

## Chapter 4.9

# Nursing Documentation in a Mature EHR System

**Kenric W. Hammond**

*VA Puget Sound Health Care System, USA*

**Charlene R. Weir**

*George W. Allen VA Medical Center, USA*

**Efthimis N. Efthimiadis**

*University of Washington, USA*

### ABSTRACT

Computerized patient care documentation (CPD) is a vital part of a Patient Care Information System (PCIS). Studying CPD in a well-established PCIS is useful because problems of system adoption and startup do not interfere with observations. Factors interfering with optimal nursing use of CPD are particularly challenging and of great concern, given today's shortage of nursing manpower. We describe problems and advantages of CPD usage identified by nurses in a series of research interviews. The chief advantages of CPD for nurses found were better accessibility and reli-

ability of patient care documentation. The main disadvantage was an awkward fit between current input technology and nursing workflow. A second disadvantage was difficulty in translating portrayal of the nursing process into readable documentation that is useful to all members of the clinical team. We interpret these findings to show that explicit consideration of nursing workflow constraints and communication processes is necessary for development of effective nursing documentation systems. Some findings point to a PCIS reconfiguration strategy that is feasible in the short term. Other findings suggest the value of considering mobile and team-oriented technologies in future versions of the PCIS.

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## **INTRODUCTION**

Patient care information systems do not exist in a vacuum. Inevitably, these systems articulate with the cognitive, social and practical dynamics of teams of information workers in a health care environment. To the extent that workers' tasks and the functionality of the information systems they use mesh well, these systems are accepted by their users and may demonstrate benefits measurable in terms of efficiency, safety and clinical effectiveness. Present computerized systems do not meet this challenge uniformly (Chaudhry et al., 2006) and are particularly poor at meeting the complex, multi-faceted information needs of nursing. Much of the nursing role in health care delivery is at the final delivery point of care. Nemeth, et al. (2005) call this aspect of health care delivery the "sharp end" of care. As these authors note "... sharp end knowledge is dense, complex, changes rapidly, and is embedded in a complex social setting that resists scrutiny by those who are considered to be outsiders." (2005, p. 19)

One important aspect of a patient care information system (PCIS) is input and retrieval of electronic text, which we refer to as computerized patient care documentation or CPD. In this chapter, we will review CPD as practiced by direct providers of health care, focusing on nursing documentation. We will report on an ongoing investigation of CPD as it exists in a mature, complete and widely-deployed patient care information system, the United States Department of Veterans Affairs (VA) Computerized Patient Record System, known as CPRS. We will offer a preliminary analysis of these findings, taking a cognitive work analysis perspective, and illustrate our points with excerpts from individual and group interviews conducted in VA settings. Our findings will show important advantages of CPD for nursing in the VA and important problems, especially with the "task-technology fit" (Goodhue & Thompson, 1995) of CPD and nursing practice.

We will review applicable medical informatics literature and present hypotheses about the origins of the current state of affairs. We will discuss the scope and purpose of nursing documentation activity, and make some short and long term suggestions for improving the "fit" of CPD with nursing work, especially in inpatient care. Improving the "fit" of the CPD system with inpatient nursing care is important. Patient safety has been shown to be highly correlated with nurse (especially RN) staffing intensity, as reviewed by Hinshaw (2008). It is generally accepted that availability to patients is important to safety. In addition, numerous studies of medical errors suggest that effective inter-staff communication is also crucial (Bhasale, Miller, Reid, & Britt, 1998; Coiera, 2000; Wilson, Harrison, Gibberd, & Hamilton, 1999). In hospitals, ward nurses play a critical role in both areas. The more time nurses spend being pulled away from patient and staff contact to work with CPD the less time is available for safety-promoting activities of communication and patient monitoring. Nurses' work with CPD should be as productive and relevant as possible. While our present scope is limited to examining nursing usage of the VA's CPD system in a single facility, many of our most important observations address fundamental cognitive and workflow issues that would apply to nursing documentation in any health care setting using a PCIS.

## **BACKGROUND**

### **CPD and its Place in the PCIS**

The term "Patient Care Information System" refers more or less to the generation of health care information systems that succeeded departmental information systems serving various operational sectors in health care settings, typically: patient registration, appointment scheduling, pharmacy, laboratory, radiology and finance. Three transitions characterized emergence of the PCIS from

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