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Stephen B. Johnson, Ph.D.; Bruce Formane, M.D.; James J. Cimino, M.D.; George Hripesak, M.D.; Soumitra Gengupta, Ph.D.; Robert R. Sideli, M.D.; Paul D. Clayton, Ph.D.

Drs. Johnson and Forman described the information system for clinical data implemented at Columbia Presbyterian Medical Center from a technology perspective. The scope and design of the system was presented, focusing on some of the unique aspects of the design. The Clinical Information System (CIS) is organized as a central hub that enables clinical systems on disparate platforms to share patient data. The bus consists of a series of concentric layers that handle requests from client applications to either store or retrieve data. The Message Handling Layer received these requests and ensures that a reply is returned to the client system. The Translation Layer maps data element being stored in the system into a standard representation. The Routing Layer connects clinical applications with central services that access data, and also propagates data from one application to another. The Monitoring Layer triggers logic that evaluated the patient record according to specified criteria. The Access Layer carries out the storage and retrieval transactions against the Clinical Repository, the central-collection of all patient data in the institution. The security and integrity of patient data, standards for data sharing, and performance characteristics of the system were also discussed.