Scorecard for NCDs

Andrew E. Moran*, Jagat Narula[†]
New York, NY, USA

Noncommunicable diseases (NCDs) have risen to be a top public health priority in high-, middle-, and low-income countries alike. Most of the risk factors and high-risk behaviors upstream of NCDs have no symptoms, and often people do not associate today's behavior choices with subsequent disease. As the proportion of the population unaware of NCD risk factors in population-based surveys attests, presence of NCD risk factors is often unknown to the affected individuals and to the health system. In the campaign to control NCDs, the high-income nations have several advantages: a well developed health-delivery and risk-factor surveillance infrastructure, adequate numbers of qualified health professionals, and, increasingly, electronic medical records used by health care practitioners for the purposes of individual diagnosis and monitoring and system-wide surveillance. Disparities among nations in these resources might lead to the conclusion that low-income nations need to be *brought up to speed* by adopting the NCD control tools of the high-income world.

However, innovations leading to better health need not always flow from high- to low-income countries. An example is the community health worker movement, which originated in different forms in China, Sub-Saharan Africa, Indonesia, and Latin America, only later becoming a model for chronic disease management in high-income nations [1]. In terms of delivering health care and health promotion by digital technology, low- and middle-income nations have advantages: mobile cellular technology and *smart phones* are becoming ubiquitous in these countries, and their younger populations are willing to adopt new technologies. Indeed, if citizens of low- and middle-income nations are using mobile devices to do banking and request government services, then mobile health care, health education, and health promotion will be adopted soon. Already, mobile applications are being used in low- and middle-income countries to allow patients to pay for clinic visits, provide remote video conferencing with doctors, monitor pregnant women, and remind HIV patients to take their antiretroviral medication [2].

In this context, the Digital Health Scorecard introduced by Ratzan et al. in this issue of *Global Heart* represents a new mobile software application for NCD education and prevention [3]. Seven major NCD risk factors were chosen: overweight/obesity, low physical inactivity, tobacco use, harmful alcohol use, elevated cholesterol, blood pressure, and hyperglycemia. Risk factor levels and overall NCD risk are presented to the user in simple color codes and a numeric scale. The relative importance of risk factors is tailored to specific geographic regions using a weighting procedure based on the Global Burden of Disease 2010 Study comparative risk assessment (CRA). The CRA combines region-specific risk factor relative risks and risk factor prevalence to calculate each region's population-attributable fractions for diseases. It should be noted that the Digital Health Scorecard uses the NCD relative risks from the CRA, not the regional prevalence, which is appropriate for the individual risk assessment function of the scorecard. Risk factor prevalence in the larger population should not be important for weighting risk factors at the level of an individual. Additionally, there is a surveillance function; risk factor information is uploaded (without compromising individual privacy) and aggregated at the population level. This risk factor surveillance data might be biased (by self-selection of users or selective reporting) and would require validation by population-based risk factor surveys in the same population.

A mobile NCD education and risk assessment application has the potential to expand the reach of the prevention strategy, and low- and middle-income nations may be the proving ground; however, the consequence of the *direct-to-consumer* health promotion and risk assessment is hard to anticipate where chronic disease care itself is unpredictable and not uniform. Where along the continuum from risk factor to disease should health professional monitoring be introduced into the technology? Are privacy protections adequate to reassure individual users that his or her health information will be protected? How well will health promotion compete in a digital environment crowded with advertisements promoting tobacco, alcohol, and unhealthy processed foods? These questions will likely be answered relatively soon as the promise of mobile health technology expands along with the global mobile phone network. We should, however, be cognizant that mobile technology will complement functional health care delivery and risk factor surveillance systems but will not replace them.

REFERENCES

1. Lehmann U, Sanders D. Community health workers: what do we know about them? The state of evidence on programmes, activities, costs and impact on health outcomes of using community health workers. Geneva: World Health Organization; 2007.
2. Information and Communications for Development 2012: Maximizing Mobile. Washington, DC: The World Bank; 2012.
3. Ratzan SC, Weinberger MB, Apfel F, Kocharian G. The Digital Health Scorecard: a new health literacy metric for noncommunicable disease prevention and care. Glob Heart 2013;8:171–9.