

ASHP Statement on the Pharmacy Technician's Role in Pharmacy Informatics

Position

The American Society of Health-System Pharmacists (ASHP) believes that specially trained pharmacy technicians can assume important supportive roles in pharmacy informatics. These roles include automation and technology systems management, management of projects, training and education, policy and governance, customer service, charge integrity, and reporting. Such roles require pharmacy technicians to gain expertise in information technology (IT) systems, including knowledge of interfaces, computer management techniques, problem resolution, and database maintenance. This knowledge could be acquired through specialized training or experience in a health science or allied scientific field (e.g., health informatics). With appropriate safeguards and supervision, pharmacy technician informaticists (PTIs) will manage IT processes in health-system pharmacy services, ensuring a safe and efficient medication-use process.

Background

The National Library of Medicine defines health informatics as the “the interdisciplinary study of the design, development, adoption and application of IT-based innovations in healthcare services delivery, management and planning.”¹ Health informatics is a discipline at the intersection of information science, health care, and computer science that designs and delivers information to improve clinical care, individual and public health care, and biomedical research. Health informatics optimizes the usability, acquisition, and processing of health-related information, using resources and tools that span the IT spectrum, from people to processes, from information to knowledge, and from algorithms to data. The broad definition of health informatics and the number of disciplines involved present an opportunity for the growth of subspecialties within the field. One of these subspecialties is pharmacy informatics, which has been defined as “the use and integration of data, information, knowledge, technology, and automation in the medication-use process for the purpose of improving health outcomes.”² ASHP believes that pharmacists have the unique knowledge, expertise, and responsibility to assume a significant role in health informatics.² A properly trained and qualified pharmacy technician may assume a supporting role in the field of informatics as well.³

The potential for health informatics to improve health outcomes has prompted the health care industry, large health care purchasers, and state and federal governments to undertake sweeping health information technology (HIT) initiatives. These initiatives have greatly increased the demand for a highly skilled HIT workforce. The Bureau of Labor Statistics estimates that 37,700 new medical records and HIT technician jobs will be created between 2010 and 2020.⁴ This tremendous increase will affect organizations' ability to recruit and retain the qualified personnel necessary for health care operations. Although not all pharmacy technicians are qualified to fill this pressing need, an emerging cadre of spe-

cialized PTIs will help fill these important roles. The purpose of this statement is to provide a preliminary description of the potential roles and responsibilities of the PTI in the evolving HIT landscape as well as the knowledge, skills, and abilities required to assume those roles and responsibilities.

Roles and Responsibilities

In general, the PTI will be a health care professional, working under the supervision of a registered pharmacist, who uses his or her knowledge to influence and adapt IT systems to improve the effectiveness and efficiency of the health system. The roles of PTIs will vary, depending on the needs of the health care institution and the knowledge, skills, and abilities of the individual. A PTI specializing in the management of health-system pharmacy IT services may, for example, perform workflow assessment and optimization in clinical, administrative, educational, or research domains; adapt software controls to existing workflow; provide subject-matter expertise for new technology assessment and usability; or serve as a resource for pharmacist informaticists when mission-critical updates are needed or problems are identified. The areas of responsibility of the PTI will also vary considerably but may include automation and technology systems management, management of projects, end-user training and education, policy and governance, customer service, charge integrity, and reporting.

Automation and Technology Systems Management. With training and experience in health informatics, the PTI can serve as a knowledgeable expert for placement, configuration, monitoring, maintaining, and troubleshooting automation and technology systems and provides users and staff with consultative support. The PTI participates in assessing the functions, benefits, and constraints of technology and automation systems for drug procurement, pharmacy inventory management, prescribing medications, order processing, distribution and dispensing of medications, administering and documenting administration of medications, and effects monitoring. The PTI consults, advises, and educates staff on methods and means to make automation and technology systems more effective and efficient. The PTI's functions include integration of information and workflow processes to achieve successful adoption and application of new technologies to support health care operations and systems.

The PTI provides relevant technological or administrative data to identify, quantify, and resolve organizational or operational problems. PTIs integrate software applications for technological services by: (1) evaluating the unique needs of the specific services in conjunction with the capabilities of the software and coordinating required modifications; (2) reviewing the effectiveness of the systems and procedures to assure optimum benefit to patient-care activities; and (3) determining the cause of and the solution to problems when functionality is compromised.

Using the applicable software manager menu systems and tools, the PTI develops, modifies, and tests components

specific to fields and data that individualize or customize applications to user roles or needs while maintaining integrity among multiple software packages. The PTI also provides for the maintenance and updating of site parameters and site-specific files to ensure proper functioning of complex, interrelated, and interdependent software applications, effectively and efficiently managing multiple competing priorities.

Management of Projects. The PTI collaborates with the pharmacist informaticist in managing technology and information systems based on a shared understanding of system requirements, capabilities, and limitations. The PTI serves as an interdisciplinary team member to complete HIT system initiatives using analytical and evaluative techniques to assess the effectiveness of results and other related programs. For example, the PTI may contribute to planning for acquisition and implementation of a technology or automation system by assisting the pharmacist informaticist in developing a plan for the evaluation of the system; writing a request for proposal (RFP) for the system; assessing responses to the RFP; or developing a plan for implementation, testing, or maintenance of the system. The PTI may participate in the implementation of a technology or automation system by contributing to system installation (including supplemental build-outs), testing, and training of staff for use of the system, as well as maintaining the system according to an established plan. The PTI may also participate in development of a contingency plan for failure or compromise of technology or automation systems.

End-user Training and Education. The PTI identifies end-user educational requirements and training needs and develops educational programs, instructional materials, and appropriate tools to educate users and support staff at all levels of the organization. In collaboration with the pharmacist informaticist, the PTI monitors end-user satisfaction to drive enhancements and increase performance. The PTI functions in a supportive role with the pharmacist informaticist to ensure the technological changes are aligned with the organizational needs and participates on process improvement, root cause analysis, and system redesign teams.

Policy and Governance. The PTI maintains state-of-the-art knowledge of changes in technology and the clinical environment to identify, propose, formulate, and support new or revised major technological policies and directives for automation and systems technology. PTIs collaborate with pharmacist informaticists on the structure of programmatic and security requirements for data access in IT to ensure that best practices are applied to operational requirements.

The PTI applies statistical analyses and interprets their significance, including evaluation of the validity of measures used to generate outcomes related to patient management systems. PTIs will work cooperatively with the pharmacist informaticist to develop recommendations for improving clinical data management methods, follow-up procedures, and timely compliance with regulatory guidelines. Finally, the PTI instructs staff members in the proper use of information management tools in compliance with policy, regulations, and best practices.

Customer Service. The PTI maintains an ongoing personal relationship with onsite peers, pharmacist informaticists, technical support staff, administrative staff, and health care professionals within the facility. The PTI will frequently need to contact offsite technical support personnel and clinical and subject-matter experts as needed. External contacts may include contract developers, for whom the PTI can serve as a primary contact and knowledge resource.

Charge Integrity. The PTI maintains appropriate charging controls to ensure accurate patient and third-party billing. The PTI will be engaged with pharmaceutical wholesalers and distributors to validate price files in clinical and automation systems, as well as Healthcare Common Procedure Coding System (HCPCS) coding, units, and quantities. The PTI will also monitor charging and transaction interfaces for errors in charge application, quantities, or amounts.

Reporting. The PTI extracts, compiles, and analyzes standard reports from clinical and automation systems to facilitate organizational and individual decision-making. An advanced PTI customizes reports and provides advanced database management (e.g., via SQL or Microsoft Access) to address organizational needs not addressed through standard reporting tools.

Knowledge, Skills, and Abilities

The PTI is uniquely qualified to serve in these roles because of the combination of technological knowledge, skills, abilities, experience, and training. The PTI will be required to understand IT systems, including interfaces, computer management techniques, problem resolution, and database maintenance. The PTI will need to be familiar with pharmacy, medication, and medical terminologies as well as medication-use workflow processes, including drug procurement, pharmacy inventory, medication ordering, order management, dispensing, drug preparation, distribution, and billing systems.

The PTI will require a thorough knowledge of the clinical environment, including practices, procedures, policies, strengths, and weaknesses in order to effectively use data to track and manage patient care. Thorough and current knowledge of emerging and state-of-the-art technology, regulations, programs, and processes related to health informatics will be necessary for the PTI to propose and formulate administrative and clinical policies and directives, instruct practitioners on the changes and application of new policies and directives, and provide leadership on informatics committees or teams.

The PTI must have practical, in-depth knowledge of automation and software systems that affect clinical practice, as well as knowledge of technologies that may benefit health care delivery processes. The PTI should be able to troubleshoot functionality issues and develop solutions, and to ensure quality management of clinical operations.

The PTI should have comprehensive knowledge of the data life cycle, including data design, collection, and management, in order to input, retrieve, analyze, summarize, and present information effectively. The required knowledge base is extensive and includes usability, data standards, data validation, understanding content relationships, and interoperability among systems.

The PTI should understand common network standards and network architectures and the functions and purposes of common hardware components and configurations. The PTI should also understand the design of safe technology and automation systems. Finally, the PTI should possess the database skills to successfully create patient and medication information data sets and successfully construct reports.

The PTI should be skilled in communicating both orally and in a variety of written media for a variety of audiences, from information technology and clinical experts to end-users. As a specialist with training and experience in health informatics, the PTI guides the evolution of automation technology and processes using creative and well-developed interpersonal skills to achieve effective communication with end users and management.

Conclusion

The ASHP Pharmacy Practice Model Initiative provides several recommendations regarding use of technology to ensure medication safety. Meeting these recommendations will require an expansion of pharmacy resources devoted to the implementation and maintenance of HIT. A trained and educated PTI has unique skill sets that combine technical knowledge with an understanding of medication vocabulary and pharmacy operational workflow. Through these specialized skills, the PTI is able to support and coordinate pharmacy technologies under the direction of the pharmacy department or an accountable pharmacist. The PTI possesses a working knowledge of the technology and automation systems and processes that support the medication-use system and can contribute to ensuring their safety and efficiency.

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