**COPD – Endurance Training via Mobile Phone**

Shu Hui Hung, MS, Huan Chin Tseng, BS, Wen Ho Tsai, MS, Hsin Hung Lin, BS, Jen Hsien Cheng, MS, Yi Ming Chang, BS, National Center for High-performance Computing, Hsinchu, (NCHC) Taiwan, Republic of China

**Abstract**

The purpose of this study is to encourage patients who suffer from Chronic Obstructive Pulmonary Disease (COPD) to get regular daily exercise via walking. When the patient is exercising at home, the platform generates a short message service (SMS) message to the patient’s mobile phone telling him/her at what level of intensity (i.e. music tempo) he/she should be exercising.

**Introduction**

COPD patients are often in poor health and not physically fit. They often suffer from symptoms such as breathlessness, especially with the onset of ageing. This state of poor health sometimes leads to bouts of depression that, in turn, sometimes result in COPD patient developing suicidal tendencies. Even though their physicians offer them the shuttle walking test during their clinic visit, the patients are often not willing to exercise at home because they are afraid they are too weak and might die if they stress their bodies too much doing exercises.

**Purpose & Methodology**

The major purpose for the project is:

- To provide COPD patients with a regular, light and flexible exercise program that improves their health and well-being.
- To develop a customized exercise service tailored to individual patient needs.
- To automatically provide COPD patients, via their mobile phone, a SMS message suggesting they increase or decrease the level of exercise intensity.
- To improve COPD patient’s physical and mental health and, by so doing, reduce or eliminate the number of COPD patient suicides.
- To provide a service that encourages COPD patients to get regular exercise by daily walking.

As the methodology, this platform uses a special formula to determine what music tempo the patient should use to benefit most from his/her exercise program (Figure 1).

**Conclusion**

Though the project has proven exceedingly successful in helping to treat the physical and mental problems often associated with COPD patients, there are still some issues that must be resolved before the project reaches peak effectiveness. If the mobile phone hardware and operating system were to be standardized, the treatment of COPD patients using the walking exercise program would be greatly improved.