ASHP Professional Development Section Advisory Group

Professional Development Opportunities for Informatics Pharmacists

Introduction

Many opportunities exist to help informatics pharmacists gain the knowledge and skills they need to be successful in their careers. Several credentials are available for informatics pharmacists who can demonstrate these skills and knowledge. The domain of pharmacy informatics involves health policy, project management, information technology (IT), and business analysis. Informatics pharmacists must keep current with the fast-paced environment of healthcare IT and meet user needs for information systems that are easier to use. This resource paper from the American Society of Health-System Pharmacists (ASHP) Professional Development Section Advisory Group reviews and outlines some skill-building and credentialing opportunities.

This review is motivated by a general need to increase awareness about credential programs within the informatics pharmacists’ community. The highlighted credentialing programs speak to a broad range of skill sets and knowledge. For example, certification in project management may be of interest to individuals who manage system implementation and enhancement projects. Alternatively, other credentialing programs may be of interest to those wanting to gain technical IT skills or additional knowledge about a specific technical platform or health IT project. The information regarding the credentialing programs is constantly evolving, and informatics pharmacists are encouraged to use this resource paper as a launching point for in-depth exploration through the specified credentialing source.

The following eight programs are described in the subsequent sections:

I. Advanced Interprofessional Informatics Certification (AIIC) [Future offering]
II. ASHP Informatics Certificate [Future offering]
III. Certification of Competency in Business Analysis (CCBA)
IV. Certified Professional in Healthcare Information and Management Systems (CPHIMS)
V. Information Technology Industry Certifications

VI. Project Management Professional (PMP) Certification

VII. Quality Management Certifications Lean and Six Sigma

VIII. Vendor/Application-specific Certification

Each section covers the following angles for the respective program:

- What is it? A general explanation of the credential
- What value does the credential have for an informatics pharmacist or medication-use systems professional? Proposed benefit to obtaining the credential
- What is required to become credentialed? General outline of steps to obtain the credential
- What organization offers the credential? The sponsoring body(s) that grants the credential
- Where can I get more information? Brief list of resources for additional details regarding the credential

I. Advanced Interprofessional Informatics Certification (AIIC)

What is it? The Advanced Interprofessional Informatics Certification (AIIC) is currently under development sponsored by the American Medical Informatics Association (AMIA). The certification is intended for health care professionals, including informatics pharmacists, who are not eligible to obtain the existing Clinical Informatics medical subspecialty credential offered exclusively to physicians.

What value does the credential have for an informatics pharmacist or medication-use systems professional? When the AIIC becomes available, achieving certification will allow an individual to demonstrate recognized competencies within clinical informatics. The certification will be designed to allow the certified informatics pharmacist to be recognized as having an advanced level of understanding of clinical informatics and a capability to promote the safe and effective implementation and use of health information technology.
What is required to become credentialed? The specific requirements for the AIIC are not yet fully determined. It is anticipated that requirements will be similar to those for the existing subspecialty certification. Because the AIIC is intended to be an advanced credential, informatics pharmacists interested in the AIIC are advised to consider additional preparation in the form of coursework in a health informatics program or using study guides for preparation. After successfully acquiring certification, informatics pharmacists will also need to maintain certification, though the details of this aspect of the AIIC credential are not yet settled.

What organization offers the credential? The AIIC will be offered by a credentialing organization in conjunction with the American Medical Informatics Association (AMIA). As a professional scientific association, the focus for AMIA is to be a leader in research, practice and leadership for biomedical informatics. AMIA centers its activities on promoting the science and advancement of biomedical informatics, education in informatics and the use of health information and technology to effectively promote health care.

Where can I get more information?

- Information about the AMIA organization and certification: https://www.amia.org/advanced-interprofessional-informatics-certification
- Study guide outline and list of references from American Board of Preventative Medicine: http://www.theabpm.org/public/studyguide.pdf
- Information about AMIA 10x10 courses: https://www.amia.org/education/10x10-courses

II. ASHP Pharmacy Informatics Certificate

What is it? The ASHP Pharmacy Informatics Certificate is designed to provide continuing education and an option to earn a certificate. The content of the program is developed by pharmacists for practitioners interested in learning more about informatics topics or currently working in an
informatics role. Course content covers a range of topics that were identified as important and relevant to the practice of informatics in settings where pharmacists practice.

*What value does the certificate have for an informatics pharmacist or medication use systems professional?* The modules cover informatics related topics which broaden the knowledge base of the pharmacist. Additionally this certificate program, developed and presented by pharmacists currently practicing in pharmacy informatics roles, has specific examples and insights known to be relevant to pharmacy informatics practitioners.

*What is required to receive a certificate?* The program will consist of a series of on-line self-study learning modules. To receive a certificate, a practice-based project will be required in addition to completion of the modules. The new program will be available in May 2016.

*Which organization offers the certificate program?* ASHP is a national organization whose membership includes pharmacists, pharmacy students and pharmacy technicians. ASHP offers many services for its members including providing education in the form of continuing education, meetings and conferences, publishing journals and textbooks, and advocating for its membership in all areas of practice.

*Where can I get more information?*

- Announcement of the anticipated certificate offering:


### III. Certification of Competency in Business Analysis (CCBA)

*What is it?* Business Analysis is the practice of enabling change in an organization by defining needs and recommending solutions that deliver value to various stakeholders. Business Analysis roles related to pharmacy informatics include Workflow Analyst, Systems Analyst, Electronic Health Record (EHR) and Medication-use System Analyst, and Requirements Analyst. The Certification of Competency in Business Analysis (CCBA) is an industry-recognized certification for business analysts. The CCBA
demonstrates that the individual has the experience, education and competency to enable and bring about change to systems and processes within IT and other organizations, including organizations in health care.

Using communication skills, Business Analysts (BAs) generally elicit and document requirements for workflows and the systems that support them. By so doing, BAs function to analyze information needs and existing enterprise systems, and to help generate and evaluate potential IT solutions.

Business analysis is always done in the context of organizational priorities and plans using the lessons of the Business Analyst Book of Knowledge (BABOK). In pharmacy informatics BAs would be expected to gather, analyze, and synthesize information by interacting with pharmacists, patients, physicians, nurses, programmers, organizational leaders, researchers, IT experts, and others to help organizations make systematic improvements in medication use and medication management.

What value does the credential have for an informatics pharmacist or medication-use systems professional? As pharmacy informatics continues to mature as a professional subspecialty, and as new medication-use systems are designed, developed, implemented, evaluated and optimized, a considerable body of pharmacy business analysis work needs to be completed. The CCBA together with a pharmacy degree demonstrates that the individual holding these credentials has the knowledge to understand and document current and future work processes, the insights to bring “systems thinking” to change management for pharmacy, and capability to elicit necessary requirements for medication use systems to meet the needs of users and organizations. In addition, these credentials help future pharmacy informatics leaders develop the skills necessary to advance within IT organizations, as well as within the pharmacy domain.

What is required to become credentialed? For a pharmacist to apply for the CCBA he or she must have approximately three years of business analysis experience, with 3,750 hours documented in an
analyst role, two references from managers, directors, or other business analysts, and a record of recent professional development building business analysis skills and knowledge.

After successfully acquiring the CCBA, a business analyst maintains certification by earning 60 additional continuing development units (CDUs) per three-year cycle. This requirement is a part of International Institute of Business Analysis (IIBA) continuing certification requirements program.

*What organization offers the credential?* The IIBA is a not-for-profit worldwide organization that is globally recognized for its extensive education programs, standards, academic programs, and professional development opportunities.

*Where can I get more information?*

- Information about the IIBA organization and business analyst certification: [http://www.iiba.org/](http://www.iiba.org/)

IV. **Certified Professional in Healthcare Information and Management Systems (CPHIMS)**

*What is it?* CPHIMS is a well-established, exam-based certification in information and management systems for healthcare. By design, the CPHIMS certification exam assesses candidates understanding of important basics in many areas instead of assessing depth of expertise in one area. Competencies tested and certified by CPHIMS include knowledge of the healthcare environment and its provider and payer organizations, general management of health IT, and health information privacy and security policy.

While many clinicians have earned the CPHIMS certification, many other health information and health IT professionals have earned it as well. Those with the CPHIMS certification work in various roles in the health IT industry, in healthcare provider organizations, in health-related consultancies, in government, in non-profit organizations, and in other areas where knowledge of the information and management systems used in healthcare is beneficial.

*What value does the credential have for an informatics pharmacist or medication-use systems professional?* The CPHIMS certification is valuable in several ways. Becoming certified provides
education about healthcare information management and the health IT industry from a new perspective outside of pharmacy. The expert authors of the review guide for the CPHIMS exam have experience working to select, implement, and evaluate all types of information and communication technologies in healthcare organizations. Second, many IT leaders in healthcare recognize the CPHIMS certification. For individuals who work in IT departments or have matrix reporting relationships to IT management, earning the CPHIMS certification can signal a commitment to preparing for a career managing health information systems. Third, within the pharmacy community, the CPHIMS certification can help demonstrate an interest in building a career in pharmacy informatics and health IT. Finally, the CPHIMS certification provides recipients with new and different opportunities to participate in professional activities at HIMSS, the Health Information Management Systems Society.

What is required to become credentialed? The eligibility requirements for the CPHIMS certification include a college degree and three to five years of information and management systems experience in healthcare. Once these requirements have been met, CPHIMS applicants must pass an exam with 115 multiple-choice questions. To prepare for the exam, a review guide is available for self-study. Preparation courses are also available. One should expect to devote at least 16 to 24 hours reading and studying before taking the exam. The CPHIMS exam can be taken at testing centers throughout the US. Once certified, renewal of certification takes place every three years by re-testing or by earning approved continuing education credits in health information and management systems.

What organization offers the credential? The Health Information Management Systems Society (HIMSS) operates the CPHIMS certification program. HIMSS was established in 1961 with a narrow focus on hospital management engineering. Since then, HIMSS has grown into a global nonprofit enterprise dedicated to better health through the use of IT. The CPHIMS certification program was established in 2002.

Where can I get more information?
• Information about the CPHIMS certification: [http://www.hims.org/health-it-certification/cphims](http://www.hims.org/health-it-certification/cphims)

V. Information Technology (IT) Industry Certifications

What is it? The technical IT industry has varied certifications. Several of the industry’s standard certifications are highlighted in this section. Although not pharmacy specific, Microsoft certifications are generally recognized. Microsoft Certifications are broken into five main types: Server, Desktop, Applications, Database, and Developer. Competencies tested are based on product and level of certification. CompTia certifications are vendor-neutral hardware and/or software certifications offered by the IT Industry Trade Association. They may also be prerequisites for advanced vendor certifications. CompTia A+ certification is an entry level certification that covers maintenance of PCs, mobile devices, laptops, operating systems, and printers. For more advanced certification, CompTia offers a Healthcare IT Technician certification which covers information in the following topics: US regulatory requirements, Organization behavior, IT Operations, Medical business operations, Security. Other certifications are offered that are more specific to security, mobility, networks, etc.

What value does the credential have for an informatics pharmacist or medication-use systems professional? The Microsoft and CompTia Certifications may be useful in several ways. First, becoming certified may allow the informatics pharmacist to better interact with other IT professionals in a healthcare organization. Being able to “speak the same language” as the technical resources in the data center, or from a vendor, may decrease frustration during these frequent interactions. Second, many IT leaders in healthcare recognize these certifications. For individuals who work in IT departments or who have matrix reporting relationships to IT managers, directors, or chiefs, earning these certifications can serve to indicate a commitment to understanding the broader world of IT. Lastly, they can be important in the day to day work of an informatics pharmacist. Starting with an application certification in Excel or Access may be a logical starting point for work with data mining and analysis, then progress to database
certification in SQL. Additional certifications can be obtained to support and enhance more skills depending on job specifications and requirements.

What is required to become credentialed? The eligibility requirements for Microsoft and CompTIA certifications depend on the level of certification. Classroom training or self-study guides and e-learnings are available. The exams can be taken at testing centers throughout the United States. Once certified, Microsoft Certifications are valuable until the product version is retired and then transition into a legacy status. CompTia certifications are valid for three years and can be renewed by completing continuing education.

Where can I get more information?

- Information about the CompTIA certifications: http://certification.comptia.org/home.aspx

VI. Project Management Professional Certification (PMP)

What is it? Project management is the application of knowledge, skills, and techniques to execute projects effectively and efficiently. The Project Management Professional Certification (PMP) is an important industry-recognized certification for project managers. The PMP demonstrates that the individual has the experience, education and competency to lead and direct projects.

What value does the credential have for an informatics pharmacist or medication-use systems professional? As the profession of pharmacy progresses and technology advances, pharmacies are faced with many projects that need to be completed. The skills gained apply to all projects regardless of size and scope. The PMP certificate along with a pharmacy degree demonstrates that the individual has the knowledge to define the scope of a project, develop an approach and project plan that works best in the healthcare setting, secure skillful resources, and coordinate the activities of a team of people to achieve important business objectives within a pre-determined timeframe. In addition, it demonstrates that
one will be able to utilize the project management tools (e.g. capacity planning, communication, implementation, execution, procurement, risk management) to bring structure to projects, to be able to deliver on time, on budget, and within scope.

What is required to become credentialed? For pharmacist to apply for the PMP, a four-year degree (bachelor’s degree in any discipline or the global equivalent,) at least three years of project management experience, including 4,500 hours leading and directing projects and 35 hours of project management education is required.

After successfully acquiring certification, a project manager maintains certification by earning 60 professional development units (PDUs) per three-year cycle.

What organization offers the credential? The Project Management Institute (PMI) is a not-for-profit worldwide organization that is globally recognized for its extensive education programs, standards, academic programs, and professional development opportunities.

Where can I get more information?

- Information about the PMI and certification: [http://www.pmi.org/certification.aspx](http://www.pmi.org/certification.aspx)

VII. Quality Management Certifications Lean and Six Sigma

What is it? Lean and Six Sigma are complimentary process improvement methodologies with common elements: step by step process roadmaps; data driven decisions from current processes; systematic approach to improve measurable results; focus on key metrics.

Lean and Six Sigma work well together. Lean is typically implemented first, as the focus is on getting the overall process flow right and eliminating waste. Six Sigma comes in after Lean and the focus is on making each step of the process efficient with zero defects.

Lean is linked to speed, efficiency and waste. Whereas, Six Sigma focuses on defects of process and quality of product. Lean is a methodology used for optimization and process improvement; it is centered on making obvious what adds value for the end user by reducing or eliminating everything
else, with no additional labor, costs or time, resulting in bottom line savings. Lean is an important complement to Six Sigma.

Six Sigma is driven by understanding customer needs, using facts, data, and statistical analysis. It focuses on variation and design, as complementary disciplines aimed at promoting business and operational excellence. Six Sigma originated from terminology associated with manufacturing, specifically terms associated with statistical modeling of manufacturing processes. It is a process involving five phases: define the problem, measure key aspects of the current process, analyze the cause of the problem through collected data, improve or optimize the current process based on the analysis, and control and maintain the solution and have a continuous improvement process. Collectively these phases are commonly referred to as the “DMAIC” process.

What value does the credential have for an informatics pharmacist or medication-use systems professional? Application of Lean Six Sigma methodology can have a positive impact in pharmacy through opportunities to make systems more efficient as scope of practice and technology evolves. An organization with a Lean Six Sigma trained team may take on the responsibility of measuring the current performance data in the current “as is” state to establish a baseline measurement. One of the key measurements to identify is process capability, i.e. what is the process capable of achieving in its current state. If a process is capable of meeting desired performance goals in current state yet is underperforming, then the process improvement initiative should move forward. If a process is not capable “in its current state” of meeting pre-determined performance goals, then the project will focus on improving process capability.

What is required to become credentialed? Six Sigma provides different certification levels, designated as “Belts,” that correspond to level of experience. Each belt requires different criteria for progression from Yellow Belt to Black Belt and other levels of certification. A Six Sigma Project Champion is a high ranking manager, with the organizational knowledge to ensure the project team is
aligned with the organization’s strategic goals, not necessarily an expert in the statistical tools. In addition, the Champion is empowered to implement change. Some companies simply require participation in a course and a Six Sigma project to be designated as a Champion.

What organization offers the credential? There is no standard credentialing body for Lean Six Sigma. There are different certification services offered by various quality associations and other providers for a fee. A Lean Six Sigma program is a major initiative undertaken by an organization, and the program is typically administered by a program manager who is responsible for setting up the training of the Champions, Master Black Belts, Black Belts and Green Belts and then monitoring the entire program and projects undertaken going forward.

Where can I get more information? Colleagues that have completed Six Sigma certification(s) are good resources, as well as inquiring within an individual’s organization to determine if a Lean Six Sigma program exists. Specific references include:

- ThedaCare Center for Healthcare Value: [https://createvalue.org/](https://createvalue.org/)

VIII. Vendor/Application-specific Certifications

What is it? From web-based trainings to in-person classroom settings, vendor/application training programs vary immensely among electronic medical record (EMR) and other medication-use systems. Major EMR vendors such as Allscripts, Epic, Cerner, and McKesson, all have client education in some form. Other medication technology vendors for automated dispensing devices, infusion pumps, etc. such as CareFusion or Omnicell may also offer customer support training programs and system certifications.

What value does the credential have for an informatics pharmacist or medication-use systems professional? While basic system knowledge can be gained from on the job training and usage, in order to further develop as an IT professional, formal education or certification may make the informatics
pharmacist more valuable. Having employees further their education can help enhance the organization by maximizing investment in IT and realize the full potential of any system implemented. Informatics pharmacists also must be aware of the complexity and functionality of the respective systems, so that the system capabilities can be accurately represented during design, build, and optimization meetings. Having vendor specific certifications may also help the informatics pharmacist on job interviews or in seeking consultant positions.

*What is required to become credentialed?* Each vendor will have a different process for certification. Examples include in-person classes, online classes, and project work. Many vendors require that participants be a current customer or employed by a consulting firm before access or participated in their classes can be obtained.

*Where can I get more information?* In addition to the vendor website, another source for vendor specific education and certification is attendance and participation in vendor arranged user group meetings.

**Conclusion**

The opportunities are varied and numerous to delineate the knowledge and skill set of an informatics pharmacist. Achievement of credentials is dependent on an individual’s current role and future plans. The informatics pharmacist is encouraged to consider the options for available credentials, especially when it formally declares an individual’s existing skill set. This compilation is a starting place for exploring a number of options available.