Chapter XXXV
Strategies to Meet Knowledge Transfer Needs

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ABSTRACT

This chapter introduces strategies to meet knowledge transfer needs. The clinical knowledge repository infrastructure and tools developed at Intermountain Healthcare are described. The knowledge repository (KR) is a database with services housing knowledge assets. The electronic tools are used to access and manipulate the assets. The tools include (1) the Knowledge Repository Online, used to load, view, and review knowledge assets stored in the KR, (2) the Knowledge Authoring Tool, used to compose knowledge assets using schema-based XML templates, (3) the viewer, used for easy and rapid access to a predetermined collection of knowledge assets, and (4) KR Reports, used to mine monitoring data about KR tool usage and the user experience. The process for knowledge asset development is described, and four project-specific case studies are presented describing asset development incorporating the infrastructure and tools. The value added by knowledge engineers to the knowledge transfer process is discussed.

INTERMOUNTAIN HEALTHCARE CLINICAL STRATEGY

Intermountain Healthcare (Intermountain) is a nonprofit, multi-state network of hospitals, clinics, surgery centers, and an insurance plan. The primary clinical initiative of Intermountain is to "deliver the best clinical practice in a consistent and integrated way … at the lowest appropriate cost to the population served" (About Intermoun-

tain Healthcare, 2007) regardless of facility size or location, demonstrate improvement in measureable outcomes, and secure interactions by all levels of clinical users in the development and use of the centralized clinical content (Commitment to Quality, 2007). The literature reports goal attainment is dependent upon the availability of pertinent knowledge at the moment the knowledge is needed (Davis et al., 2003; Guptill, 2005). Users benefit from the consolidation of multiple knowledge elements into a succinct, usable arrangement. The degree of detail in the knowledge presented to the user is dependent upon the user's current knowledge level of the task at hand (Santesso et al., 2006). The user's learning process must not be hindered while attempting to access knowledge content (Roberts, Patel, & Bakken, 2004). Users of clinical knowledge should have access to pertinent knowledge expressed in a comprehensible approach (e.g., language, reading level, font size, paper vs. electronic access). Therefore, usable knowledge should (1) be available or instantiated at the appropriate moment of need in the workflow process, (2) be the appropriate level of detail for the task, and (3) be displayed in a user-friendly format.

Guptill (2005) supports the recognition that knowledge management incorporates knowledge sharing between individuals working toward a common goal with the end result being a desirable modification in behavior. Studies show collegial communications for knowledge exchange is more commonly used than searching literature (Gerrish & Clayton, 2004; Thompson et al., 2001). This type of communication, known as knowledge transfer, is the act of engineering implicit and explicit knowledge into an understandable, recognizable, and accessible format, and passing that body of knowledge between the knowledge holder and the intended knowledge users. The knowledge user is an active participant in completing the communication loop by transferring enhancement suggestions back to the knowledge holder (Aita, Richer, & Héon, 2007; as cited in Graham et al., 2006; Greenhalgh, Robert, Macfarlane, Bate, & Kyriakidou, 2004).

Greenhalgh et al. (2004) suggests that systematically organizing knowledge according to the manner in which the knowledge is expected to be used will enhance the transfer and incorporation of that knowledge into practice. Health care institutions must be able to readily comply with the mutability of regulatory and policy revisions (Gerrish & Clayton, 2004). Informed decision-making for users of healthcare knowledge may directly affect patient safety and outcomes.

To accomplish the initiative reported above, Intermountain implemented a number of processes to improve quality outcomes for patients and influence accessibility to quality personal care information for the community (Roemer et al., 2006). These methods emphasize equal access to knowledge assets (assets) by those who need the access (Hougaard, 2004). A "knowledge asset" is a single file or document (instance) containing knowledge of value to a knowledge user. Knowledge transfer is enhanced by ready access to a network of assets by the intended knowledge users.

KNOWLEDGE REPOSITORY INFRASTRUCTURE

The Knowledge Repository (KR) infrastructure and four interoperable tools provide maximum ownership of the knowledge management life cycle to knowledge authors, and encourage the development and use of high quality, evidence-based assets. The tools provide a consistent method for knowledge authors to develop electronic assets and to give voice to knowledge users when the need for changes to current practice is identified.

The KR is an Oracle10g database (Oracle Database, 2008) in which extensible markup language (XML) instances, XML schemas, XML style sheets, extensible style sheet language transformations (XSLT), XSL Formatting Objects (FO), and