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Program/Project Purpose: Coronary heart disease (CHD) is the second leading cause of cardiovascular deaths among Chinese population. The rapid growth of mobile technology presents unique opportunities for improving secondary prevention, which requires long-term engagement of healthcare providers and patients. Yet few mobile health studies have targeted both patients and providers for CHD secondary prevention.

The study aims to develop a multifaceted mobile health intervention that includes: 1) a provider-facing mobile application (App) to guide medication prescription, and 2) a patient-directed text message/voice call system to promote medication adherence and behavior modification. The development phase lasted from July, 2014 to May, 2015.

Structure/Method/Design: We conducted a physician needs assessment through surveys (n = 50), in-depth interviews (n = 6), and a focus group discussion (4 participants) in three community healthcare centers in Shanghai. We developed patient-directed text-messages based on literatures and invited physicians for evaluation. We synthesized iterative prototyping and stakeholder input to refine the design of the android-based App, and used server with spring Model View Controller, Hibernet framework and MySQL database. We relied on cloud communication technology to set up the voice call system. Encryption and role-based passwords were adopted to ensure data security. We also conducted extensive beta testing internally. IRB approval was obtained from Fudan University and Duke University.

Outcome & Evaluation: We found out that community physicians were interested in a mobile-health solution to improve evidence-based CHD prevention. Based on inputs from physicians, we developed an android-based bilingual App that provided decision support for medication prescription and captured patients' information. In order to support a 12-week pilot testing, we developed a bank of 60 text messages and an automatic text message/voice call system. Extensive beta testing suggested that the provider- and patient-facing interventions were seamlessly integrated and were ready for pilot testing.

Going Forward: Primary technical challenges include: 1) constraints on the number of messages sent simultaneously; 2) missed voice calls cannot be tracked and repeated automatically. Future studies may choose text messages only and set message sending intervals.

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Dengue chat: A novel web and cellphone application promotes community-based mosquito vector control

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Program/Project Purpose: The mosquito-borne diseases dengue, chikungunya and Zika continue to expand dramatically throughout the world in large part due to failed efforts in vector control. The most sustainable approach to curb this expansion is through integrated *Aedes* control strategies that incorporate community-based interventions. *DengueChat* (www.denguechat. org) is an interactive cellphone and web platform that combines mobile technology, entomological data collection, clear information, and game theory concepts to motivate communities to participate in vector control. Residents affected by dengue and chikungunya are the best source of information about active and potential mosquito breeding sites and therefore the best agents for their elimination. *DengueChat* (a) crowd-sources the identification and mapping of vector breeding sites; (b) motivates communities to act; (c) embodies a user-centered and collaborative model of software design; (d) promotes civic engagement ; and (e) involves residents in public health education.

Structure/Method/Design: We developed *DengueChat* through a collaborative strategy of software production involving young user-residents in Brazil, Mexico, and Nicaragua. *DengueChat* crowd-sources the identification of breeding sites through photographic evidence, generating data that appear on the website as graphs and relevant information. Users take a second photograph with their cellphones to document the elimination of the breeding containers. The web interface is interactive, allowing residents to create their own profiles and blogs and to exchange information regarding dengue and chikungunya in their neighborhoods. *Dengue-Chat* features educational components and social networking that also relate to other relevant issues in the community. Using the effective communication strategy "SEPA" (Socializing Evidence for Participatory Action) it engages affected communities in the active management of mosquito foci. *DengueChat* was piloted in five neighborhoods in Managua, Nicaragua for one year in 2015. Baseline entomological surveys were carried out prior to implementation. Teams of volunteer youth brigades deployed *DengueChat* under the supervision of a project facilitator. Users earned badges and points for their documented efforts in identifying and eliminating breeding sites.

Outcome & Evaluation: Results from the pilot studies are informing app refinement and the development of a native smartphone version. The pilot provided direct feedback regarding the impact of *DengueChat* in vector control and its potential for deployment on a wider scale.

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