Assessing Patient Case Management Services with Adult Congenital Heart Disease Sensed Data

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Vasileios. G. Statamopoulos,
G. Karagiannis, M. Gatzoulis
(Royal Brompton and Harefield NHS Trust)
G. Roussos (Netsmart Technologies Ltd)

Contents
• Partners
• What is Panacea-iTV
• The Benefits
• The Users
• Patients Usage Scenario
• How has Panacea-iTV been Evaluated
• What has been the first user feedback
• Future plan

Partners

What is Panacea-iTV?

• Panacea-iTV is a user friendly and personalised home care system enabling the citizens to monitor their health and at the same time to access health information and guidance
• Through Interactive Digital TV it offers:
  - signs and symptoms monitoring
  - clinical advice
  - medication reminders
  - education
What are the Benefits?

- Reduced rates of Hospitalisation
- Reduce outpatient clinic visits
- Improve quality of life for patients/citizens
- Increase life expectancy for patients
- Financial benefits for Healthcare Systems

Who are the Users?

- Patients: Users who want to manage their own health and/or need specialized healthcare services
- Clinicians: Doctors & Nurses

How do Patients use Panacea-iTV?

Follow a treatment plan that includes:
- Measurements transmission (blood pressure, weight, oxygen saturation)
- Signal transmission (Electrocardiogram ECG)
- Answers to signs & symptom questions
- Medical advice
- Medication dosage adjustment
- Medication reminders
- Schedule of health management actions
- Educational Material

How do clinicians use Panacea-iTV?

Clinicians use Panacea-iTV WEB application to:
- Evaluate patient condition
- Review patients transmitted data
- Review/Edit patients schedule
- Review and adjust medication dosage
- Provision of Educational Material
Default Screen

- Each time Mr. Green successfully logs in to the Panacea system, his daily schedule appears.

Mr. Green wishes to view his weekly schedule.

He presses the purple button to access his weekly schedule.
Blood Pressure Measurement

- Mr. Green gets ready to measure his Blood Pressure.

He presses 'OK' to select the desired type of measurement.

**Transmit Measurements**

- Blood Pressure & Heart Rate
- Oxygen saturation
- EKG

**Transmit Measurements - Blood Pressure**

Please enter the Blood Pressure Monitor to measure your blood pressure and heart rate.

Press 1 after you take the measurements to transmit it.

If you don't use the Blood Pressure device, please press 2 to enter the measurement manually.

Please see instructions on how to use the Blood Pressure Monitor.
The ‘systolic blood pressure’ box is highlighted by default.

He uses the number keys to enter a numerical value.

Transmit Measurements - Blood Pressure

The Set Top Box:
• contacts the Panacea Server and submits the Blood Pressure and Heart Rate measurements.
• receives and displays the Panacea Server’s reply.

Communication with Panacea Server
**Transmit Measurements - S&S Questions**

- The first question is selected by default.
- There is a default answer for all the questions.

He uses the left/right arrows to select a different answer.

**Communication with the Panaceaia Server**

- The set top box submits the completed questionnaire to the Panaceaia Server.

**Main Menu**

- He uses the down arrow to move to the desired option.

**Log Out**

- Thank you for using Panaceaia TV Services!
**PANACEA-iTV Pilot Sites**

- **UK**
  - Brompton Hospital, London
  - Adult Congenital Heart Center, Congenital Heart Disease Patients

- **BE**
  - Univ. Hospital, Gent, Dept. of Obs and Gynae, High Risk Pregnancies

- **GR**
  - Hippokrateion Hospital, Thessaloniki
  - Dept of Endocrinology, Diabetic type II
  - Hippokrateion Hospital, Thessaloniki
  - First Dept of Obs & Gynae, Infertility couples

**Target Groups**

<table>
<thead>
<tr>
<th>Healthcare needs addressed by Panacea-iTV</th>
<th>Diabetes</th>
<th>ACHD</th>
<th>Pregnancy</th>
<th>Infertility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient monitoring + education</td>
<td>Chronic disease elderly patients hospitalized often</td>
<td>Chronic disease young patients hospitalized often</td>
<td>Young women, general population short term</td>
<td>Sub-acute condition, young couple highly motivated for ongoing education</td>
</tr>
<tr>
<td>CTG monitoring</td>
<td>Reduce Hospitalisations</td>
<td>Reduce stay in the hospital and clinic visits for high risk pregnancies</td>
<td>Reduce stay in the hospital and clinic visits for high risk pregnancies</td>
<td>Educate couples so that physicians</td>
</tr>
<tr>
<td>ECG monitoring</td>
<td>Patient monitoring + clinical advice &amp; treatment</td>
<td>Patient monitoring + communication with clinician + education</td>
<td>Intensive patient monitoring + education</td>
<td>CTG monitoring</td>
</tr>
</tbody>
</table>

**Patients view regarding Panacea-iTV (21 patients)**

- Intention to use the system in the future and recommend the system to other patients
- Belief that the system is easy to use
- Perception of the system as a useful, efficient and appropriate for use for their condition
- Perception that the system provided easy access to their personal data and profiles
- Ease of understanding information provided by the system and relevant to their condition
- Overall satisfaction with the quality of experience

**ACHD Patients’ Concerns**

- Time required learning the system
- Concerns about the confidentiality of the system
- The system can become uninteresting to use
- Concerns with technical problems using the system
- Time consuming sessions
Clinicians' Point of View

- Panacea-iTV was useful
- Assisted effective patient monitoring
- Functional and easy to use

Critical Findings

- The majority of the participants did not feel that the system affected their relationship with their doctor
- They considered it as a useful complementary tool in the care they receive from the hospital and were interested to participate in future trials
- The system was also well received by clinicians

Future plans

- Effectiveness study
- Randomised controlled trial
- Investigating role of potential partners
- Seek a complementary role to the NHS digital TV system