Creating a Personal Health Platform That Matters:

A Nation Wide Hybrid e-Health Reform Perspective

Digital-based patient-centered healthcare platforms and services (**Hybrid e-Health**) allow patients to actively participate in managing their own care, using personally tailored interactive tools. Such empowerment increases patients' willingness to adopt actions and lifestyles that promote their health, as well as improve follow-up and compliance with treatment in cases of chronic illness .

With the vision of engaged patients having better compliance, better outcomes and better health, Clalit Health Services, the second largest coordinated care organization in the world (14 hospitals, 1300 primary and specialized clinics, 650 pharmacies and above 4.2 million members) provides one of the biggest, diversified and advanced world-wide Hybrid e-Health end-to-end solutions.

Three years post launch, the Hybrid e-Health suite has created a dramatic change both at the patient's and the national levels, influencing clinical quality, efficiency, availability, accessibility and transparency of healthcare services. As of December 2011, more than 1.56 million patients use our Hybrid e-Health and mobile Health suite monthly, with over 2.4 million interactions every month.

Large scale deployments of end-to-end hybrid e-Health solutions (vs. current health apps hype) are very scarce, as this tailored-fit suite demands expertise and experience in integrating multidisciplinary knowledge – clinical, ethical, legal, technological, data security and privacy, liability, innovation, change management and more.

Successful implementation of e-Health and mobile Health solutions is a result of exact mapping of target population needs, matched to best of breed technology means and combined with patient outreach – personal healthcare services delivered by professionals.

Our Hybrid e-health suite is considered one of the sole world-wide, large-scale, end-to-end, <u>actually operating</u> e-Health success stories, reflecting a robust strategy, converted into a practical R&D methodology and implementation, which are dynamically updated as the market evolves.

Our Hybrid e-Health and mobile Health suite is is comprised of the following key elements:

1. The personal health record layer (what the patient can **SEE**) presents patients with their medical history, including diagnoses, allergies, vaccinations, laboratory results, hospital discharge letters etc. A unique medico-legal methodology was developed to handle medical data privacy issues. All medical terms are accompanied by relevant explanations and guiding as to what the patient's next step should be. This information prescription (Ix) is reviewed by 2 different experts and "translated" into layman's language by a medical linguistic editor.

2. The personal knowledge layer (what the patient should **KNOW**) presents patients with personally tailored preventive medicine and health promotion recommendations, such as mammography and lipid profile screening recommendations, according to patient's sex, age, medical history, and medical tests history. Deploying persuasive technology methodologies, each recommendation includes textual, visual and interactive content components in order to promote patient's engagement. This module has proved itself as a true contributor to significant improvement of clinical quality: compliance rate are, on average, 63.6% higher than for a matched control group of patients informed about their needed tests by traditional means – during a physician visit or through by a brochure.

3. The personal health services layer (what the patient can **DO**) enables patients to carry out administrative and clinical self-services. These include the ability to refill chronic prescriptions, e-consult their physician or a pharmacist a-synchronously (via secured 1x1 platform) and synchronously (via video-conference), schedule clinic visits, and more.

4. The Quantified Self layer (what personal metrics the patient can **MONITOR**). Driven by the idea that collecting detailed personal data can help make better choices about one's health and behavior, this layer is a turning point regarding a more proactive approach to health promotion and chronic disease management. Sensors infrastructure include the expanding selection of smart-phone apps,

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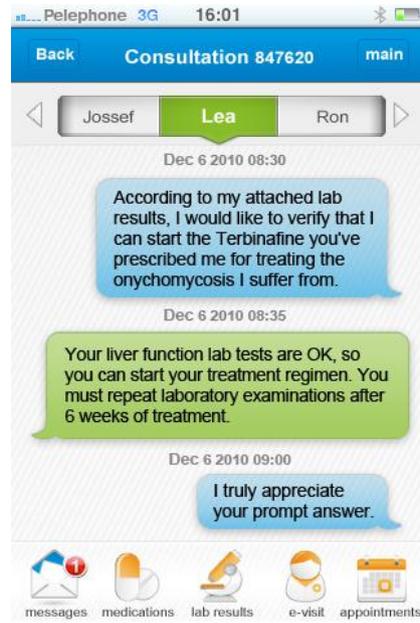
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and various consumer wearable bio-sensors that allow remote physical examination, monitoring & broadcasting of various physiological measurements such as physical activity, food intake habits and sleep patterns.

Real time, video conference, pediatric consultation

m-Consultation

5. The hybrid envelope, i.e. the **actual reaching out to patients** is the critical long-run key success factor for the e-Health and m-Health platforms: **the involvement of professional medical case managers who follows the patient's personal metrics and advises upon them**. The Hybrid envelope includes services which provide a wide range of medical services to patients <u>at their home</u>: smart vital sign sensors which transmits patient's data to a professional interpretation and act-upon center through Bluetooth, WiFi and GPRS technology, interactive digital pillbox which addresses the problem of medication non-adherence with a combination of technology which captures medication adherence information and trained pharmacists which review each patient's information, home-lab which provides full lab services (blood & urine) at patient's home, and more.

<u>Value case is derived from four main categories</u> :

1. Improving healthcare operational efficiency generates direct savings compared to current face-to-face alternatives.
2. Improving medical quality through health promotion, prevention of disease deterioration through self-care, and early detection.
3. Improving quality of service through improving service response time, availability, accessibility and transparency.
4. Bringing unique and innovative set of personalized e-Health services with true added value to patients, puts the medical team and the healthcare provider/insurer in a leadership position compared to its competitors, and creates new business opportunities.

One cannot over emphasize the crucial rule of medical teams' change management in the success of e-health and m-health adoption. Medical teams often raise significant resistance regarding the risks linked to "too much automated self-care" and the "loss of medicine cornerstone – the personal touch between the physician and the patient". Unfortunately, too often this element is being under-evaluated, leading a significant gap between technological capabilities and actual usage.

Our methodology for change management includes includes the following 3 core elements:

1. "What's really in it for me": e-Health services must present true added value not only for patients, but for medical teams as well. The development process of a new e-Health service includes an exact mapping of driving incentives for each medical team sector – physicians, nurses, pharmacists and administrative personnel.

2. "Change Agents": to successfully manage a large scale persuasive process, we treat intra-organizational human resources as primary target group. Harnessing the persuasive power of ~40,000 employees has the potential of converting each patient-medical team interaction into an exposure opportunity to the new era of participatory medicine via e-health and m-health channels.

3. Implementation waves and change-support arrow: intra and extra organizational marketing wave leverages the focus of the organization and target populations to a defined time span. Every implementation wave has a structured infrastructure of sub-stages which include: cross organizational mapping and identification of early adopters and stakeholders relevant to the implementation wave, mapping positive or negative perceptions and designing specific marketing approaches for the distinct target groups, running conflict-prevention activities such as advanced tackling of potential resistance, conducting intensive training and presentation sessions for groups of implementers, and training change-agents with resistance-management behavioral techniques.