

*The* EMERGING ROLE *of the*  
**PHARMACIST**  
*in the* Healthcare Ecosystem

**Parata®**

## *An* INTRODUCTION

The U.S. healthcare system is undergoing a dramatic transition as the industry strives to achieve the goals of the Affordable Care Act (ACA) to improve an inefficient, unsustainable system. Physicians, insurers, pharmacists and other players in the patient care arena are shifting roles and forming more collaborative, coordinated networks to fill the gaps in care and reduce practice redundancies.

What are the key changes in this new healthcare scenario? Patient care is becoming more integrated and coordinated, focusing on the value and quality of care rather than on volume of services provided. Coordinated care teams provide patient-centered care and provider reimbursement is based on outcomes. Since the complexity of patient care has increased, there is a need for interaction and communication between a patient's care team—which may include healthcare providers, payers, community services, hospitals, pharmacists, care managers, regulators, family caregivers and others, with the patient at the center. Provider roles are shifting to make the delivery of care more efficient.

The first part of this paper addresses the changing healthcare environment and the importance of technology as a tool to achieve improved care and efficiency. The second part describes expanded opportunities for pharmacists to play new strategic roles.

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## What Ails the U.S. Healthcare System?

While healthcare in the U.S. is considered among the highest in quality, it is also among the most costly with significant gaps in care and inefficiencies. Currently payments are based on volume, not value or outcomes, and employers and taxpayers are not happy with the return on their investment.



50%

Americans had communication problems with primary care physician<sup>1</sup>

The 2011 National Scorecard on U.S. Health System Performance<sup>1</sup> found that care coordination is rare and almost half of Americans reported communication problems with their primary care physician. There has been substantial erosion in access to high-quality, efficiently delivered care, contributing to rising health care costs.<sup>1</sup>

Based on the scorecard's 42 indicators of health system performance, the U.S. scored 64 out of a possible 100 when comparing national averages with benchmarks of best performance achieved internationally.

Performance on indicators of health system efficiency remains especially low, with the U.S. scoring 53 out of 100 on measures that gauge the level of inappropriate, wasteful or fragmented care; avoidable hospitalization; variation in quality and costs; administrative costs; and use of information technology.



The U.S scored 64 out of 100 when comparing national averages with benchmarks of best performance achieved internationally.

In the 2008 rating, only 43% of adults with health problems could rapidly get an appointment when they were sick, 19% of U.S. patients reported undergoing duplicate tests, and only half received all recommended screening and preventive care. Further, the U.S. failed to keep pace with gains in health outcomes achieved by the leading countries. Among 16 developed countries, the U.S. ranked last on a measure of mortality that could have been avoided with appropriate medical care.<sup>1</sup>

A 2013 survey found that 37% of U.S. adults went without recommended care, did not see a doctor when they were sick, or failed to fill prescriptions because of costs, compared to 4-6% in the U.K. and Sweden.<sup>2</sup> In a comparison of 12 industrialized countries, healthcare spending in the U.S. in 2008 reached \$7,538 per capita—far more than any other country studied and more than double the Organization for Economic Cooperation and Development (OECD) median of \$2,995. Hospital spending per discharge far exceeded all other countries at \$16,708—nearly triple the OECD median of \$5,949.<sup>3</sup>

## By the NUMBERS

43%

Adults with health issues could rapidly get an appointment when sick<sup>1</sup>

19%

Patients reported undergoing duplicate testing<sup>1</sup>

50%

Patients reported receiving all recommended screening and preventative care<sup>1</sup>

37%

U.S. adults went without recommended care, did not see a doctor when sick or failed to fill prescriptions<sup>2</sup>

## By the RANKING



53/100

The U.S. scored 53 out of 100 on measures gauging inappropriate, wasteful, or fragmented care, avoidable hospitalization, variation in quality and costs, and use of IT<sup>1</sup>



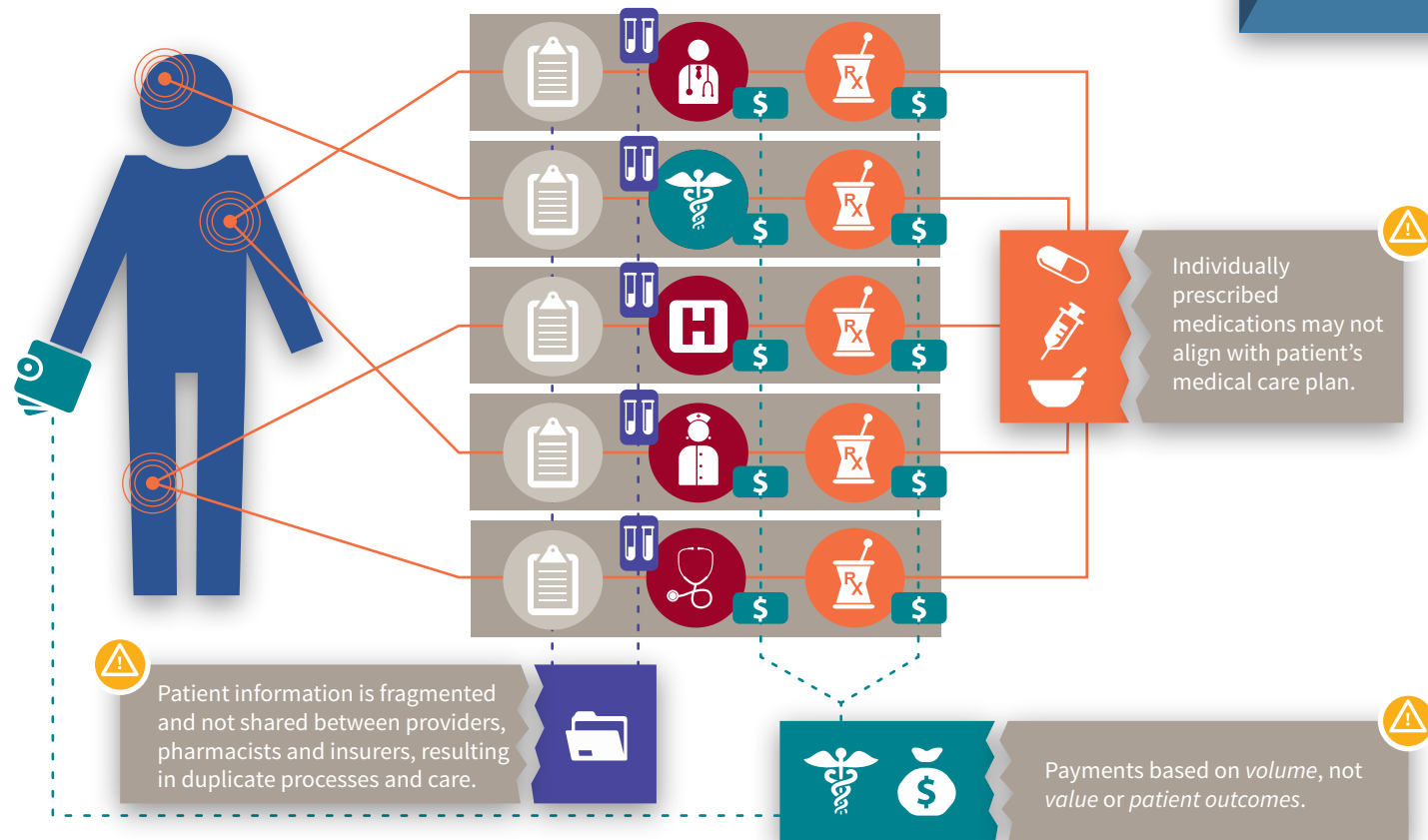
LAST PLACE

Among 16 developed countries, the U.S. ranked last on a measure of mortality that could have been avoided with appropriate medical care<sup>1</sup>

## What's AILING in the TRADITIONAL MODEL?

In the long-standing traditional model of healthcare, providers and payers still act in silos, without communicating with the patient and to each other about the patient. A patient interfaces with a primary care doctor, then a specialist, a pharmacist, hospital and an insurer, but patient information following each contact is usually not shared among the patient's medical team. This lack of coordination leads to duplicate processes and care, such as the patient filling out separate forms for each care team player or taking duplicate tests.

While abundant data is available, it is not actionable. The challenges are: Who should get the data? What data points do they need? Is there infrastructure in place to distribute it? What happens when others receive it?



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## Challenges of Healthcare Reform

Clearly, our healthcare system must change so we can provide more effective, efficiently administered, holistic care for patients. Action is urgently needed to fill gaps in the system, synchronize care among all healthcare team players, improve coordination of care between sites providers and more strategically allocate resources.

The primary focus should be on the patient and improved outcomes, which may best be achieved with more comprehensive, coordinated primary care. However, considering the limited time of the primary care physician facing a growing population of aging and chronically ill patients, many aspects of primary care can be transferred to other care team members, such as pharmacists and nurses. Pharmacists are well equipped to expand their role, shifting from the outpatient pharmacy risk bucket to the whole-patient risk bucket.

The healthcare system already has many of the needed resources for high-quality care, but it must be better organized to optimize efficiency and improve patient care. The system needs technology that integrates all patient information in a single database where medical records can be accessed quickly by all care team members. An incentive model is needed for each team player, as well as a mechanism to share the total cost-of-care risk with other providers and payers.

### *What's* **MISSING?**

Such gaps highlight the need for a whole-system approach to care delivery. Our healthcare system already has the resources for high-quality care, but it must be better organized.

#### TECHNOLOGY



Integrate all patient information in a single database where medical records can be accessed quickly by all care team members.

#### INCENTIVES



An incentive model for each team player to practice based on improving patient outcomes.

#### SHARED RISK



A mechanism to share total cost of care risk with other providers and payers.



# 19%

Medicare fee-for-service patients were rehospitalized within 30 days of discharge; half of the rehospitalized patients never see an outpatient doctor prior to rehospitalization<sup>4</sup>

Among the greatest gaps in the patient care continuum are: follow-up care after hospital discharge and outpatient procedures, monitoring adherence to prescribed treatments and comprehensive care management of chronically ill patients. Recurrent hospitalizations represent a substantial and often preventable human and financial burden, with 19% of Medicare fee-for-service patients rehospitalized within 30 days of discharge. Half of the rehospitalized patients never see an outpatient doctor prior to rehospitalization.<sup>4</sup>

Such gaps and fragmented care highlight the need for a whole-system approach to care delivery, where performance is measured and providers will be held accountable for performance across the continuum of care.

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## New Models of Patient Care

New models of care have emerged to remedy these issues, supported by the goals of the ACA, signed into law in March 2010. The ACA aims to improve the quality of care and affordability of health insurance and reduce costs to individuals and the government. To meet these goals, many healthcare team players across the country have already transformed how they deliver care.

The fundamental component to reach the ACA's goals is coordinated, integrated, accountable, patient-centered care with a focus on value, not volume. In this team approach, patients are part of the decision-making process of their care, and members of the medical care team connect with each other to manage patient's care, providing more comprehensive, coordinated care with a focus on patient outcomes. The primary care physician, who develops a patient's care plan, is the hub of the medical team and should be easily accessible to other players. Another key component of this new model is shared risk, where every health care provider on the care team has a gain or cost share dependent upon achieving quality and cost targets.

## COLLABORATION, INTEGRATION *and* IMPROVED OUTCOMES



Primary care physician develops a patient's care plan with the patient; is the hub of the medical team and is easily accessible to other players.

New models are emerging in the forms of consolidated and collaborative networks, like ACOs, PCMHs and Medical Neighborhoods.

Coordinated care teams provide efficient, patient-centered care. Provider reimbursement is based on outcomes, not volume of service.

**Results?** Increased accountability, fewer gaps in care, reduction in patient redundancies and value over volume.



## ■ Consolidated and Collaborative Networks

There are several types of coordinated care networks, and they are based on one of two strategies:

A **consolidated network** is a single system that “owns” patient care, such as Kaiser Permanente, who employs all members on a patient’s healthcare team, from doctors to surgeons to pharmacists. About 70% of hospitals are consolidated networks, which provide all care throughout a patient’s lifetime under a single umbrella following specific protocols. These systems enforce efficiency and have system-wide protocols and processes.

**Collaborative networks** involve smaller players who create informal, flexible relationships and health information exchanges, but do not own other entities in the network. These powerful collaborations generally do not have contracts or risk and reward systems. They are community-based, tied to a local neighborhood, and founded on personal relationships and trust. For example, five key pharmacies in a local community may collaborate with a local hospital. Collaborative networks establish common processes, technology platforms, registries and health information exchanges. They depend on advanced health information technology and, particularly in metropolitan areas, informatics. Their level of healthcare penetration in the community depends on the local ecosystems.

Consolidated and collaborative networks are similar in concept. Both are about improving outcomes and quality while lowering costs. Consolidated networks have a more formal organization structure, focus on accountability with responsibility for costs and care delivered, and most have a shared savings program with defined shared responsibility. Consolidated networks typically have a better data system and better analytics than collaborative networks, but are not closely connected to the local community. Collaborative arrangements depend on meaningful, personal relationships between the care team members and patients. Community care managers establish a relationship with local pharmacies and typically, patients receive conveniently located, personalized service from a pharmacist they know.

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## ■ *Accountable Care Organizations*

Accountable care organizations (ACOs), a type of consolidated network, are groups of doctors, hospitals and other healthcare providers who come together voluntarily and work to provide coordinated, high-quality care to their patients. ACOs are usually hospital-based or physician owned. Medicare ACOs were formed by the Affordable Care Act of 2010, with Medicaid and commercial ACOs following suit.

ACOs are designed to promote accountability and affordability, shared risk and savings and improved health outcomes for a defined population. The organizations are designed to hold providers and their payments to value metrics, quality of care endpoints and reductions in the total cost of care. These entities become accountable for the quality, cost and care of the Medicare fee-for-service beneficiaries assigned to them. Some may also take Medicaid and dual-eligible patients as well as patients on the state and federal health exchanges.

ACOs have a formal legal, management and leadership structure that includes administrative systems. They have integrated, interoperable healthcare information technology systems and analytics to gather the right data for patient care and effective reimbursements. Focused on continuous process improvement and a strategic allocation of resources, ACOs save the costs of redundant, outdated practices and are designed to improve profitability and provide better, more efficient patient care.

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## ■ *Primary Care Medical Home and Medical Neighborhoods*

A Primary Care Medical Home (PCMH) is a type of consolidated care network driven and possibly owned by physicians. This model is rapidly gaining momentum as an innovative approach to primary care. There are more than 6,037 PCMH sites in the U.S., according to the National Committee for Quality Assurance (NCQA).<sup>3</sup> A PCMH aims to strengthen the physician-patient relationship by replacing episodic care with coordinated care and a long-term healing relationship. Each patient has an ongoing relationship with a personal physician who leads a team that takes collective responsibility for patient care, providing for the patient's healthcare needs and arranging for appropriate care with other qualified clinicians.

PCMHs are expanding to include the entire care continuum, known as a Medical Neighborhood, which includes: a PCMH (with physicians, pharmacists, hospitals, payers, etc.) plus a constellation of clinicians, community and social services, long-term-care facilities and state and local public health agencies. They have strong community links, a patient-centered focus, clinical data-sharing, a clear agreement on each player's role and carefully managed transitions in a patient's care.<sup>3</sup>

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## ■ *Other Types of Networks*

Other new and emerging healthcare arrangements to provide primary care include clinics at pharmacies and retail chains, such as Target. Large employers are contracting with hospitals, ACOs, pharmacists and other healthcare entities to provide primary

care for their employees. Regardless of the model, all healthcare networks require timely, integrated and relevant shared data, transparent coordination of care among players and more efficient use of resources to manage patient wellness effectively.

### *Case Study: Community Care of North Carolina—An Effective Collaboration*

Community Care of North Carolina (CCNC) is a statewide, community-based, physician-led program that provides access to a primary care medical home for vulnerable populations and the multidisciplinary support to assure comprehensive, coordinated, high-quality care. Fourteen regional CCNC networks with 1,568 participating primary care practices manage the care of 1.2 million Medicaid and North Carolina Health Choice insurance enrollees in a nationally acclaimed model that has demonstrated substantial cost savings through community collaboration and quality improvement.

CCNC began a transitional care program to ensure coordination and continuity of care for high-risk Medicaid recipients with

complex healthcare needs following discharge from hospitals. The program involves face-to-face patient encounters with care managers—some receiving home visits within three days, timely outpatient follow-up with a physician, medication management, patient and family education, and patient self-management. Each CCNC network has an information-sharing relationship with virtually all hospitals serving Medicaid patients in the region, with the electronic exchange of real-time patient hospital data.

There is overwhelming evidence that CCNC is saving money while improving care to enrollees, as confirmed by several leading consulting firms and examined in peer-reviewed studies.

## Emerging Roles for Pharmacists

Increasingly, pharmacists are being recognized as critical members of a patient's integrated healthcare team. They have the qualifications and experience to play an even greater role in patient care -- providing primary and follow-up care, thereby filling gaps in the healthcare system. For the 11th consecutive year, pharmacists have ranked among the top three most trusted professionals in the U.S., according to a Gallup poll released in December 2013.<sup>6</sup> These attributes make them uniquely positioned to provide services to groups such as large employers, hospitals, primary care physicians and specialists, healthcare networks such as ACOs and PCMHs, as well as home health agencies, nursing homes and rehabilitation centers that help with patient care after hospitalization.

Pharmacists already partner with patients and other clinicians to improve care in these four areas: medication therapy management, medication reconciliation, disease management and patient education. Today, their role is changing at an avalanche pace and becoming more strategic.

Pharmacists, as well as nurse practitioners and physician's assistants, have the potential to fill gaps in the healthcare system, alleviating the shrinking time of primary care physicians to provide effective care for the growing Medicare population with chronic diseases. Medicare beneficiaries see an average of 13 different physicians and have 50 different prescriptions filled each year. They are 100 times more likely to have a preventable hospitalization than someone without a chronic condition.<sup>7</sup> In addition, one of three American adults takes five or more medications, and 88% of prescriptions filled are for Medicare beneficiaries with multiple illnesses.<sup>7</sup>



# TOP 3

For the 11<sup>th</sup> consecutive year, pharmacists have ranked among the **top three most trusted professionals** in the U.S., according to a Gallup poll released in December 2013.<sup>6</sup>

## 33%

American adults take five or more medications<sup>7</sup>

## 88%

Prescriptions filled are for Medicare beneficiaries with multiple illnesses<sup>7</sup>

## 50<sup>on</sup> avg

Prescriptions filled each year for Medicare beneficiaries, prescribed from 13 different physicians<sup>7</sup>

Pharmacists serve important roles in ensuring that the use of medicines results in the highest likelihood of achieving the desired health and economic outcome. They also provide clinical expertise on the selection, preparation and use of medications and help ensure medications reach their full potential for patients. As the professionals in charge of medication therapy management, pharmacists are responsible for ensuring optimal medication therapy outcomes.

There are numerous key areas where pharmacists can play an expanded role. In addition to helping patients with chronic diseases manage their conditions, pharmacists can provide follow-up consultations after primary care visits, clinic outpatient visits and hospital discharges. This support helps to prevent costly readmissions, overuse of additional services and additional medication costs.

Pharmacists can be medication care coordinators for PCMHs and primary care physicians, and members of chronic disease management teams that focus on episodes of care where related services are packaged together. There is a huge need for medication management, especially for diseases such as diabetes, congestive heart failure and HIV. Pharmacy students today are being trained to provide chronic disease management and other needed services to fill these gaps in our healthcare system.

Pharmacists also play an important role in ensuring patients get the care they need at home, through consultations at their local pharmacy or in the patient's home. Pharmacies are conveniently located where people live, work and socialize. This easy access enables direct patient engagement, which is the biggest challenge for payers, hospitals and physician practices. Independent pharmacies are also uniquely positioned to create local partnerships for adherence and monitoring programs, allowing pharmacists to have a more consultative relationship with patients. The local connection enables patients to get faster, easier access to care and increase exposure to the medical team.

## EMERGING OPPORTUNITIES *to play a more* STRATEGIC ROLE

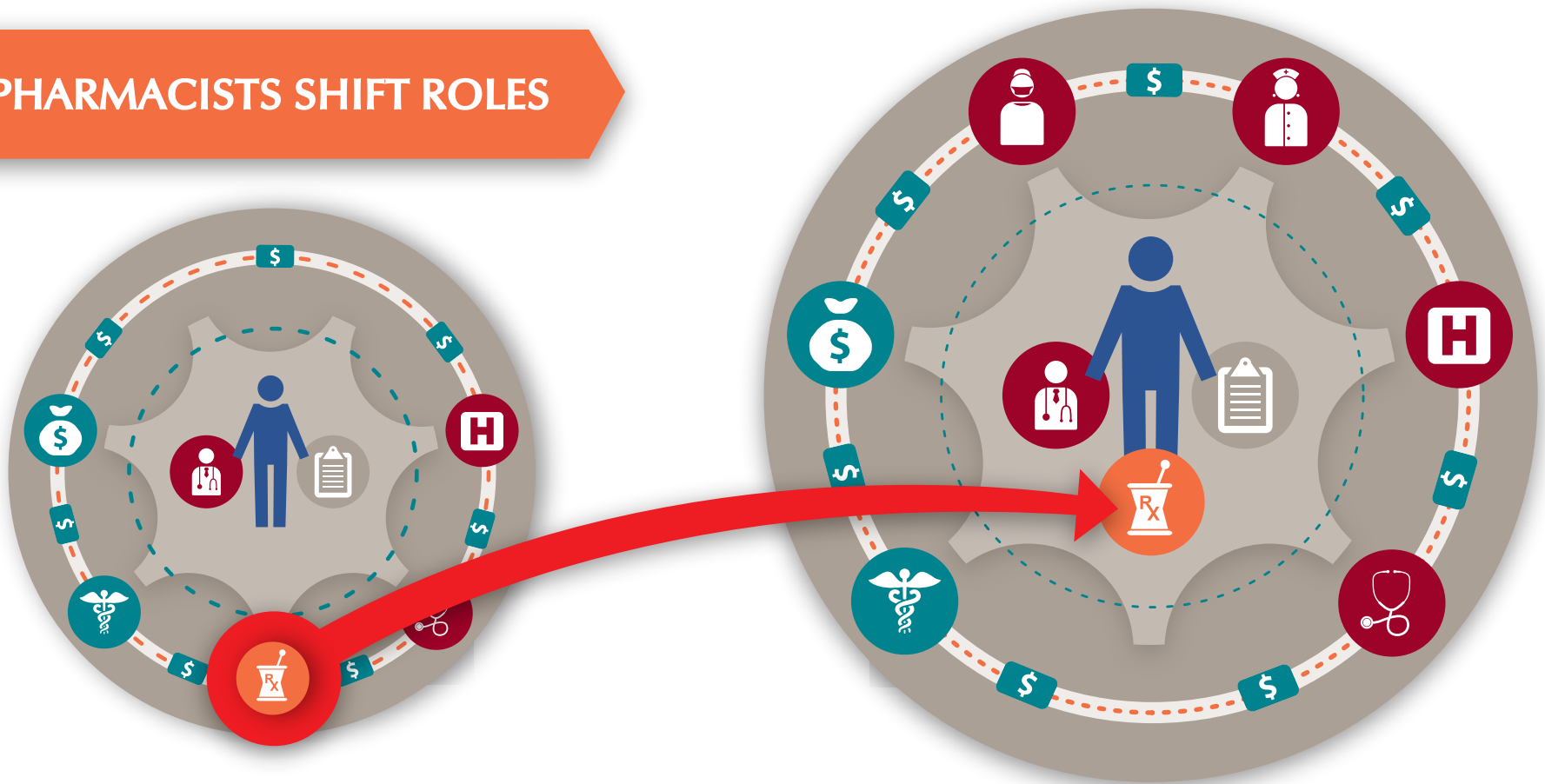
- Medication therapy management
- Medication reconciliation
- Medication care coordinators
- Disease management
- Follow-up consultation after primary care visits, clinic outpatient visits, hospital discharge
- Patient engagement
- Patient behavior coaching
- Patient education and consultation
- Members of chronic disease management teams
- Creating local partnerships for adherence and monitoring programs



## How Pharmacists Can Expand Their Role

In this rapidly changing healthcare environment, pharmacists have significant opportunities to become far more than medication processors—to expand their businesses, increase their revenue streams and play more strategic roles. Increasingly, they are becoming critical members of healthcare networks, contracting with other providers and employers, and assuming new roles in direct patient care. Pharmacists, particularly younger ones, have been moving from primarily filling prescriptions to broader roles such as counseling and providing personalized patient care.

### PHARMACISTS SHIFT ROLES



In a 2009 survey, 41% of U.S. pharmacists were devoted wholly to providing medications and 43% contributed significantly to providing patient care services.<sup>8</sup> As new pharmacists are licensed each year under new types of training and older pharmacists exit the workforce, the capacity of the pharmacist to provide broader



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patient care and counseling is likely to grow. Pharmacists will continue to expand their roles as medication care coordinators for PCMHs and primary care physicians, members of chronic disease management teams and providers of medication therapy management services. However, they will need easier access to other players on a patient's medical care team and the ability to share information through an integrated technology system.

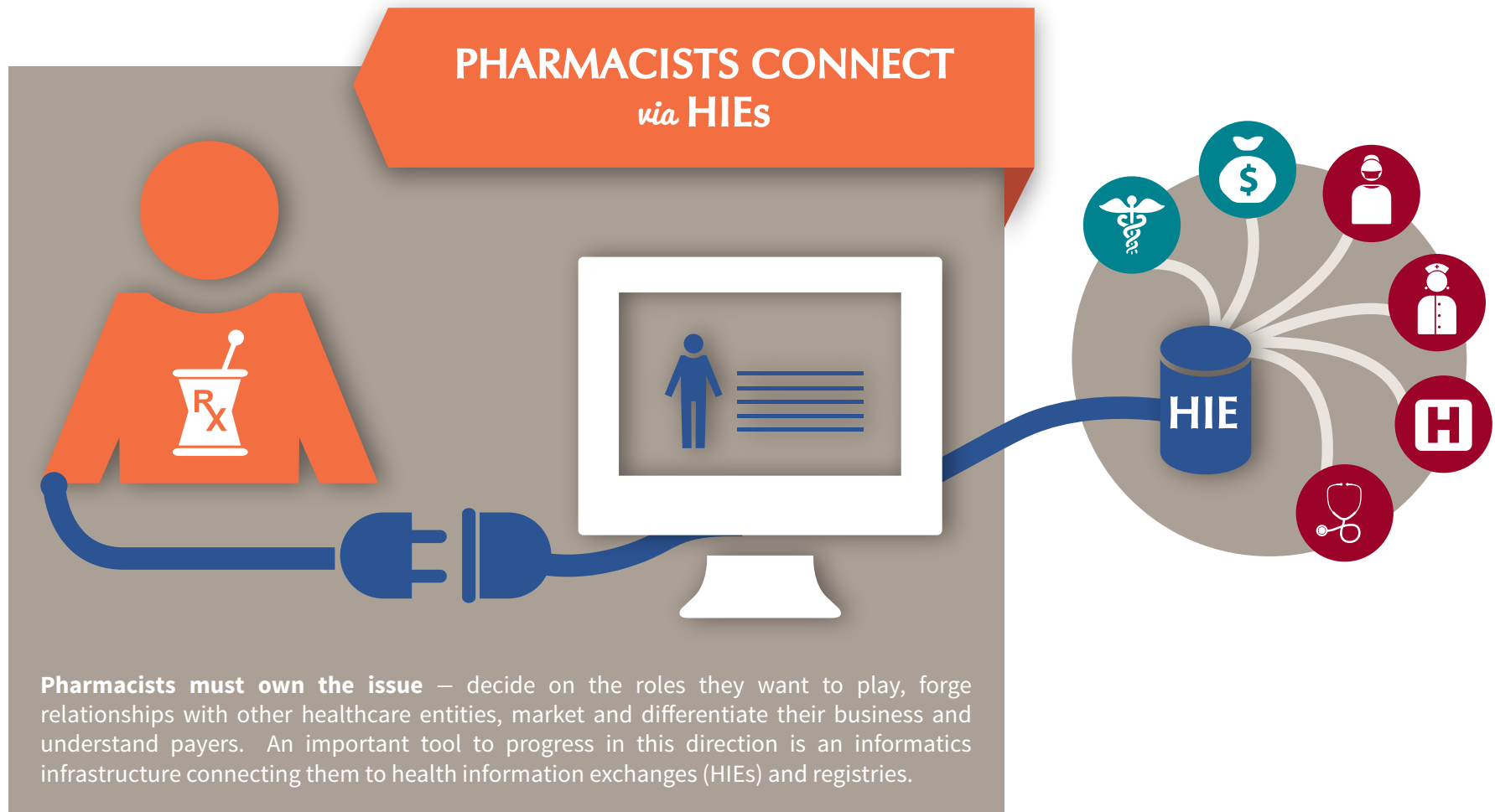
There is ample opportunity today for pharmacists to design their role. In the future with evidence-based medicine in place and clear medical guidelines, pharmacists may assume more primary care, from diagnosis to medical management and monitoring.

To further contribute to improved patient outcomes and adherence, pharmacists can extend their counseling role to engage patients in their own care. Motivational interviewing, a counseling technique to encourage patients' buy-in and commitment to a health care plan, is becoming a more common practice among pharmacists. As highly trusted professionals who are more easily accessible than physicians, they are well positioned to coach patients to commit to changing their behavior and improving their health.

To fill gaps in patient care and grow their businesses, pharmacists must own the issue—decide on the roles they want to play, proactively forge relationships with other healthcare entities, market and differentiate their business and understand payers. An important tool to progress in this direction is an informatics infrastructure connecting them to health information exchanges (HIEs) and registries.

## Integrated Technology: The Missing Link

Pharmacists and other members of the health care team need integrated informatics, a shared information platform, in order to support high-tech, high touch healthcare delivery. Technology can elevate the pharmacist's role with other health care providers by connecting them to HIEs for fast, secure communication of vital medical information.



Also, key information tracked at the pharmacy should be delivered to other providers involved in a patient's care through HIEs. Rapid exchange of relevant medication information between each member of the healthcare team will enable pharmacists and other team members to support outcome-based care.

Many care providers are moving toward a standard electronic way of capturing and exchanging health information. Pharmacists should follow suit, standardizing medication therapy management and using technology to collect information and document it, so others outside the system can understand the care pharmacists provide. The missing link is a pharmacy management system that connects with an HIE and can read and create standard electronic structured documents. Pharmacists should be included in an integrated technology system, moving standardized clinical data between healthcare providers and engaging patients in their care.

Pharmacists participating in a care network such as an ACO should have the following critical information systems: an electronic medical record (EMR), HIE, an activity-based costing system (ABC), patient-reported outcomes system (PRO) and an enterprise data warehouse (EDW). A system for e-prescribing, where pharmacist can receive and automatically fill electronically delivered prescriptions, is increasingly being adopted as a faster, potentially more accurate way to deliver prescriptions and reduce medication errors. Adopting the standards to facilitate e-prescribing is a key

action item in the government's plan to expedite the adoption of electronic medical records and build a national electronic health information infrastructure in the U.S.

The healthcare industry is building the infrastructure to eventually reach the stage where all data is accessible in a single technology platform. Technology is not yet interoperable between pharmacies and other healthcare players, and while there is plenty of data available, it is not actionable. The ACA helped ignite the growth of the e-health record. Robotics is helping pharmacies fill prescriptions, freeing time for pharmacists and pharmacy technicians. But the adoption of integrated technology systems by healthcare players is slow.

Pharmacists should be included in an integrated technology system, moving standardized clinical data between healthcare providers and engaging patients in their care.

## Conclusion

Now is the window of opportunity for pharmacists to carve a broader position in the changing healthcare landscape as it evolves to meet the goals of healthcare reform and the ACA. The industry is actively engaged in discussions and educational meetings on this topic, addressing potential new roles for pharmacists, ways to grow their business in sync with future trends, and sharing other pharmacists' success stories.

To succeed in a value-based healthcare system, pharmacists need to

- Define what they offer to contribute to improved patient outcomes and lower medical costs and the roles they want to play in patient care. Will they participate in a medical neighborhood or ACO? Partner with payers, hospitals and employers? Consolidate with other pharmacies? Expand their role in medication management, counseling or direct patient care?
- Determine what proactive steps to take to achieve these ends.
- Equip their practices with the right health information technology to support medication therapy management and care delivery that align with healthcare system trends.
- Support the industry in efforts to integrate the abundance of disparate healthcare data to capture and convert it into actionable information, creating value.

Now is the window of opportunity for pharmacists to carve a broader position in the changing healthcare landscape as it evolves to meet the goals of healthcare reform and the ACA.

Accountable, coordinated care models can be successful with a thoughtful strategy and the right information technology infrastructure, the thread to connect all members of a patient's healthcare team for more effective patient care. High-touch systems empower pharmacies to gain relevance and deliver a broader scope of care, and will enable the medical team to be more in touch with the patient.

Pharmacists have significant opportunity to define new ways they can help deliver optimal, more cost-effective care as the industry advances toward more affordable, patient-centered, holistic healthcare with improved access, outcomes and patient satisfaction. The industry is slow to adopt new models of healthcare delivery and system wide, fully integrated technology, but is making strides to achieve the tenets of healthcare reform. If pharmacists harness their underutilized value and capabilities, they will benefit from playing significant roles in the new healthcare ecosystem.

Pharmacists have significant opportunity to define new ways they can help deliver optimal, more cost-effective care as the industry advances toward more affordable, patient-centered, holistic healthcare with improved access, outcomes and patient satisfaction. If pharmacists harness their underutilized value and capabilities, they will benefit from playing significant roles in the new healthcare ecosystem.



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Nancy is the Executive Vice President of the American Health Data Institute, a company owned by the Key Family of Companies. Nancy has been with the Key Family of Companies since 1998 in the roles of Chief Operating Officer and President of the Southeast Office TPA. Prior to joining The Key Family of Companies, Nancy was the Director of Strategy and Design, Healthcare Management for Ford Motor Company in Dearborn, Michigan. Her responsibilities included group medical, workers compensation and disability benefits for active and retired employees of Ford Motor Company. Nancy was also on the Board of Directors of Blue Cross and Blue Shield of Michigan. Prior to joining Ford Motor Company, Nancy was the Deputy State Health Commissioner for the Indiana State Department of Health. Ms. Blough received her MBA, Doctorate of Jurisprudence and undergraduate degree from Indiana University. Nancy is an adjunct professor in the Belk School of Business at the University of North Carolina, as well as a member of the Kelly School of Business MBA Alumni Advisory Board. She is licensed to practice law, is a certified mediator and certified coach. Nancy recently completed her Master of Science degree in Organization Development.

### ***Joseph (Joe) Moose, PharmD, Moose Pharmacies***

Joseph Moose is a fourth-generation pharmacist with Moose Pharmacies and currently manages the Concord, North Carolina, location. The Moose family's focus is on keeping people healthy, promoting better health and giving patients the best treatment options. Moose earned his doctor of pharmacy at Campbell University in 1990. He is the co-chair of the NC Medicaid Drug Regimen Review Board, a member of the Pharmacy and Therapeutics Committee for NC Medicaid, a member of the NCPA Patient Care Committee and an adjunct assistant professor at the UNC Eshelman School of Pharmacy. He serves as

a community pharmacy preceptor for Wingate, Campbell and UNC-Chapel Hill students. Moose is actively involved in the North Carolina Association of Pharmacists and the National Community Pharmacists Association. He received the Community Care Pharmacist of the Year Award from NCAP in 2008.

### ***Robert (Rob) Nauman, Founder and Principal, BioPharma Advisors***

Robert Nauman founded BioPharma Advisors in 2003. He has more than 25 years of industry experience in the Pharmaceutical, Biotech and Medical Device industries. He is currently the membership director for the North Carolina Alliance for Healthy Communities. He also is a recognized globally as an expert in the area of opinion leader & advocacy relations, fair market valuation and contracting of healthcare professionals. As a previous Director, Global eBusiness, he led several global initiatives to define, design, develop, deliver and demonstrate the value of new marketing channels that help clients market and sell their products and services economically in a cost conscious business environment. Mr. Nauman earned his Bachelor of Arts degree in Business Administration from Illinois Wesleyan University.

### ***Keith Overfield, Director of Consulting Service, Parata Systems***

Keith Overfield has been with Parata Systems for the last nine years. Since 2009, he has served as the Director of Consulting Services. He focuses on helping pharmacies manage their Parata automation systems and aids them in establishing and developing new markets for their services. Previously, he was Parata's Director of Marketing from 2006 to 2009. Keith received his B.S.E. in Engineering Science from Vanderbilt University in Nashville, Tennessee, with minors in Business Administration and Management of Technology.

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CCNC is a parent organization of fourteen regional care management networks that bring together medical practices, county health departments, hospital systems, and mental-health providers to integrate care delivery for Medicaid, Medicare, private plans, employers and the uninsured. Under Trygstad's direction at CCNC, the Network Pharmacist program has grown to include more than fifty pharmacists who are involved in a number of activities, such as patient-level medication reconciliation, practice-level e-prescribing facilitation and network-level management of pharmacy benefits. He also plays an integral role in health information technology adoption and proliferation with CCNC practices and across the state, leading electronic prescribing adoption efforts as well as the development and deployment of a statewide medication management platform. Trygstad received his PharmD and MBA from Drake University, and he earned a PhD in pharmaceutical sciences from the Division of Pharmaceutical Outcomes and Policy at the UNC Eshelman School of Pharmacy.

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