

21st Century Intelligent Pharmacy Project

Draft Concept Paper
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The Pharmacy Profession Today

Pharmacy is one of the most dynamic professions in America today. Pharmacists are considered the most accessible and most trusted healthcare professionals in the country and have been repeatedly listed in the top five of all professions according to the Gallup Poll¹. Pharmacists are well educated, have broad clinical experience, and provide health information and professional expertise in the retail community; long term care; and hospital or health system settings. Pharmacists dispense over 3.8 billion outpatient prescriptions in the United States each year.² As the U.S. population continues to age, high demand for pharmacists and excellent job opportunities in the future are expected.³ Pharmacists are becoming more involved in direct patient care services such as counseling patients; providing disease management programs for disorders like diabetes and hypertension; and, participating in drug therapy and compliance or adherence programs. Pharmacists are regulated on a state level and a license to practice pharmacy is required in every state. The prospective pharmacist must graduate from an accredited school or college of pharmacy and pass a series of examinations.⁴

An Ever-Evolving Profession

Pharmacists function in a wide and evolving number of ways within health, healthcare and medical research. While practicing in a community setting, pharmacists are responsible for dispensing medications, ensuring their suitability to the patient and his/her condition, and, if required, to tailor a medication to the specific needs of the individual. Pharmacists serve as health educators by guiding patients through therapy options including prescribed and over-the-counter (OTC) medications as well as preventive therapies.

Institutional pharmacists practice in hospitals, nursing homes and extended health care facilities. Pharmacists in institutional settings screen patients for drug allergies, watch for adverse effects of a prescribed drug and provide a number of patient oriented services. Physicians, nurses, and patients turn to pharmacists as the authoritative expert on prescription and non-prescription drug therapy. Many pharmacists conduct research either in a university setting or within the pharmaceutical industry. Other pharmacists serve as academic faculty members at one of the nation's pharmacy schools. In addition to working in the research and product development fields within the pharmaceutical industry, pharmacists are also employed in the areas of marketing, quality control, sales and administration. The pharmacy profession is essential to the delivery of high quality health and healthcare services in America as well as for innovations, research and developing breakthrough treatment options.

¹ Gallup Poll; <http://www.gallup.com/poll/103123/Lobbyists-Debut-Bottom-Honesty-Ethics-List.aspx>.

² Wall Street Journal; <http://blogs.wsj.com/health/2009/04/07/more-prescriptions-for-generics-fewer-for-branded-drugs>.

³ US Department of Labor, Bureau of Labor Statistics; www.bls.gov.

⁴ National Association of Boards of Pharmacy; www.nabp.net.



Today's Pharmaceutical Industry

The U.S. pharmaceutical industry is one of the most innovative and vibrant industries in the United States. Pharmaceutical manufacturers invested more than \$65 billion in 2008 in research and development trying to cure or mitigate diseases such as diabetes, cancer, hypertension, Alzheimer's and AIDS.⁵ The industry has achieved worldwide prominence through research and development on new drugs therapies and spends a relatively high proportion of its budget on research and development compared with other industries. By all accounts, pharmaceuticals rank among the fastest growing manufacturing industries capturing some of the most talented people in the country. More than six out of 10 workers hold a bachelor's, master's, professional, Pharm.D. or Ph.D. degree — twice the proportion for all other industries combined.⁶

As an industry, pharmaceutical manufacturers produce thousands of prescription medications for diagnostic, preventive and therapeutic uses. In addition to aiding in the treatment of infectious diseases such as pneumonia, tuberculosis, malaria, influenza and sexually transmitted diseases, these medicines help prevent and treat cardiovascular disease, asthma, diabetes, hepatitis, cystic fibrosis, and cancer. For example, anti-nausea therapies help cancer patients endure chemotherapy and clot-buster drugs help stroke patients avoid brain damage. Prescription vaccinations have virtually wiped out such diseases as diphtheria, measles, rubella, polio, smallpox, tuberculosis and whooping cough.⁷

Goal for the 21st Century Intelligent Pharmacy Project

The Center for Health Transformation (CHT) is launching the 21st Century Intelligent Pharmacy Project in an effort to accelerate the widespread adoption of best practices and innovative solutions in the field of pharmacy. The project will rely significantly on active and engaged CHT members and other nationally recognized leaders. In March 2009, CHT brought together a group of pharmacy leaders with diverse backgrounds to serve as the planning committee for the project. This planning committee then identified several specific areas for additional investigation.

The goal of the project will be to define those issues, concepts and principles which will encompass a patient-centered pharmacy model which saves lives, improves care, creates value, empowers patients to make intelligent, informed decisions, enhances plan benefit design and saves money. The deliverable will be a book or robust white paper published by CHT that will highlight those best practices and serve as a resource to the pharmacy profession, policy makers on the state and federal level and other stakeholders in the health care system that utilize pharmacy services.

Scope of the 21st Century Intelligent Pharmacy Project

The scope of the project will be comprehensive and will cover issues such as the importance of innovation, the role of pharmacists in a reformed health system, disease management and technological breakthroughs. The planning committee effectively reduced the number of targeted topics to a manageable list, and each of these topics will be explored in more detail in the document. However, for the purposes of this concept paper, a brief description on several of the areas the planning committee identified will be presented. Each of the topics listed discussed in this concept paper will be developed, solutions identified and strategies expanded for the accelerated adoption of these best practices.

⁵ Reuters; <http://www.reuters.com/article/pressRelease/idUS215724+10-Mar-2009+PRN20090310>.

⁶ US Department of Labor, Bureau of Labor Statistics; www.bls.gov.

⁷ US Department of Health & Human Services, Centers for Disease Control and Prevention, <http://www.cdc.gov/vaccines>.

Increasing Patient Adherence or Compliance

Increasing patient adherence to prescribed medication therapy was one of the top discussion items by the members of the planning committee. Patient adherence to treatment — sometimes referred to a patient compliance — is the degree to which patients adhere to medical advice and take medicines as directed. Adherence depends not only on patient acceptance of information about the health threat itself but also on the practitioner's ability to persuade the patient that the treatment is worthwhile.⁸ Low adherence with prescription drug therapy is ubiquitous in the United States today and undermines overall treatment benefits while adversely impacting outcomes.

The World Health Organization (WHO) has reported that only 50 percent of U.S. patients typically take their medications as prescribed. Other reports indicate the issue is more severe.⁹ According to a survey conducted by the National Community Pharmacists Association (NCPA), nearly three out of every four American consumers report not always taking their prescription medicine as directed:

- Half of those polled (49%) said they had forgotten to take a prescribed medicine;
- Nearly one-third (31%) had not filled a given prescription;
- Nearly three out of 10 (29%) had stopped taking a medicine before the supply ran out; and,
- Almost one-quarter (24%) had taken less than the recommended dosage.

The National Council on Patient Information and Education issued a report in August 2007 stating that poor patient adherence has resulted in an estimated loss of \$177 billion annually in direct and indirect healthcare costs, including increases in hospitalizations and physician office visits.¹⁰

It is estimated that as many as 10 percent of all hospital admissions and 23 percent of long-term elder care admissions in the United States are a direct consequence of failed patient adherence. Beyond the direct burden on healthcare systems, there are other significant cost impacts of non-adherence. Medication non-compliance costs as much as \$100 billion and 125,000 lives every year. Up to 70 percent of all prescriptions are never consumed and 20 percent of all new drug prescriptions are never filled the first time. On average non-compliance is estimated at between 40 and 50 percent, and for some diseases, adherence rates are as low as 10 to 20 percent.¹¹

Clearly, low adherence rates are troubling – for patients, pharmacists, physicians and pharmaceutical manufacturers. Research indicates that the patient's health beliefs, the quality of physician-patient communication and the quality of the information patients receive are important factors for patient adherence to treatment. However, despite their efforts to improve adherence using methods addressing these issues, healthcare stakeholders have been unable to effect significant changes in adherence or compliance rates.¹² CHT's 21st Century Intelligent Pharmacy Project will examine and present innovative solutions aimed at reversing these trends and increasing patient adherence.

⁸ Management Sciences for Health and World Health Organization, 1997, pp. 428.

⁹ <http://www.b-eye-network.com/view/6940>

¹⁰ The National Council on Patient Information and Education (NCPIE), "Enhancing Prescription Medicine Adherence: A National Action Plan." August 2007.

¹¹ The National Council on Patient Information and Education (NCPIE), "Enhancing Prescription Medicine Adherence: A National Action Plan." August 2007.

¹² <http://social.eyeforpharma.com/story/real-cost-patient-non-adherence>.

Implementing Effective Disease Management

One of the most successful pharmacist-directed disease management programs has been the Asheville Project in Asheville, North Carolina. In 1996, as an effort by the city of Asheville, a self-insured employer, the Asheville Project was implemented to manage costs and improve care for city employees. The Project called for the provision of patient education and created individualized care and oversight for employees with specific chronic diseases such as diabetes, asthma, hypertension and hyperlipidemia. Through the Project, employees with these conditions were provided with intensive patient education through the Mission-St. Joseph's Diabetes and Health Education Center. Patients were then teamed with community pharmacists who met with the patient regularly to ensure that they were using their medications correctly.¹³

The Asheville Project led pharmacists to develop thriving patient-centered care and services in their community pharmacies. Employees, retirees, and dependents with diabetes soon began experiencing improved A1c levels, lower total healthcare costs, fewer sick days and increased satisfaction with their pharmacist's services. Today, the Asheville Project has inspired a new healthcare model for individuals with chronic conditions. Unlike other experiments, the Asheville model is payer-driven and patient-centered. Employers are adopting this approach as an additional health care benefit to empower their employees to control their chronic diseases, reduce their health risks and ultimately lower their healthcare costs.

The Asheville Project was so successful that it has been replicated across the country. Most recently, the Diabetes Ten City Challenge (DTCC) sponsored by the American Pharmacists Association (APhA) Foundation demonstrates how employers and pharmacists can work together to help people with diabetes manage their disease and reduce healthcare costs. The impressive results, which will be published in a peer reviewed article in the May/June issue of the *Journal of the American Pharmacists Association (JAPhA)*, show average total healthcare costs were reduced annually by \$1,079 per patient compared to projected costs if the DTCC recommendations had not been implemented. Aggregate data for 573 participants, who were in the program for an average of 14.8 months, show patients saved an average of \$593 per year on their diabetes medications and supplies because employers waived co-pays to encourage patients to participate in the DTCC. However, equally exciting as the healthcare savings generated by the project, were the improvements in key clinical measures including hemoglobin A1c, cholesterol and blood pressure as well as increases in preventive care measures, including the number of people with current influenza vaccinations, eye exams and foot exams.¹⁴

Since more than 23 million Americans have diabetes at a cost of \$174 billion a year, pharmacist-directed disease management programs have rapidly expanded from Asheville and the Diabetes Ten City Challenge. Most disease management programs focus on diabetes since it is estimated that 200,000 people die of diabetes-related complications every year, and thousands are affected by blindness, kidney failure and problems of the lower extremities. In 2007, diabetes was responsible for 15 million work days absent, 120 million work days with reduced performance, and an additional 107 million lost work days due to unemployment disability.¹⁵

¹³ American Pharmacists Association Foundation; http://www.aphafoundation.org/programs/Asheville_Project/

¹⁴ Journal of the American Pharmacists Association; www.diabetestencitychallenge.com/pdf/dtccfinalreport.pdf.

¹⁵ DTCC Press Release; <http://www.prnewswire.com/mnr/dtccfinaldata/37319/>.

The 21st Century Intelligent Pharmacy Project will examine any number of successful models like the Asheville Project and include those programs and policy recommendations concerning disease management programs.

Increasing Patient Safety

Patient safety – particularly medication safety – remains a high national priority. Far too many people die as a result of medication misadventures. One of the first Institute of Medicine (IOM) reports to address patient safety was entitled, *To Err is Human: Building A Safer Health System*, stated that “health care in the United States is not as safe as it should be—and can be. At least 44,000 people, and perhaps as many as 98,000 people, die in hospitals each year as a result of medical errors that could have been prevented.”¹⁶

In July of 2006, the IOM released a second report on patient safety, *Preventing Medication Errors*, which indicated that medication errors in hospitals are common during every step of the medication process. This includes procuring the drug, prescribing it, dispensing it, administering it and monitoring its impact. However, errors occurred most frequently during the prescribing and administering stages. When all types of errors are taken into account, a hospital patient can expect on average to be subjected to more than one medication error each day.¹⁷

Adverse drug events (ADE) arising from an error is considered preventable. The IOM suggests that between 380,000 and 450,000 preventable ADEs occur in hospitals each year. The staggering numbers are equally disturbing in other settings. According to the IOM, 800,000 preventable ADEs occur each year in long-term care facilities. One study cited in the IOM report documented that among outpatient Medicare patients over a half a million (530,000) preventable ADEs occur each year. When the IOM examined the total number of all medication errors, they concluded that there are at least 1.5 million preventable ADEs that occur in the United States annually.

Medication errors are very costly — to patients, their families, their employers, hospitals, health-care providers, and health insurance companies. The IOM estimates that each preventable ADE which occurred in a hospital added about \$8,750 to the cost of the hospital stay. “Assuming 400,000 of these events each year which is a conservative estimate, the total annual cost exceeds \$3.5 billion. A study cited in the IOM report indicated that preventable ADEs in the Medicare population result in an annual cost of \$887 million for providing treatment of medication errors.”¹⁸

Pharmacists can play an important role in preventing and reducing prescription drug errors. The Pharmacy Quality Alliance was formed in April 2006 with the mission of improving healthcare quality and safety through the development of pharmacy and pharmacist performance measures, the development of guidelines for public reporting about the safety and quality of pharmacy services, and through testing of new payment models for pharmacy services that incorporate assessments of quality.¹⁹

The Center’s pharmacy project should examine innovative patient safety solutions. Whether in-patient or out-patient, institutional or ambulatory, pharmacists in all practice settings have developed patient safety strategies which save lives and save money. As part of this project, we will highlight best practices directed toward reducing or eliminating medication errors.

¹⁶ Institute of Medicine, “*To Err is Human: Building A Safer Health System*,” 1999.

¹⁷ Institute of Medicine, “*Preventing Medication Errors: Quality Chasm Series*,” 2006.

¹⁸ Institute of Medicine, “*Preventing Medication Errors: Quality Chasm Series*,” 2006.

¹⁹ National Alliance of State Pharmacy Associations; <http://www.naspa.us/patientsafety.html>.

Developing an Individual, Patient-Centered Pharmacy Care Model

The pharmacy profession's movement toward a patient-centered practice model began in the 1960s and progressed through the mid-1980s. This migration toward patient-centered practice by pharmacy providers resulted in promulgation of the principles of clinical pharmacy practice, drug information services and eventually developed into "pharmacy" or "pharmaceutical care". To date, the profession continues to wrestle with the exact terminology. However, by the early 1990s, the provision of pharmacist-directed pharmacy or pharmaceutical care was broadly adopted by the pharmacy profession as well as the nation's colleges and schools of pharmacy which embraced it as the new professional mission.

NACDS-APhA-NCPA jointly issued a white paper on implementing change in community pharmacy practice, but the document does not employ the term "pharmacy" or "pharmaceutical care". Instead, the white paper uses the terms "patient care", "direct patient care" and "patient care services". Nonetheless, the NACDS-APhA-NCPA white paper supports the professional vision of a patient-oriented pharmacy practice model stating, "the concept of the pharmacist as a patient care provider is gaining (wide) acceptance in the health care community."²⁰

The Institute for Health Improvement (IHI) suggests that true patient-centered pharmacy care "considers patients' cultural traditions, their personal preferences and values, their family situations and their lifestyles. It makes the patient and their loved ones an integral part of the care team who collaborate with health care professionals in making clinical decisions."²¹ Patient-centered pharmacy care models put responsibility for important aspects of self-care and monitoring in the hands of patients along with the tools and support they need to carry out that responsibility. Clearly, a patient-centered pharmacy care model ensures that patients are engaged and active in everything from the drug product selection process (where appropriate) to patient adherence. The 21st Century Intelligent Pharmacy Project will research and focus on building the principles and best practices surrounding the development and sustainability of a patient-centered pharmacy care model.

Developing Continuity of Care

The current health system does not focus on providing a system of coordinated care. Patients move from physician to physician and from institutional to ambulatory care without the benefit of one individual assisting or coordinating their care. There is a demonstrative need to create a better continuity of care model or establish a healthcare continuum throughout a patient's life.

The American Academy of Family Physicians (AAFP) defines "continuity of care" as the process by which the patient and the physician are cooperatively involved in ongoing health care management toward the goal of high quality, cost-effective medical care.²² Pharmacists currently play a major role as a patient advocate and a bridge between care settings (hospitals, LTC, senior living facilities, ambulatory, school, home care and public health care settings) and community-based care. There is an opportunity for pharmacists or other community-based professionals to potentially serve as the

²⁰ http://www.medscape.com/viewarticle/409605_2

²¹ Institute for Health Improvement, <http://www.ihl.org/IHI/Topics/PatientCenteredCare/PatientCenteredCareGeneral/>.

²² <http://www.aafp.org/online/en/home/policy/policies/c/continuityofcaredefinition.html>.

“continuum of care manager”, and the 21st Century Intelligent Pharmacy Project should examine this potential by making policy recommendations concerning implementation.

Emphasizing Wellness and Prevention

Pharmacists and pharmacies have long been advocates of a wellness and prevention focused practice. One important example is vaccinations. Pharmacists across the country provide immunizations—a key element in the prevention of infectious disease.²³ Vaccines have not only decreased mortality and morbidity dramatically, but have also eliminated diseases such as polio in the United States and smallpox worldwide. At present, vaccines are available for 21 infectious diseases; of these, 11 are recommended for use in children.²⁴

Smoking cessation is another area where pharmacists can be effective in leading prevention and wellness efforts. Smoking is the leading cause of preventable morbidity and mortality in the United States today with an estimated 420,000 smoking-related deaths reported each year.²⁵ Annually, more than 40 percent of smokers in the United States attempt to quit, but only 6 percent achieve long-term success. As trained and accessible healthcare professionals, pharmacists are in an ideal position to provide tobacco cessation interventions. Studies have demonstrated that pharmacists are effective providers of tobacco cessation interventions, and greater utilization of pharmacists in tobacco cessation efforts could have a significant impact on smoking rates, prevention of tobacco-related diseases, and overall improvement in public health across the country.²⁶

Obesity is a national epidemic and one of the leading causes of preventable morbidity and mortality in the United States. Obesity is also the single largest contributor to diabetes. Pharmacists can play an integral role by providing weight management services by increasing public awareness of pharmaceutical care and attracting patients to pharmacy-based weight management programs. An Auburn University study determined that a pharmacy-based weight management program was successful in helping patients decrease total body weight, BMI and risk of weight-related complications.²⁷

Innovative, pharmacy-based wellness and prevention programs which increase immunization rates, decrease tobacco use and assist patients with weight management are but three examples of health prevention and wellness metrics which should be examined. The 21st Century Intelligent Pharmacy Project will research and focus on building the principles and best practices surrounding the development and sustainability of a patient-focused wellness and prevention programs.

²³ J Am Pharm Assoc 41(1), American Pharmacists Association, 2001.

²⁴ <http://www.medscape.com/viewarticle/406709>

²⁵ Centers for Disease Control and Prevention. Cigarette smoking-attributable mortality and years of potential life lost -- United States, 1990. MMWR Morb Mortal Wkly Rep 1993;42(33):645-9.

²⁶ *The Annals of Pharmacotherapy*: Vol. 43, No. 2, pp. 194-201. DOI 10.1345/aph.1L556; 2009.

²⁷ Implementation of a Weight Management Pharmaceutical Care Service; <http://www.theannals.com/cgi/content/abstract/aph.1E466v1>; 2007.

Encouraging Innovation through Research

The increasing role of innovation in prescription medications therapy as both complements to and alternatives to more invasive medical procedures is vitally important as we search for treatments for disease such as Alzheimer's, diabetes, cancer, heart disease and HIV/AIDS. There has been considerable attention given to the research and development of new drug products by the pharmaceutical industry. Some prominent observers have questioned whether the current system of research and development is as cost-effective as alternatives might be, and, in particular, whether the central role of private pharmaceutical firms in drug research and development produces commensurate social benefits. More specifically, there is a belief by some in leadership positions that the scientific advances that yield new and improved medicines are the fruit of research financed or conducted by public agencies, the National Institutes of Health (NIH) foremost among them, rather than the pharmaceutical companies that produce and market them.²⁸

However, Manhattan Institute for Policy Research concluded that it is clear that “the scientific contributions of the private sector were crucial for the discovery and/or development of virtually all of the 35 drugs and drug classes examined” in their study. Such scientific advances can be classified as the basic science of biology and disease processes relevant for given medical conditions; the applied science of discovering compounds that treat particular conditions; and the development of compounds with improved clinical (medical) effects of large-scale manufacturing processes and the like. In short, although basic research occurs in both the public and private sectors, the applied science of drug development and clinical refinement of compounds occurs almost exclusively in the private sector. It is these efforts that ultimately allow new scientific discoveries to be translated into new medicines.²⁹ CHT's Pharmacy Project should examine policy recommendations which will encourage the continued investment in innovation regarding the development of new drug products.

Improving Communications among Healthcare Professionals

Microsoft contends that high-quality healthcare can only be delivered by multidisciplinary teams consisting of doctors, nurses, pharmacists, therapists, social workers and health payers and often requires coordination with and among caregivers who work in the community and in patients' homes.³⁰ However, such “teamwork” can also lead to fragmented communication, information and work processes that actually put quality at risk.

Effective and timely communication and collaboration among members of the healthcare team is of vital importance to the quality of patient care. Providers need an integrated communication and information platform in which they can quickly, easily and securely access up-to-date patient information — and each other — from a variety of locations using tools that are familiar, economical, and easy to use. Electronic systems such as the bi-directional communication features of electronic prescribing will be important in creating the 21st Century Intelligent Health System. The project should look at how systems

²⁸ *The Truth About Drug Innovation: Thirty-Five Summary Case Histories on Private Sector Contributions to Pharmaceutical Science*; Manhattan Institute for Policy Research, June 2008.

²⁹ *The Truth About Drug Innovation: Thirty-Five Summary Case Histories on Private Sector Contributions to Pharmaceutical Science*; Manhattan Institute for Policy Research, June 2008.

³⁰ <http://www.microsoft.com/industry/healthcare/providers/solutions/caregivercollaboration.mspx>

and policies can significantly improve communications between and among members of the healthcare team. Additionally, as part of the book or white paper, the project should search for those systems which excel in communication and help to accelerate their adoption.

Examining Payment Reform

Pharmacy is the only healthcare profession that is reimbursed primarily through sale of a product rather than for provision of patient-specific service. The planning committee suggested that the 21st Century Intelligent Pharmacy Project examine payment reform options.

A white paper issued by the largest professional associations – NACDS, APhA and NCPA – discussed the dual role of pharmacists as managers of both dispensing and patient care and suggests that the profession must unite by establishing common goals which meet the needs of their specific patient populations. However, continued high demand for product-oriented practitioners, combined with the absence of some sort of viable reimbursement methodologies for non-distributive patient care services, made the implementation of patient-centered practice difficult.³¹ There are several models which fully incorporate the reimbursement of pharmacists for direct patient care services which are unrelated to the distribution of a specific drug product. Although slow to develop, reimbursement for pharmacist-directed patient care services has begun to transform the profession. Our project will explore several differing models with specific emphasis on patient outcomes.

Enhanced utilization by the health care system of patient care services provided by pharmacists can help reduce the estimated \$177.4 billion spent each year to treat hospital admissions, physician visits, and other health care expenditures resulting from inappropriate medication use. In fact, for every dollar spent on prescription medications, at least one dollar is also spent to treat mostly preventable adverse drug events from prescription drugs.³²

Pharmacists can often prevent potential ADEs and encourage higher medication adherence rates by working with patients and physicians to promote the most appropriate, cost-effective medication regimen given a patient's medical history. Prescription medications are powerful agents and have a central role in the treatment of disorders, conditions and disease. However, the success of any prescription drug therapy in improving health depends on their appropriate use by patients. Pharmacists have demonstrated that the medication therapy management (MTM) services they provide under Medicare Part D plans are able to improve the outcomes from medications as well as save money for both patients and health plans. Pharmacists achieve these goals by helping patients understand how to manage and use their medications and by working with physicians to assure the most appropriate drugs are used. Such actions help to contribute to lower overall health care costs by increasing medication adherence, and reducing the number of physician visits and hospitalizations due to inappropriate drug use.³³ However, there are rarely compensation arrangements which recognize MTM services in the private sector.

As payment reform is examined, pharmacists, PBMs and manufacturers should be engaged. Pharmacy providers are typically reimbursed by pharmacy benefit managers or PBMs. Most employers, health plans and insurers engage the services of PBMs in the pharmacy claim administration process. PBMs add significant benefit by consolidating the management and administration of the plan sponsor's

³¹ http://www.medscape.com/viewarticle/409605_2.

³² Ernst F, Grizzle A. "Drug Related Morbidity and Mortality: Updating the Cost-Of-Illness Model." J Am Pharm Assoc. 2001; 41:192-9.

³³ <http://www.medicalnewstoday.com/articles/147068.php>, 2009

employees under one roof. They also encourage the utilization of lower cost generic medications and administer pharmaceutical manufacturer drug rebate programs. PBMs are largely unrecognized by most employees, and even by many benefits managers, but they have a tremendous impact on U.S. healthcare decision-making because they influence more than 80 percent of drug coverage.³⁴ A growing number of state legislatures have debated or considered proposed new laws to define and regulate the operation of PBMs.³⁵

The 21st Century Intelligent Pharmacy Project should closely examine possible solutions to reform pharmacy reimbursement to appropriately compensate pharmacists and pharmacies for the provision of non-distributive patient care services such as MTM services. The recommendations of the working group could suggest models which would improve health outcomes while reducing overall costs. Additionally, issues such as PBM regulation and innovative cost avoidance programs should be investigated.

Developing Individual Responsibility and Patient Engagement

From patient safety to adherence to disease management services, individual patients or their caregivers *must* take a more active role in their health and healthcare. A tenant of the Center for Health Transformation has been the development of a patient-centered system. CHT believes in individual empowerment. An educated patient is more likely to make wise and appropriate health and healthcare decisions.

There needs to be a greater focus on patient education and the alignment of incentives to otherwise drive and support patient engagement. Generally, the internet, and specifically, healthcare transparency sites which provide consumers with education, price and quality measurements have helped the health systems become more individually centered. The Gallup organization has studied human nature and behavior for more than 70 years and during this time has developed a reputation for proven research, cutting-edge science, and trusted partnerships that drive results. Gallup suggests that there is a need to engage patients so they feel attached and loyal to their care providers. Their research says:

Patient care remains the most vital priority for healthcare providers, a focus that has not changed as the industry itself has continued to evolve. What has changed, though, is the control patients possess over their own treatment and care. Today patients are consumers of healthcare; more informed about care options and provider abilities, more vocal about their expectations for care, and more empowered to ‘shop around’ for the best healthcare provider possible.³⁶

In the 2008 report, *A New Definition of Patient Engagement*, the Center for the Advancement of Health states that “advances in medicine, technology and health care services promise increases in the length and quality of life for many Americans. However, to obtain the benefit of these advances to prevent, manage and cure disease depends increasingly on our own energy, knowledge and skills, regardless of whether we are well or sick.”³⁷

³⁴ <http://www.ncpanet.org/leggovaffairs/pbmbills/index.php>

³⁵ *NCSL Background Brief – 2007; State Legislation Affecting Pharmaceutical Benefit Managers (PBMs)*

³⁶ <http://www.gallup.com/consulting/healthcare/15388/Patient-Engagement.aspx>.

³⁷ “A New Definition of Patient Engagement,” Center for the Advancement of Health, 2008.

The *New Definition* report also indicates that improved surgical techniques have led to shorter hospital stays. Thus patients return home earlier and sicker and must adhere to drug, feeding, breathing and wound-healing regimens on their own rather than being cared for in the hospital. New pharmaceutical approaches mean that those with diabetes, asthma, cancer, heart disease and HIV/AIDS now must manage complex drug regimens on their own. In addition to shorter hospital stays, screening technologies and vaccines benefit individuals only if people participate in them regularly. The complex relationships among doctors, hospitals, diagnostic and laboratory services and health plans (absent transportable, interoperable electronic health records) mean that the best way for patients to ensure adequate communication of vital information is to take on many administrative tasks themselves. Lastly, the known impact of smoking, physical activity, diet, and environmental exposure on health is such that society increasingly believes that each individual has a responsibility to act to prevent disease to the extent they are able.³⁸

As employers continue to search for ways to stem rising healthcare costs, employee engagement has been a concurrent solution. One recent strategy that has emerged is consumer-directed health plans, which usually links high-deductible health insurance plans with tax-favored accounts such as health saving accounts (HSAs) and health reimbursement accounts (HRAs).³⁹ Data suggests that consumer-directed health plans are effective in reducing costs and increasing patient engagement partially because financial incentives, coupled with decision-making tools, encourage consumers to eliminate unnecessary care and seek lower-cost, higher-quality providers. More than 50 percent of U.S. employers now offer a consumer-directed health plan (CDHP), up from 47 percent last year, according to the latest survey of 489 large U.S. employers from Watson Wyatt, a consulting firm that specializes in employee benefits. An additional 8 percent of employers are expected to adopt a CDHP by 2010.⁴⁰

Since pharmacists are often a source of trusted health information, these highly trained professionals can assist with creating patient engagement. As the healthcare industry is increasingly consumer-driven, there has been a slow migration toward delivering exceptional personalized, individual patient care. However, healthcare organizations must meet and exceed the expectations of patients' both at the transactional and transformational aspects of care to create legitimate patient engagement. The benefits of patient engagement are not disputed. However, there is some concern about patient capacity. Patient surveys report there is a trend toward a sense of full engagement but in actuality patient engagement remains relatively rare.⁴¹ There are several successful models which the Center's project should and will investigate.

Advancing Technology

Pharmacists and pharmacies have historically embraced technology. For example, pharmacists have verified patient eligibility in real time since the early 1980's. Pharmacy dispensing systems access patient histories and alert pharmacists about potential drug-drug interactions. The implementation of advanced technology led to the possibility of electronic prescribing (e-prescribing). Technology drives e-prescribing—the use of computing devices to create, modify, review, and/or transmit medication prescriptions from a healthcare provider to a pharmacy. By replacing handwritten prescriptions, e-prescribing saves lives by improving patient safety and saves money by eliminating the inefficiencies of

³⁸ "A New Definition of Patient Engagement," Center for the Advancement of Health, 2008.

³⁹ Employee Benefit Research Institute, http://www.ebri.org/publications/notes/index.cfm?fa=notesDisp&content_id=4209.

⁴⁰ http://money.cnn.com/2009/03/16/news/economy/employers_healthcare/

⁴¹ "Patient Engagement in the United States;" David Lansky, PhD, Foundation for Accountability, 2003.

manual processes. It achieves this through clinical decision support at the point of care and by automating the transmission of data.⁴²

In CHT's acclaimed 2008 white paper, *Electronic Prescribing: Building, Deploying and Using E-prescribing to Save Lives and Save Money*, the advantages of e-prescribing were enumerated:

Electronic prescribing replaces pen and paper with automated, cutting-edge technology. Clinical decision-support tools improve patient safety by alerting prescribers to drug allergies and harmful drug interactions. And e-prescribing not only improves the process of medication dispensing, having formulary information from a patient's insurer at the point of care allows prescribers to reduce costs by choosing the most cost-effective treatment. To put it simply, e-prescribing improves quality and reduces costs simultaneously.⁴³

CHT remains committed to advancing and accelerating e-prescribing technology. On September 11, 2008, CHT launched the e-Healthy Savannah Project in collaboration with the Savannah Business Group (SBG), and local medical and pharmacy providers. The e-Healthy Savannah Project was created to accelerate the adoption of e-prescribing in Savannah and Chatham County.

The early results of the e-Healthy Savannah Project are encouraging. According to Surescripts – from our benchmark month of August 2008 through the end of October 2008, there has been an increase of 24% of e-prescribing patient events in the final quarter of 2008. These metrics were in place to measure e-prescribing, HIT adoption, patient safety encounters, and other e-health initiatives. The Savannah business community and the health community have continued to work together to rally around e-prescribing as a patient safety as an initiative.⁴⁴ First quarter 2009 should be even more impressive. In addition to a new Medicare e-prescribing incentive, some \$17 billion in other HIT incentives for physicians and hospitals are contained in the federal stimulus package. It is anticipated that there will be a continuation of the adoption of e-prescribing and other health information technology tools by physicians and health systems.⁴⁵ CHT's 21st Century Intelligent Pharmacy Project should collect best practices regarding this evolving solution and report strategies to accelerate its adoption.

Comment [WO1]: This section will need to be updated with 1Q 2009 data.

Accelerating New, Emerging Technology

Technology has created significant opportunities in healthcare but nowhere more than in pharmacy. Since most pharmacies have adopted technology solutions in terms of the dispensing functions, medication procurement, e-prescribing, third party eligibility and claims adjudication, we know there will be new emerging solutions such as robotics incorporated into pharmacy practice.

Emerging technology has the ability to carry out repetitious and routine mechanical processes in both the ambulatory and inpatient pharmacy setting. Automated pharmacy processes feature much higher precision and lower error rates than can be achieved by humans, thereby reducing medication errors, improving quality and freeing up pharmacists for more productive clinical interactions with patients. Through the use of innovative technology solutions, pharmacists can increase their oversight of critical

⁴² *Electronic Prescribing: Building, Deploying and Using E-prescribing to Save Lives and Save Money*, Center for Health Transformation, www.healthtransformation.net, 2008.

³² http://www.healthtransformation.net/cs/enewsletters/ga_project_quarterly/georgia_project_quarterly_december_2008#ron

⁴³ *Electronic Prescribing: Building, Deploying and Using E-prescribing to Save Lives and Save Money*, Center for Health Transformation, www.healthtransformation.net, 2008.

⁴⁴ http://www.uspharmacist.com/content/d/pharmacy_and_technology/c/12633/

processes during prescription preparation and dispensing, while at the same time making more efficient use of their overall professional time.⁴⁶ The 21st Century Intelligent Pharmacy Project should find cutting edge pharmacies, institutions, health systems and technology vendors that have advanced solutions and work to accelerate their adoption where appropriate.

Supporting Professional Pharmacy Education

In 1992, all colleges and schools pharmacy in the United States decided to make the Doctorate of Pharmacy (Pharm.D.) the only professional pharmacy degree, and to phase out the five-year bachelors of science in pharmacy professional degree offering. The typical Pharm.D program traditionally follows at least two years of pre-pharmacy education, and successful pharmacy students take six years of post-secondary education to obtain their Pharm.D.

The professional pharmacy curriculum is designed to produce pharmacists who have the abilities and skills that are necessary to achieve outcomes related to providing pharmaceutical care to patients; developing and managing medication distribution and control systems; managing the pharmacy; and, promoting public health and providing drug information and education. Students within pharmacy programs have a strong clinical foundation based in science, and their curriculum includes a year of working in all clinical aspects of the profession. These programs vary from school to school; however, the basic objectives are virtually the same. Some of these objectives are:

- To develop communication skills for effective interaction with patients and with practitioners of other health professions;
- To help develop a patient awareness in the practice of pharmacy;
- To enable the knowledge acquired in course work prior to clinical exposure, and to apply it to the solution of real problems;
- To develop awareness of professional responsibility for monitoring the medications taken by patients; and,
- To provide exceptional patient care specifically related to medication therapy.⁴⁷

The 21st Century Intelligent Pharmacy Project will identify centers of excellence in pharmacy education which have created demonstrated solutions that save lives and save money. The project should compile these best practices and programs in pharmacy education and examine ways to accelerate their adoption.

Protecting Patient Privacy

Safeguarding protected and confidential patient information should always be a priority of pharmacy providers. HIPAA's privacy regulations ensure a national platform of privacy protections for patients by limiting the ways that health plans, physicians, pharmacies, hospitals and other covered entities can use and access patients' personal medical information. The regulations protect medical records and other individually identifiable health information, whether it is on paper, in computers or communicated orally.⁴⁸

The privacy rule requires health plans, pharmacies, doctors and other entities to establish policies and procedures to protect the confidentiality of protected health information about their patients. These requirements are flexible and scalable to allow different covered entities to implement them as appropriate for their businesses or practices. Covered entities must limit the use to information and how that information is otherwise used. Covered entities must also protect patient privacy by having written

⁴⁷ Purdue University; <http://www.pharmacy.purdue.edu/students/prospective/ProfCurr.php>

⁴⁸ HHS; <http://www.hhs.gov/ocr/privacy/hipaa/understanding/coveredentities/index.html>

privacy procedures and ongoing employee training and the appointment of a privacy officer. The 21st Century Intelligent Pharmacy Project should find innovative solutions which protect sensitive and confidential patient information.

Conclusion: Development of the 21st Century Intelligent Pharmacy Project

CHT's 21st Century Intelligent Pharmacy Project will help to accelerate the widespread adoption of best practices and innovative solutions within the board world of pharmacy. From advancing patient safety initiatives to innovative disease management to implementing a patient-centered pharmacy care model, the project will bring together a diverse group of pharmacy leaders to serve as contributors and advisors for a book or robust white paper.

The project will define and report on the important issues, concepts and principles that save lives; improve pharmacy care; create value; empower patients and their caregivers to make intelligent, informed decisions; enhance and improve quality; and save money. The book or white paper will provide extraordinary insight for the pharmacy profession, policy makers on the state and federal level, pharmacy educators, health insurers, PBMs and other stakeholders in the healthcare system that utilize pharmacist services.