Chapter XVI
Organizational Factors: Their Role in Health Informatics Implementation

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INTRODUCTION

The influence of organizational factors on the success of informatics interventions in healthcare has been clearly demonstrated. This health specific research, informed by a larger body of evidence emerging from interdisciplinary organizational, psychological and sociological research, has confirmed the view that organizational factors can be the decisive factor in the success of an intervention (Lorenzi *et al*, 1997).

However it remains rare for organizational factors to be explicitly addressed in the implementation process. As such their contribution to the success or failure of informatics applications is not properly understood. This has implications for future interventions. Applications which were not utilized or did not perform adequately in a particular setting may be dismissed, while other, less appropriate systems may be adopted because organizational factors influenced their success. Explicit study of the role of organizational factors on the implementation of health informatics interventions is necessary to develop an understanding of their influence in the healthcare context.

Healthcare organizations tend to be highly task oriented, labor intensive and dependent on interdisciplinary teamwork, so the influence of organizational factors within them may differ considerably from the business settings in which they have traditionally been studied (Chau, 2001). Health organisations are also increasingly underresourced due to the global downturn in government social spending, health sector privatization and aging populations. It is these characteristics which necessitate rapid uptake of informatics applications, capable of automating aspects of healthcare provision and reducing labor intensity (Coiera, 2004).

From a technical perspective, rapid and fundamental transformation of the healthcare sector through informatics is achievable. However, without a clear understanding of, and ability to manage organizational factors it is unlikely that

informatics applications will realize their potential in the health sector. This short review provides an overview of the key organizational factors influencing the success of informatics interventions. It begins by positioning informatics interventions in the broader context of organizational change, before discussing the current understanding of selected factors.

INFORMATICS IMPLEMENTATION AS ORGANIZATIONAL CHANGE

Implementing informatics applications is essentially "a politically textured process of organizational change" (Berg, 1999, p87), aimed at achieving user acceptance and utilization of informatics applications. Organizational change requires people to be aware of a need for change, identify a particular course through which the change can occur and take actions to make it happen (Lorenzi, 2004). Resistance to change occurs if users are not aware of the need for change, not convinced of the course of action set out or unable to carry out the necessary action. It is the users, not the technology that should be the centre of the change process, as the decision to utilise the system is ultimately theirs (Berg, 1999).

Even the best-designed and well-intentioned informatics interventions are likely to lead to productivity losses in the early stages and create major changes (Lorenzi, 2004). Timely and effective training of users can reduce the disruption, however is not enough to ensure success as even a correctly used system can have far reaching effects. Informaticians taking a 'socio-technical' approach, view the application as one component of a complex system, the health organisation, whose introduction will disrupt other components of the system (e.g. patients and clinicians). They advocate design approaches which aim to create technology which 'fits' within the complex system (Kaplan, 2001).

The multi-disciplinary nature of health sector organisations makes finding the correct 'fit' challenging (Kaplan, 2001). A range of professionals with different needs, expectations and work norms, are likely to use an application and each will expect it to 'fit' with their work practice. When an application does not fit resistance will increase. This is often due to valid concerns about increased workload or ability to care for patients (Timmons, 2003). When systems do not 'fit', the best way to overcome resistance is to change them. However when they are essentially effective, resistance can be overcome by changing people's opinions or work norms. Organizational culture and social networks, from which many of these norms and opinions arise, need to be understood and managed.

ORGANIZATIONAL CULTURE

Organizational culture is the set of shared norms and values and tacit rules within which members of an organisation function (Lorenzi & Riley, 2000). "Every culture supports a political and social values system" (Lorenzi, 1997, p85) which will influence the reaction to an informatics application. Healthcare settings often involve a professional hierarchy between doctors and nurses, are characterized by high levels of informal and disruptive communication and place value on clinician/patient relationships and patient care.

It is necessary to identify and target the aspects of organizational culture presenting opportunities for and barriers to success when changing the organisation through an informatics intervention. Managing change requires mediating the influence of culture on events, rather than necessarily aiming to change it (Demeester, 1999). Where organizational culture and informatics applications appear incompatible, adaptation of the application should be considered.

If it is not possible to modify the system, success is dependent on changing the organizational