

Chapter 6

E-System for Public Health in India: Towards an Architectural Framework Incorporating Illiteracy and Linguistic Diversity

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ABSTRACT

Public health stands for the study and practice of those activities and initiatives that result in the prevention and reduction of incidences of illnesses and diseases in the population. The application of Information and Communication Technologies (ICT) can considerably facilitate Public Health project initiatives. In spite of the huge benefits of using ICT in Public Health, it can also pose considerable challenges in certain populations, pertaining to the access and comprehension of information shared through modern technology stemming from a range of issues such as illiteracy, demographic and linguistic diversity, differing economic strata of people, and differing priorities. In this chapter, after presenting a discussion on the issues faced by the public and relevant systems thinking approaches that may enable addressing the same, we propose a visionary architectural framework for ICT in Public Health through the eye of systems-thinking. We have called this framework e-System for Public Health (ePH). The understanding draws heavily from the Indian context as the country presents an interesting array of the challenges that we have mentioned above.

INTRODUCTION

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considerable challenges in certain populations, pertaining to the access and comprehension of information shared through modern technology stemming from a range of issues like illiteracy, demographic and linguistic diversity, differing economic strata of people, and differing priorities. ICT may still be relied on to overcome such challenges, for the delivery of Public Health information in a variety of formats, forms, and languages in a range of tools as user-interfaces for access of the general population, if fostered and supported by the public sector.

When complexity is high and the range of interrelationships between various elements is varied and diverse, it is important that any Public Health initiative be able to capture different co-existing factors that influence success, consider the inter-relationships between different elements in the environment, and understand how, because of the inter-relationships, the system as a whole transforms and evolves. In order to appreciate this, we have resorted to taking a systems perspective in evolving the architectural framework.

After presenting a discussion of the systems thinking approaches and the issues faced in public health, we propose an architectural framework for ICT in Public Health through the eye of systems thinking with a futuristic vision. Hereon, we will call this e-System for Public Health (ePH). The understanding draws heavily from the Indian context as the country presents an interesting array of the challenges that we have mentioned above. Furthermore, rather than being drawn from existing ICT, our proposed approach is visionary and forward-thinking in terms of what we want to see in future ICT in order to enable the ePH. The country is also on the verge of significant change in terms of ICT in public services and related e-governance initiatives. The framework that is proposed will not only be relevant to India, but learning from this can also be inferred for other countries with a similar environment.

We will first elaborate what we understand by Public Health and discuss the challenges in

terms of diversities that are posed by India as a country. We will then elaborate why, as a result of this, systems thinking and approaches can lend a perspective to work towards an architectural framework for ePH in India. We then consider how this can be woven into the e-governance framework of the country, and finally, touch upon some of the challenges of the ePH that need to be considered during its implementation.

WHAT IS PUBLIC HEALTH?

We have defined Public health as *the study and practice of those activities and initiatives that result in the prevention and reduction of illnesses and diseases in the population*. What accounts for rectification of diseases when there is an outbreak, does not represent Public Health; rather, the process of designing and implementing initiatives that will result in the prevention of such incidences in the first place will account for Public Health. These may include educating the public and raising their awareness of health and disease specific issues, and implementing health and hygiene initiatives. Hence, Public Health does not mean treatment. Public Health can therefore be classified as being proactive rather than being reactive, and being preventive rather than being curative. Dasgupta (2005) notes:

Public health services are architecturally distinct from medical services. They have as a key goal to reduce a population's exposure to disease, for example through assuring food safety and other health regulations; vector control; monitoring waste disposal and water systems; and health education to improve personal health behaviors and build citizen demand for better public health outcomes (p.1).

Public health normally consists of community-wide health and welfare initiatives that are ideally facilitated by the government, and in certain

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