

# MI-HEART: a Comprehensive Management System to Deliver, Monitor and Measure Efficacy of Individualized Web-based Education

Yves A. Lussier<sup>§</sup>, P.Eng., M.D., Rita Kukafka<sup>§</sup>, Dr.PH., MA,  
Jianhua Li, M.D., Vimla L. Patel, Ph.D., James J. Cimino, M.D.

Department of Medical Informatics, College of Physicians and Surgeons, Columbia University, New York

**Problem** Demonstrating the efficacy of unsupervised self-administered education is challenging, when compounded with distance learning and the absence of any interaction with clinicians, web-based patient education may appear intractable.

**Background and Significance.** A variety of Web education delivery systems have been proposed by researchers or the commercial community<sup>1</sup>, however very few have produce theoretic-grounded individualized web education<sup>2</sup>.

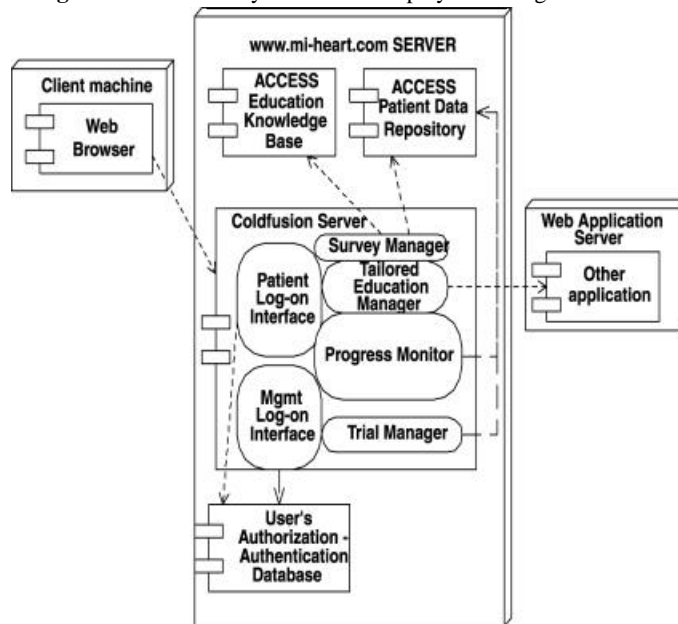
**System Solution.** To our knowledge, MI-HEART is the first system providing efficacy measurements of internationally accessible self-administered web education grounded in established health education science and dynamically tailored to the patient history. The MI-HEART Clinical Trial is a pre-test post-test randomized study that measures the changes in cognitive variables of patients exposed to tailored or non-tailored self-administered Web-based and paper-based education<sup>3</sup>. It incorporates education process monitoring and efficacy measurements of based on several behavior models (HBM, SCT), and includes somatic and emotional awareness perceived threat, expectations of symptoms, self-efficacy and outcome expectations to explain the response of an individual their symptoms.

## System Description.

### 1) Patient Interaction Modules

- a) **Online Survey Manager** (Self-Administered Questionnaires):
  - i) Measurement periods: pre-intervention, post-intervention (1,3,6 months),
  - ii) Well validated instruments / a few original ones,
  - iii) Demographics and Medical History,
  - iv) Efficacy Measurements:
    - Knowledge • Cognitive Model states.
- b) **Tailored Education Manager**<sup>4</sup>:
  - i) Consistent Web-Portal / user interface following design, usability and accessibility guidelines,
  - ii) Knowledge-base for delivery of tailored education (Audio, text, graphics),
  - iii) Medico-administrative and Clinical Database,
  - iv) Interactive calculators and risk assessments .

Fig. 1 - MI-HEART System -UML Deployment Diagram



### 2) Management and Reporting Modules

- a) **Progress / Process Monitor**
- b) **Clinical Trial Management System:**
  - i) Patient Accrual Monitoring (emails, web portal),
  - ii) Data Collection Monitoring: Interactive reports, integrity and comprehensiveness tests).

**Progress Report.** 62 patients have applied to join the clinical trial, 9 of which have already completed it.

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<sup>§</sup> These authors have contributed equally to the work