



Child welfare informatics: A proposed subspecialty for social work

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ABSTRACT

Informatics is a term that has been used and applied to data collection, analysis, and information and communication technologies across many disciplines including public health, nursing, medicine, and, more recently, to social work. To date, no collective discussion involving policy makers, practitioners, and researchers in the social work field defining child welfare informatics and its implications to the discipline, including curriculum development has occurred. This paper offers a perspective to begin the dialogue of child welfare informatics and presents a working definition and role specification for those working as child welfare informaticians. Finally, recommendations are made on how to evolve child welfare informatics. These recommendations include highlighting the importance of informatics as a subspecialty in social work, its prospectus for child welfare policyreform, and implications for interdisciplinary, social work curriculum development.

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1. Introduction

Informatics is a term that has been used and applied to many disciplines including public health, nursing, medicine, and more recently social work. Informatics has been defined as the interdisciplinary study of the design, application, and use of information and communication technologies. However, many fields have created more specific definitions that better describe the application of informatics to their respective disciplines. Despite the fact that computer technology in social work has existed for many years, there has not been a collective discussion in the field to define child welfare informatics (CWI) (Nguyen, 2007). The use of technology is not new to social work; however, many concerns exist as the discipline has ties to face-to-face interactions and there is a minimal amount of time available for practitioners and policy makers to focus on data-related needs (Parker-Oliver & Demiris, 2006). One reason for this struggle is that agreement on the information stored and reported is challenging because of the diverse needs of the many groups that record and use child welfare information, including budget offices, administrators, researchers, and voluntary agencies.

In child welfare, these needs for technology culminated in each state building and implementing State Automated Child Welfare Information Systems (SACWIS) to store and disseminate administrative data. However, these SACWIS resulted in many challenges on how to use, report, and further build these data tracking systems. One reason for this dilemma is that the users and builders of these systems

were not always in consultation with one another. The results of SACWIS may have been different if there had already been a collective discussion on the importance and a clear definition of child welfare informatics in the social work field.

The transition in the past two decades has been from centralized computer systems to workstations and personal computers. In the past three decades, we have seen an increase in networks, distributed architectures, and the ability to display video and graphic images on demand (Payne, 2008). Computer systems today are not only cheaper and faster; prices continue to fall, while machines have increased capabilities. Further, the Internet has emerged as a “universal communications medium and the source of a universal graphical user interface—the World Wide Web—accessed with Internet browser software” (Yasnoff, O’Carroll, Koo, Linkins & Kilbourne, 2000, p. 70). The development of universal communications mediums has permitted a shift in paradigms for standardizing implementation of communication capabilities to all information systems (Yasnoff et al., 2000). Moreover, updating information systems has been greatly simplified because new versions of Web-based applications are available to users without the need for distributing new software. Technologies necessary for innovative and effective application of IT to child welfare practice are currently available at a reasonable cost. Not only has IT implementation become less costly, software and hardware have greatly improved. In addition, the focus on improved accountability in child welfare agencies has created a demand for efficient and effective IT in order to determine the outcomes of services (Grebel & Steyaert, 1995).

This paper offers a critical analysis of the evolution of what could be defined as CWI and presents a working definition and role specification for those working in CWI. It is believed that having a

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working definition of CWI is a fundamental element for shaping it as a social work subspecialty. Public health informatics, medical informatics, nursing informatics, and social informatics are briefly described in this paper with a focus on their history, definitions, and the utility of and barriers/challenges to information technology use and implementation. These disciplines are discussed to illustrate the parallels to the evolution of CWI. Recommendations are made regarding how to move forward with CWI and why it is an important subspecialty in social work. Moreover, this paper is a prospectus for child welfare reform led by informatics. Finally, an informatics emphasis has implications for interdisciplinary, social work curriculum development that will also be briefly discussed.

2. Public health informatics

Much like in child welfare, IT and improvements in software and hardware are available for use in public health practice today. Public health data are collected to characterize, monitor, control, and prevent disease (Yasnoff, 2003). The challenges associated with widespread usage and applications of these technologies exist because few public health professionals have received any formal instruction in informatics. For example, most public health professionals lack a basic comprehension of the purpose and nature of informatics as a discipline (O'Carroll, 2003) and few have the time and resources based on the demands of the job to pursue additional training. This is true in child welfare as well. Currently, public health information systems are the results of partnerships between federal and state public health agencies and administrators (Lumpkin, 2003). These information systems allow states to exchange information effectively and rapidly with other states, national organizations, and local public health officials (Lumpkin, 2003). Similarly, these federal, state, and organizational partnerships exist with child welfare information systems, for example, with SACWIS.

Much like the Department of Health and Human Services Administration for Children and Families in child welfare, the Centers for Disease Control and Prevention were instrumental in the development and implementation of more sophisticated applications and increased interconnectivity with other information systems. Public health practice currently integrates results and findings in biomedicine with biostatistics and epidemiology. Moreover, as the need for knowledge integration has become more sophisticated and complex, so have the information systems. Thus, the professional expertise necessary for acquisition and understanding of larger amounts of data and the analytical skills and systems needed for processing these data have also become more sophisticated and complex (Lumpkin, 2003).

Public health practice and policy developments in the United States and England during the 19th and early 20th centuries created the need for more advanced data collection and analyses in public health. These developments occurred much earlier in public health than in child welfare. This may be a result of the life and death ramifications of disease. For example, the English cholera epidemics (1831–1832) led to many changes in public health practice and policy surrounding the role of sanitation among the poor, as this was viewed as a danger to the health of the general population.

With all of the IT available, there is also the need to protect and manage sensitive information and data linking capabilities. Similar to child welfare agencies, public health organizations need to protect the confidentiality of sensitive, identifying information about individuals and there are laws in place to safeguard the privacy, confidentiality, and security of such information (Yasnoff, 2003). Public health organizations need to adhere to the fundamental principles of fair information practices, as stated in the Privacy Act of 1974, and to govern the release and handling of public health data. Once confidentiality policies are in place, security mechanisms that guarantee enforcement of those policies must be developed. These

can be defined as authentication, which ensures that the identity of the user is confirmed; data integrity, which protects information from unauthorized alteration; and availability, which prevents interferences with system access for authorized users. Authentication is a major piece of any security system. Three basic methods to determine the identity of a user are: passwords, what the user knows; smart cards, what the user has; and biometrics, who the user is (Yasnoff, 2003). These issues and procedures are major factors when protecting the confidentiality of child welfare agency clients; however, techniques and processes are available to address these concerns, including the removal of unique identifiers and reporting data in an aggregate versus case level format.

A key issue after managing the confidential nature of the data is ensuring that the users understand the important role that data play in evaluations and in improvement in practice. According to Yasnoff (2003), an aspect critical to collecting useful and meaningful data is “the efficient exchange of unambiguous information” (p. 218). Child welfare agencies are notorious for collecting data that are not complete and do not directly lead to outcomes of interest. This is an area of CWI that can be dramatically improved with a better understanding of the implication of informatics at the research, practice, and policy levels and why it is an important subspecialty to be considered in social work.

3. Medical, nursing, and clinical informatics

Medical informatics has been used as a general and overarching term to describe information technology efforts related to health care, as well as to describe a distinct subspecialty in the field of medicine. However, much controversy exists in how medical informatics is defined. There is also wide debate regarding whether medical, healthcare, and nursing informatics are one in the same (Staggers & Thompson, 2002; Turley, 1996).

Nursing informatics has developed over the past two decades as an important subspecialty in medicine. One review of definitions of nursing informatics found three themes that emerged for analysis: information technology oriented, conceptually oriented, and role oriented (Turley, 1996). These three themes associated with defining nursing informatics have direct implications for social work, as the child welfare field moves toward its own definition of informatics. The stated purposes of SACWIS have similar components such as the integration of computers (information technology oriented), information science usage (conceptually oriented), and practice wisdom (role oriented) in supporting and making decisions with children and families.

A second subspecialty in medical informatics is referred to as clinical informatics. Gardner et al. (2009) state that clinical informaticians work within three domains: clinical care, the health system, and information and communication technology. These three domains are similar in child welfare such as how to use clinical information systems, as a way to impact users and clients, as a support to child welfare workers, and how to better evaluate information systems to provide feedback for system and service improvements.

IT and informatics are not well developed with respect to definitions and domains across many disciplines, including child welfare. Moreover, much of the focus on IT has been on business problems such as costs. Most of medical IT has been computer based and uses software and hardware built by computer scientists (Turley, 1996); this is also true in child welfare. Child welfare worker input has been limited or nonexistent in either the design or implementation phases of building IT. This can be problematic for users who may not understand the purpose or potential of the computer systems and technologies.

When discussing informatics and IT, an aspect that should also be considered is the importance of Information Science (IS). IS adds the dimension of how organizational environments are structured and

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