
</tr>
</tbody>
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Myocardial infarct or chronic ischemia

Different arrhythmias or conductivity disorders

Other cardio-vascular pathology

Graphs showing electrocardiograms.
Annual Special Event
ALL-UKRAINIAN SATELLITE SYMPOSIUM

“URGENT TELE-ECG DIAGNOSTIC IN UKRAINE: SUCCESSES, PROBLEMS, PROSPECTS”
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