

AACP REPORT

Vital Directions for Pharmacy Education and Practice: Report of the 2017-18 Argus Commission

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EXECUTIVE SUMMARY. The Argus Commission examined the National Academy of Medicine's publication "Vital Directions for Health and Health Care" and engaged with six guests from outside academic pharmacy to identify the salience of the key issues and recommendations for pharmacy education and practice. To be part of the changing health care system we must prepare graduates and faculty to be patient- and community-centered, to command electronic systems of communication with members of interprofessional teams and to create and apply real-world evidence. Sustainable practice models will depend upon the measurement of performance and the assessment of the value produced by clinicians. To that end, the Commission advances a proposed policy related to the knowledge graduates must possess in key areas, including informatics, data analytics, genomics and value-based payment schemes. This will require new forms of faculty development and engagement between AACP members and their communities.

KEY TERMS: Health policy, patient-centered, informatics, real-world evidence, quality measures, value-based payments

INTRODUCTION AND COMMITTEE CHARGES

The Argus Commission is comprised of the five most recent AACP presidents and is typically charged to study a "horizon topic" believed to be germane to the future of pharmacy education, research and/or practice. President Scott charged the Commission to:

1. Examine the National Academy of Medicine's publication "Vital Directions for Health and Health Care" and suggest the role that pharmacy could/should play in the proposed directions for health and healthcare.
2. Examine the systemic issues remaining in the way of practice transformation.
3. Identify strategic goals for AACP to collaborate with professional and regulatory organizations in order to accelerate practice transformation.
4. Identify strategies for schools/colleges of pharmacy to utilize in conjunction with stakeholders in order to optimize the pharmacist's role in practice.

In considering the best approach to these charges, Chair Bootman recommended that several guests from outside academic pharmacy be invited to engage with the Argus Commission in these discussions. Invitations were extended to a diverse group of leaders representing distinct

and important sectors of health, broadly defined. Six individuals met with the Commission during the first day of its October 16-17, 2017 in-person meeting. They represented organizations that promote the integration of patients and those that care for them into health services and education, public and private health care quality improvement experts, payers and policy makers, a physician leader of an academic health system, and a corporate chain pharmacy executive. Brief biographical sketches for each individual are included as Appendix A to this report.

Each member of the Argus Commission prepared a succinct summary of major issues identified in the Vital Directions for Health and Health Care report to stimulate discussion among participants. The day ended with Chairman Bootman asking each guest to identify one or more major "pearls" that the Argus Commission should lift up as the report of the 2017-18 Commission is completed. Their insightful comments frame the policy statements, recommendations and suggestions contained in the Argus Commission report.

SUMMARY OF THE VITAL DIRECTIONS REPORT

In 2016, the National Academy of Medicine (NAM) initiated a comprehensive study "which called on more than

150 leading researchers, scientists, and policy makers from across the United States to assess and provide expert guidance on 19 priority issues for U.S. health policy.”¹ The work of these groups was purposefully focused on the transition in presidential leadership in 2017 and sought to provide the new administration the best thoughts on necessary changes in health care organization, financing and delivery. The work of each group is available as individual white papers accessible on the National Academies of Science website.² The Argus Commission recommends that colleges and schools of pharmacy utilize these papers in discussions with faculty and students, potentially as a series of brown bag discussions, an elective seminar series, or as background for a strategic planning process. Each paper contains important contextual and guiding insights into which the issues of effective medication use can be interpreted.

Subsequent to the completion of the topical papers, 19 of the top health policy strategists created a synthesis paper articulating specific priorities for advancing health policy and practice changes to achieve attainable changes in the U.S. health and health care systems. They note the formidable challenges confronting the country which include:

- Persistent inequities in health
- Rapidly aging population
- New and emerging health threats
- Persisting care fragmentation and discontinuity
- Health expenditure cost and waste
- Constrained innovation due to outmoded approaches

These bipartisan health policy leaders were optimistic, noting that “The good news is that the nation is equipped to tackle the[se] formidable challenges from a position of unprecedented knowledge and substantial capacity.”¹ They note that new models of care delivery and financing and more patient-centric policies and practice are already driving improvements in health care. “The Vital Directions initiative is rooted in a vision of a health system that performs optimally in promoting, protecting, and restoring the health of individuals and populations, and helps each person reach their full potential for health and well-being.”¹

The Vital Directions steering committee identified a vision, three core goals, four action priorities and four essential infrastructure needs. The vision statement echoes the AACP vision statement in seeking “a health system that performs optimally . . . to help each person reach their full potential for health and well-being.”¹ The core goals reflect the mission of the academy for better health, high value care, and a strong scientific foundation drawing upon emerging technologies.

The four action priorities and 4 essential infrastructure needs were combined into five grouped themes (Figure 1). Each member of the Argus Commission accepted

responsibility for preparing a summary of the key issues in their assigned topics and presented that summary briefly during the joint meeting with our expert guests. A rich and engaging discussion followed the presentation of each summary and these discussions will be summarized briefly in the next section of the report, followed by specific suggestions and recommendations for AACP, our collaborators and our members.

Figure 1. Grouped Themes for Argus and Guest Discussion

- #1 – Empower People and Activate Communities
- #2 – Modernize Skills and Connect Care
- #3 – Pay for Value
- #4 – Measure What Matters Most
- #5 – Accelerate Real-World Evidence and Advance Science

VITAL DIRECTIONS THEMES

Before beginning the summary of discussion around the grouped themes from the NAM report, the guests encouraged AACP to consider this work in the context of the top priorities of the Trump Administration for two key government agencies - the Department of Health and Human Services (HHS) and the Centers for Medicare and Medicaid Services (CMS) (Figure 2). The Commission notes that changes in the position of HHS Secretary following the October 2017 meeting altered these priorities somewhat, however the discussion is still highly relevant to both Secretary Price and Azar’s top priorities.

Figure 2. Current Administration Top Health Priorities

Priorities of the Department of Health and Human Services (HHS)

- Opioid Misuse and Addiction
- Obesity
- Behavioral and Mental Health Care
- Reducing Burdens on Providers

Priorities of the Centers for Medicare and Medicaid Services (CMS)

- Putting Patients First
- Empowering Patients and Providers to Make Decisions
- State and Local Authority
- Innovation to Increase Quality
- CMS Customer Experience

Action Priorities

After aggregating expert opinions from 19 author groups which generated 68 recommendations for health and health care, the Vital Directions report deployed strong action language across themed areas. The verbs empower, activate, deliver, mobilize, and connect urge actions which should produce results. The report states

that, “these priorities address what are, in many ways, the greatest contributors to deficiencies in health system performance but are among the most tangible opportunities to make substantial impact and progress.”¹

Key Points: Empower People and Activate Communities

The essence of empowerment is to “*ensure that people, including patients and their families, are fully informed, engaged, and empowered as partners in health and health care choices, and that care matches well with patient goals.*”¹ Empowering individuals to lead their own health care decisions requires giving them ownership of their personal health data. Policy reform priorities should include:

- Link care and personal context so that regimens not only assure safety and efficacy, but also work in the context of one’s life and goals to reach mutually agreed upon care decisions.
- Communicate in a way appropriate to literacy by increasing the amount of information, as well as making it more understandable and useful. This action will foster trust and lead to a public which is more actively involved and health-literate.
- Promote effective telehealth tools to increase access to care. Barriers persist including reimbursement ineligibility and state-by-state variations in licensure rules.
- Ensure patient data access, ownership, and privacy. Siloed health information in electronic health records often remains inaccessible and assigned to physicians and hospitals.

Activating communities requires collaboration to mobilize resources for health progress. The aim is to *equip and empower communities to build and maintain conditions that support good health, link health and social services where possible, and identify and respond to health threats locally.* Zip code, rather than genetic code, can be a stronger predictor of health outcomes.³ Health is a product of available social supports, the physical environment, and personal behavior which is influenced by these factors.

Community health leaders can foster a culture of continuous health improvement.⁴ Potential policy reforms include:

- Investing in local leadership and infrastructure capacity for public health initiatives, including a “Health in All Policies Approach.”
- Creating and sustaining livable communities that are healthy, thriving, and prosperous.
- Targeting high-need individuals.
- Provide strong state-based capacity for local health efforts.

The group discussion emphasized the natural role pharmacists and student pharmacists can and do play in

patient education, interpretation of complex information, including patient-specific diagnostic, laboratory and genetic data, and community engagement. Academic pharmacy is well-aligned in cultural competence,⁵ wellness,⁶ and population health.⁷ The AACP Lawrence C. Weaver Award annually recognizes one college or school of pharmacy from many high quality nominations for transformative community engagement as demonstrated by organizational culture. Several recent AACP standing committees, which focused on advocacy, community engagement, and strategic engagement, have framed successful approaches for individual faculty and students to become agents of change in their communities.⁸⁻¹¹

The crosswalk between HHS and CMS priorities and areas where the profession can make significant contributions include a focus on obesity and the role of weight management in prevention and management of chronic disease, opioid misuse and addiction, and behavioral and mental health care. The expert guests specifically stated that, “AACCP needs to trade on pharmacists’ accessibility and therefore lead on, build on, and execute on this agenda.” Yet barriers to effective education and empowerment persist. Having sufficient time and access to information, such as diagnosis and target goals of therapy, hinder the effectiveness of pharmacists’ interactions with patients and their care partners. Cultural sensitivity and literacy issues are also important in designing and delivering effective patient education, as is increased emphasis on the greater context of individuals’ lives as explained in the Vital Directions report.

AACP has many current policies on competencies for leading change, cultural competence and community engagement, and determinants of health.¹² The expert guests offered pertinent guidance to consider. This included the idea of applying lessons from Surgeon General Koop for engagement of patients and families in addressing a plan for HIV/AIDS to the current opioid crisis. Activate communities so that service learning helps to create truly effective citizens. Identify “health in all policies’ by advocating for a highway infrastructure bill which also includes sidewalks and bike paths to promote healthy lifestyles. Consider where telehealth might take us, especially to combat isolation for some individuals and communities.

Connecting Care and Modernizing Skills

Connecting care is another action priority within the Vital Directions report and reflects the need for “seamless digital interfaces [that support] best care.” Modernizing skills of the health workforce is one of four essential infrastructure needs identified by NAM. Specifically the emphasis is on skills for integrated care for meeting the needs of an increasingly complex patient population.¹

Despite significant progress in implementing electronic health records (EHR) and creating substantial patient data repositories, there are still insufficient standards for data exchange and security and insufficient integration of health records with patient health devices and tools. Many clinicians lack basic information technology (IT) literacy and there is not an adequate number of IT specialists and technical support to advance health informatics to the full potential for prevention, early diagnosis and longitudinal treatment of chronic conditions.

Several key issues were raised in the discussion of the centrality of fluid information exchange among clinicians and with patients. The guests noted that when approaching issues like accelerating implementation of effective health IT, leaders should recognize that it is virtually certain that there are industries and organizations that have succeeded in implementing, in this case, fully functional information systems and are likely quite willing to share and offer guidance.

In terms of clinician to patient communication, the group identified progress from tools like OneNote that offers a tested strategy to allow patients ownership of their own health data. Some leading EHR vendors have a one-button function that allows notes from patients' clinical records to be shared easily with patients.

At the national level pharmacy has coalesced work on integration of pharmacy informatics with the broader electronic health record evolution. The Pharmacy Health Information Technology (HIT) Collaborative was formed in the fall of 2010 and AACP has been a member from the initiation of the organization. Individuals from the academy have been active contributors to various work streams that all aim to ensure that pharmacists are not sidelined in the health IT ecosystem. Recently, the group published *The Roadmap for Pharmacy Health Information Technology Integration in U.S. Health Care*.¹³ This strategic plan outlines pharmacy HIT goals for the next four years including pharmacists' role in care delivery, e-prescribing, medication therapy management, and immunizations. More information about the Collaborative and opportunities to engage are available on the Pharmacy HIT website.¹⁴

Fox and colleagues¹⁵ published a progress report on the state of pharmacy informatics education in U.S. schools and colleges of pharmacy as well as related commentaries^{16,17} on pharmacy informatics education in AACP's journal in 2017. The progress report found little change in informatics education (36% of schools in 2017) since the initial report in 2005 (33% of schools). This group proposes complementary approaches to informatics education for pharmacy students: to incorporate

fundamental informatics education into curricula for all students and to train those interested in becoming informatics experts to design, develop, implement, and evaluate HIT. The 2014-15 Argus Commission report addressed big data and how informatics contributes to "the ability of researchers and clinicians to integrate big data analytics and knowledge into practice, research, and education."¹⁸

The focus of the modernizing skills segment of the report included: *Fostering modern skillsets through integrated and innovative education and training approaches that can meet the rapidly evolving demands of health care, biomedical science and industry*.¹ Current health professions education programs are accelerating the incorporation of interprofessional education (IPE) across all professions. Emphasis on IPE now is included in essentially all accreditation standards for these programs. Pharmacy education is considered a leader in interprofessional learning on many campuses and nationally. AACP continues to provide leadership for the Interprofessional Education Collaborative (IPEC),¹⁹ including convening 20 national health professions education associations twice annually at IPEC Council meetings, planning and delivering two IPEC faculty development institutes each year, and aggregating resources to advance IPE among member schools and programs. In 2017, IPEC offered an inaugural Interprofessional Deans Leadership Program that was highly successful and will be offered again in the future.

In addition to training to work collaboratively in interdisciplinary teams, the next generation of health care professionals need also to be technically skilled and facile with health information technology. This requires not only using information technology, but also understanding how data are collected, analyzed and applied.²⁰ Identifying a sufficient number of experts in HIT to achieve these educational goals may be difficult. One strategy would be to partner with IPEC to identify a cohort of multidisciplinary HIT experts. HIT could be utilized as a topic for IPE training since all health professionals need these skills.

Novel approaches to health professions education, including the application of new learning technologies and models, are finding their way into pharmacy education and other health disciplines. In November 2017, the NAM Global Forum on Innovation in Health Professions Education had a multiday workshop on improving health professions education through technology. Presentations from the workshop are available on the NAM website²¹ and a workshop report will be forthcoming by mid-2018.

Accelerating Real-World Evidence and Advancing Science

The NAM paper on Vital Directions on Health and Health Care¹ discusses the need to accelerate clinical research that enlists patients as partners, takes advantage of big data, and collects real-world data on care or program experience for continuous learning, improving, and tailoring of care. The report notes the existing ability to collect enormous swaths of real-world, clinical and health-related data holds immense promise for improving clinical care by better informing clinical choice, improving drug and medical device safety, effectiveness assessment, and scientific discovery. Technical, regulatory, and cultural barriers to harnessing these data for societal benefit persist—notably, an outdated clinical research paradigm and inadequate data-sharing incentive structure.

To accelerate reliable evidence, the NAM Vital Directions paper recommends policy reforms that:

- Advance continuous learning clinical research drawing on real-world evidence.
- Foster a culture of data sharing by strengthening incentives and standards.
- Partner with patients and families to support evidence generation and sharing.

Example policy initiatives from the Vital Directions discussion paper includes: support public-private partnerships to build on existing pilot studies to assess and expand real-world evidence development in both pre-approval and post-approval settings; continue to promote and harmonize federal standards relevant to data-sharing, as well as to ownership, security, and privacy of health-care data; incentivize data-sharing - for example, create a reimbursement benefit for health systems that facilitate data access and sharing between patients and researchers; and establish initiatives to build patient skill-sets for engagement. In addition, better define value in terms that reflect the patient perspective, and assess and identify measures for patient trustworthiness and participation.

The NAM paper also discusses the redesign of training, financial support, and research and regulatory policies to enable and encourage transformative innovation in science and its translation. It notes that cumbersome and outdated regulatory review processes are making it more difficult to bring promising therapies and devices to market. The slowing pace and rising cost of biomedical innovation are fueling calls for new discovery, development, production, and commercialization models, as well as more collaborative partnerships capable of driving rapid innovation.

To advance the pace of innovation, the paper recommends policy reforms should:

- Promote the conditions for scientific innovation. Advancing science first and foremost requires investment.
- Support an adaptive and patient-oriented regulatory framework.
- Foster cross-disciplinary and public-private partnerships.

Example policy initiatives from the Vital Directions discussion paper includes: ensure research funding for basic and applied sciences; support public-private programs to invest in and advance the science and related applications of big data analysis, such as cognitive computing; develop and apply a strategy for engaging patients as active partners in the advancement of innovative approaches to clinical research, including their support for expanded use of clinical data for discovery and for appropriate communication and experience feedback between industry and patients throughout the discovery and development processes; support precompetitive collaborations including industry, government, and academia—such as the Accelerating Medicines Partnership—to achieve needed breakthroughs in the most challenging therapeutic areas that cannot be done by any sector alone.

The final area of discussion between the Argus Commission and guests focused on the need to make meaningful changes in our approach to clinical research and the preparation of clinician scientists. The aim is to “accelerate clinical research that enlist patients as partners, takes advantage of big data, and collects real-world data on care or program experience for continuous learning, improving, and tailoring of care.”¹ The ability to collect, analyze and apply enormous swaths of real-world clinical and health-related data holds great potential to achieve the aims of better health and better experience at lower costs. However, technical, regulatory, and cultural barriers to harnessing these data for societal benefit persist. Among these, an outdated clinical research paradigm and an inadequate data-sharing incentive structure restrict progress.

Effective use of real-world data will require health professionals who have appropriate knowledge and skills. A big education gap in health professions and health science education is the need to teach students how to use and interpret data analytics to improve care.^{15,16} To be valid and effective, use of data analytics must be supported by more than demonstration of associations, ideally by methodological demonstration of cause and effect relationships. The most appropriate use of real-world data should also be considered. It may be that real-world data is more useful for quality improvement efforts than for demonstrating cause-effect relationships.

The NAM papers offer a number of policy initiatives that hold promise in achieving the benefits in this arena (summarized above). To fully realize the goals in this area there must be changes in training, financial resources, and research and regulatory policies that enable and encourage transformational innovation in science and its translation into more effective and patient-centered care. PharmD student and other health professions learners must learn how to access and interpret data analytics to improve care. This represents an excellent focus for interprofessional education.

A growing career direction and role for pharmacists has been in information technology and analytics (the “IT pharmacist”). How are these individuals trained and what are their capabilities within the health care system? Are there formal training programs beyond typical minimal coverage in curricula in doctor of pharmacy programs? As one example, the National Library of Medicine offered a course in Biomedical Informatics hosted by Augusta University.²² Health informatics courses have also been developed at several schools of pharmacy.^{16,23-25}

As noted in the section on connecting care and modernizing skills, all clinicians should achieve foundational literacy in health informatics and clinical data management to use with individual patients and populations. To fully achieve the potential of learning health systems however, a significantly larger cadre of health IT experts is needed.²³ The American Medical Informatics Association has recently spearheaded the development of specialty certification in health IT for a diverse set of disciplines.²⁶ The American Society of Health-System Pharmacists (ASHP) notes that pharmacists specializing in health IT is among their most rapidly growing membership group. The ASHP website²⁷ provides a significant collection of resources for pharmacists interested in advancing their ability to contribute to the effective use of health IT in health systems.

Argus guests warned about the potential harm in pursuing the application of big data as research, noting that such analyses can produce numerous associations that can cause clinicians and the public to jump to conclusions in assuming causation that may or may not be correct. There was agreement that big data likely has more value in quality improvement and that hypothesis-driven research using controls still has an important role to play in contemporary health care delivery.

Measure What Matters Most

To Err is Human²⁸ and Crossing the Quality Chasm,²⁹ two transformative Institute of Medicine Reports from 1999 and 2000, respectively, catalyzed the rapid proliferation of performance measures and related data. While this movement has proven beneficial in advancing accountability and

performance, “concerns are growing about the time, cost, validity, generalizability, and overall burden of clinical [performance] measurement.”¹ The Argus Commission and expert guests were unanimous in declaring the need for parsimonious sets of core measures to drive quality improvement.

Important work has been done and is on-going to achieve this aim. The NAM report *Vital Signs*³⁰ offers a framework for 15 measures of health, care quality, value, engagement and public communication. The report recommends that the Department of Health and Human Services identify a lead organization to coordinate a collaborative process for the development and refinement for each of these measures. It further acknowledges that the science of quality measurement today is insufficient to guide the appropriate development and use of quality measures in health care.

The desired future direction for measure development and use is to shift from process to outcome measures. An unintended consequence of this could be the shift in attention toward acute and end of life interventions at the expense of more preventive services. Patients and families do care about outcomes, but the experience of care is also very important. Current measures of experience are unsatisfactory. An opportunity exists to more actively engage in a collaborative process with patients and clinicians in developing the approach to care and to quality measurement.

The value of improvement networks was reinforced in the context of collecting and utilizing performance data. One guest suggested that more progress in quality improvement could come from having the top 50 health system leaders critically examine what is working in high-performing systems rather than focusing on the problems confronting lower performers who cite all the barriers to enhancing their systems’ performance and health outcomes.

As noted previously, numerous quality measures relate to the appropriate use and management of medications. This presents a great opportunity for the profession and an imperative for pharmacy education. Pharmacy graduates and practitioners must have sufficient knowledge of quality measures and their use to advance both their own practices and their collaborations with other clinicians and health systems working to improve their performance using existing and emerging measures. Cooley and colleagues document the current state of quality improvement education in US colleges and schools of pharmacy, finding that significant elements of quality and quality measurement are lacking from many PharmD curricula.³¹ The authors offer recommendations for improving this essential element of the curriculum to equip graduates with the requisite knowledge and skills to

incorporate performance measurement and improvement into practice.

Pharmacy organizations, including AACP, responded to the need for focused attention to quality measures pertinent to pharmacy practice in the establishment in 2007 of the Pharmacy Quality Alliance (PQA). With grant support from PQA, collaborators from several schools of pharmacy developed an educational program known as EPIQ (Educating Pharmacists in Quality) which provides 17 modules related to the development and use of quality measures relevant to pharmacy practice.³² EPIQ was recognized by the Academy for Healthcare Improvement with the 2015 Duncan Neuhauser Award for Curricular Innovation.³³

PQA established Pharmacy Quality Solutions³⁴ as a joint venture in 2013 between PQA and CeCity (now operated by Premier). Its goal is to operationalize real-time performance measurement systems for community pharmacies. Today, over 60,000 community pharmacies have contracted with PQS to deliver meaningful quality metrics to individual practices. Increasingly, health plans and pharmacy benefit management contracts are basing some compensation on performance. AACP has engaged in dialogue with PQA and PQS on a potential pilot of providing colleges and schools of pharmacy access to the information in PQS systems and reports for educational purposes. Having students well versed on the use of the leading quality reporting system in community pharmacy would enhance students' future contributions to advanced pharmacy practice rotation sites and enrich the learning experience for both students and current practitioners.

Pay for Value

Shifting health care compensation models from fee for service to value-based payments is the first action priority in the NAM report and significant movement can be identified across health systems and payers today. CMS has vowed that the vast majority of payments in Medicare will be value-based by the end of 2018.³⁵ The intent of this movement in health financing is to "design and promote strategies, policies and payments that support the best results . . . for individuals and the populations of which they are a part."¹

To be successful there must be an expansion of new payment models that hold providers accountable for delivering patient-centered care; clinicians and health systems must have the core competencies needed to practice successfully within these models; and barriers for the integration of social services with medical services must be removed. Priority should be given to identifying the small percentage of individuals, known as

hot-spotters, who consume a large percentage of total health spending. Frequently the underlying issues contributing to their extreme utilization of health services relate more to the lack of social services (e.g., housing) than to health-related concerns. Nussbaum and McClellan strongly suggest the use of a framework to classify alternative payment models.³⁶ This is a wonderful opportunity for pharmacy leadership to work within this paradigm. There is growing research on establishing successful alternative payment models and pharmacy researchers need to work closely with health plans as these systems evolve to the level of implementation.

The expert guests agreed that there is a large opportunity for pharmacy in the pay for value and bundled payment arena. They noted the shift in perspective in the physician community from viewing pharmacists as competitors to recognizing that pharmacist integration into patient care teams, especially in the delivery of complex chronic care services, advanced patient education, monitoring, adherence and attainment of goals of therapy. This, in turn, improves quality metrics which disproportionately relate to the effective use and management of pharmacotherapeutic interventions.

Challenges in effective integration of pharmacists into practices with increasing percentages of value-based compensation include the need to improve the consistency of our practice models and define sustainable coverage for such services. It is essential that work with health care practices and payers demonstrates the return on investment when pharmacists' services are a component of an integrated care model, even when drug expenditures may increase due to the use of more effective therapies and increased patient adherence. The overall value equation for the pharmacy profession was first estimated when Johnson and Bootman demonstrated that the economic consequences of medication related problems was in excess of \$76 Billion, basically equal to what the nation spent on pharmaceuticals during the same time period.³⁷ This study was recently updated utilizing the same methodology and found that in 2017 costs were in excess of \$528 billion, again equal to what we spend annually for medications in the U.S., further demonstrating the value that could be achieved.³⁸ Johnson and Bootman determined in the years following that at least 60% savings could be achieved with improved pharmacists' efforts.³⁹ The value of pharmacists' services has since been a major topic of research and communication and adequately demonstrates the role of pharmacists' practice models that emphasize value-based payments.⁴⁰⁻⁴²

Practice transformation networks are a powerful model for spreading innovations. Historically, the Patient Safety and Clinical Pharmacy Services Collaborative

supported by the Office of Pharmacy Affairs in the Health Resources and Services Administration used the concepts of a transformation collaborative to accelerate the implementation of medication management services in safety net sites such as community health centers. Several articles in a recent issue of *Health Affairs*⁴³ present findings and recommendations from the study of successful examples of diffusion of innovation related to the use of practice transformation networks.

Pharmacy education has had a long history of providing leadership in the development of clinical pharmacy practice models as well as the conduct of research that addressed the value equation in health care. Innovations in pharmacy practice were put forth to improve the cost-effective delivery of health care. From the beginning of the clinical pharmacy services movement academic leaders recognized that research demonstrating the value to health care as a result of services was essential for further implementation. This was long before value-based payment schemes were being discussed by medicine or health care policy leaders. Pharmacy academia, and the profession in general, stands ready to further help elevate value based payment systems to mainstream health care delivery. Our role in the academy is to address the first challenge identified in the Vital Directions report: to further develop core competencies in our graduates to succeed in the new practice models that reimburse for value-based care. The profession's overall goal has always been to ensure effective, safe, efficient and most affordable drug therapy that improves patient outcomes. Pharmacy education plays a critical role in educating future pharmacists in the conduct of research that demonstrates the value contributed to health care overall. Pharmacy educators also need to continue their leadership role to evolve practice models that work within alternative payment models.

SYSTEMIC ISSUES CONFRONTING THE PROFESSION TODAY

President Scott's charges included an examination of the systemic issues that confront the profession and blunt efforts for practice transformation. One needs look no farther than the top priorities in the 2016 AACP Strategic Plan to identify imperatives for change. Priority #2 reflects on the lack of public understanding of the contemporary preparation of pharmacists and the expanding contributions they make across diverse practice environments. Priority #3 challenges AACP and our members to use our leadership to accelerate transformation in both education and practice so that our graduates are not only equipped to deliver patient-centered care to individuals and address population needs but that the opportunities to use those

competencies are sufficiently plentiful to put education into action. Priority #4 addresses the changes needed in research and in research education that is very aligned with the recommendations for change in the NAM Vital Directions report.

Since the House of Delegates adopted the current plan in July 2016, AACP invested its initial efforts in implementing Priority #1 which aims to reverse the trend in applications to colleges and schools of pharmacy. That said, it has always been acknowledged that all efforts to increase the quantity and quality of applications are dependent upon progress in the other top priorities. To that end, AACP's Council of Deans and Council of Faculties immediately embarked upon a collaborative effort to accelerate the integration of the consensus Pharmacist Patient Care Practice model into the PharmD curricula at over 30 schools of pharmacy.⁴⁴ Other practice transformation projects will be forthcoming.

In May 2018, AACP and several partner organizations launched a national public awareness campaign aimed at changing consumer understanding of contemporary pharmacy practice and education. Targeting key decision makers, notably but not exclusively women between the ages of 35 and 55 who make many of the decisions affecting the health of both nuclear and extended family members, the campaign is anticipated to last for several years as resources are available. Increasing consumer demand for pharmacists' medication management services and students' interest in pharmacy education and careers are the anticipated outcomes of this dynamic national campaign.

AACP members have been activated in implementation of these strategic priorities. As noted, over 30 schools are participating in the practice model education collaborative. Almost 150 individuals have volunteered to serve as recruitment champions to extend the reach of enhanced national recruitment efforts and over 100 individuals serve as "brand ambassadors" to advance our consumer awareness priority. AACP's Board of Directors assumes that these opportunities for direct member engagement will continue to grow as the Association accelerates its implementation of the strategic plan in 2018 and beyond.

SUMMARY AND CONCLUSIONS

As noted in the introduction, the Vital Directions initiative identified 19 key issues for achieving the nation's health advances and each was analyzed by experts and published by the Academy. The Argus Commission and expert guests identified those that they believe hold the greatest relevance and importance today, while recognizing that all 19 issues are salient. The top four issues include: 1) addressing social determinants while will

achieve priorities in chronic disease prevention and treatment; 2) changing benefit designs to promote efficient and effective and affordable care, likely increasing the expertise for managing complex, coordinated care for high need patients; 3) training the workforce for 21st century science and care; and, 4) advancing IT system interoperability and use for better care and evidence to support continuous learning systems evolution. The Commission has developed a series of policy statements, recommendations for AACP and suggestions for member colleges/schools.

POLICY STATEMENTS, RECOMMENDATIONS AND SUGGESTIONS

Policy Statement 1: AACP believes that all pharmacy graduates must enter practice with the requisite knowledge and competencies to achieve success in value-based practice and payment models, including but not limited to health informatics, data analytics and quality measurement and reporting. (Source: 2017-18 Argus Commission)

Recommendation 1: Consistent with Strategic Priority #3, AACP should lead a practice transformation collaborative that aims to accelerate the spread and sustainability of integrating medication management services into physician office practices and other appropriate environments.

Recommendation 2: AACP should identify electronic tools that have been demonstrated to enhance pharmacists' ability to improve medication management services and patient health and nurture their integration into curricula.

Recommendation 3: AACP should re-examine the historical Teachers Seminar that provided multi-day workshops around a specific disciplinary area and offer a new seminar series on high priority topics (e.g., genomics, health information technology, telehealth/pharmacy) to accelerate their integration into the PharmD and graduate curricula.

Suggestion 1: Colleges and schools of pharmacy should utilize the National Academy of Medicine Vital Directions for Health and Healthcare papers for discussions among faculty and students, including brown bag discussions, an elective seminar series, and in strategic planning.

Suggestion 2: Colleges and schools of pharmacy should identify local area experts in pharmacogenomics, informatics, quality measurement/improvement, and other high priority topics and nurture collaborations to advance education, research and practice.

ACKNOWLEDGEMENT

The Argus Commission sincerely appreciates the contributions of our six guest participants whose insights and expertise added significantly to the work of the commission.

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Appendix A. Argus Expert Guest Biographies

Dr. Philecia C. Avery, PharmD is an industry-recognized healthcare and retail expert. With over 20 years of extensive and varied healthcare and leadership experience, including retail pharmacy management and operations, payor and provider operations and relations, regulatory compliance, procurement relations and management, Dr. Avery is distinctly qualified to bring an authentic approach to inclusive intentional leading with passion and purpose. Prior to starting her own company, she most recently led Kroger's retail, mail order and central fill pharmacy teams, to provide a holistic approach to healthcare in Kroger-owned retail stores. As Vice President of Pharmacy at The Kroger Co., Dr. Avery was the first female and first African American to hold this position.

She is a member of several professional, service and leadership organizations including the American Pharmacist Association, OH Diversity Council- Cincinnati Advisory Board, Jack and Jill of America, Inc.- Associate, Phi Psi Omega Chapter of Alpha Kappa Alpha Sorority, Inc., Queen City (OH) Chapter of The Links, Inc. Dr. Avery is a proud graduate of Xavier University of Louisiana's College of Pharmacy, where she obtained her Doctor of Pharmacy Degree. A graduate of the Urban League of Greater Cincinnati's African American Leadership Development Program, Cornell University Food Executive Program, Founding Member, KY/OH AMCP Affiliate, and past member of The Children's Home of Cincinnati Young Professional Board, 2015 Most Influential Woman in OH Award, 2016 IMS Bernie Greenberg Award, 2017 Wise Woman. Dr. Avery has two children; daughter, Taylor Necole, and son, Willie "Trey" Avery, III.

Fred Butler Jr., MBA, MPH, is the Senior Advisor to the Assistant Surgeon General within the Office of the Surgeon General (OSG), Office of the Assistant Secretary for Health (OASH) and as Senior Advisor for Integration and Quality within the Center for Clinical Standards and Quality (CCSQ) - Quality Improvement and Innovation Group (QIIG) Centers for Medicare and Medicaid Services (CMS).

As Senior Advisor for Integration and Quality, Fred supports improvement across the Quality Improvement and Innovation Group.

Prior to becoming a federal servant in 1998, Fred served as Senior Research Associate on the NIH-DC initiative to Reduce Infant Mortality and Adolescent Pregnancy and served as Public Health Administration and Communications Fellow through the Association for Teachers of Preventive Medicine where he provided technical assistance in guideline development for CDC's Public Health Practice Program Office.

Fred is a proud alum of The George Washington University's Elliott School of International Affairs, School of Medicine and Health Sciences, and School of Business.

Gregory Gierer is the Senior Vice President for Policy at America's Health Insurance Plans (AHIP) where he leads policy development work on legislative and regulatory policy issues—with a primary focus on health reform implementation and private insurance market reforms. Mr. Gierer has over a decade of experience with health care policy and analysis. Prior to joining AHIP, he served as a Senior Director for Policy at the Pharmaceutical Research and Manufacturers of America (PhRMA) where he worked on developing and managing public policy issues related to comprehensive health care reform, health-system and delivery reforms, and public programs such as Medicaid and the Children's Health Insurance Program (CHIP).

He previously served as a Senior Policy Consultant at the Blue Cross and Blue Shield Association (BCBSA) and a Policy Analyst at America's Health Insurance Plans (AHIP). Mr. Gierer also worked on the legislative staff for U.S. Senator Christopher J. Dodd (D-CT) from 1997-1999 and 2001-2002. He received his Bachelor of Arts from Providence College (1995) and a master's in public policy from Georgetown University (2001).

Daniel W. Jones, M.D. is the Sanderson Chair in Obesity, Metabolic Diseases and Nutrition and Director of Clinical and Population Science in the Mississippi Center for Obesity Research at The University of Mississippi Medical Center. He also serves as Professor of Medicine and Physiology and Interim Chair of the Department of Medicine.

He has a 25 year association with The University of Mississippi serving in a number of capacities including Vice Chancellor for Health Affairs and Dean of the School of Medicine from 2003-2009 and as Chancellor of the University from 2009 until September 2015. A native Mississippian, he graduated from Mississippi College in 1971, earned his MD in 1975 at the UM Medical Center and completed his residency in internal medicine there in 1978.

Active in the American Heart Association (AHA), Jones was the 2007-2008 national president and for years has served as a national spokesperson on high blood pressure. Currently he serves as a member of the executive committee of the AHA Center for Precision Cardiovascular Medicine. He also represents the AHA on the ACC/AHA Guideline Writing Committee for the 2017 Hypertension Management Guidelines and the ACC/AHA Guideline Writing Group for the 2018 Cholesterol Management Guidelines.

Beverley H. Johnson serves as the President and CEO of the Institute for Patient and Family-Centered Care and has over 25 years of experience in organizational development and management. She has worked as a health professional providing direct care in hospitals, managing a hospital unit, and teaching. She has served as a trustee of a hospital, national health care organization, and a school board. In these trustee roles, she has chaired and served on strategic planning committees and had fiduciary responsibility for nonprofit organizations. She has provided technical assistance and consultation to over 250 hospitals across the United States and Canada.

Beverley has published widely on patient- and family-centered issues and strategies. She is the recipient of the 2011 Dorland Health People Award for leadership in the area of patient- and family-centered care, the 2008 Stanley Graven Award for outstanding contribution to the National Perinatal Association, the 2007 Stan and Mavis Graven Award for Leadership in promoting optimal environments and developmental care for high risk infants and their families, the 2007 Changemaker Award by the Board for the Center for Health Care Design, the 1992 Lloyd Bentsen Award for leadership for family-centered care, and the 1990 Humanitarian Award from Pediatric Nursing.

Dennis Wagner currently serves as Director, Quality Improvement and Innovation Group with the Centers for Medicare & Medicaid Services (CMS) and is a national and international leader in the fields of health care quality improvement, environmental protection and social marketing. He was selected to co-direct a campaign initiative for the CMS Medicare & Medicaid Innovation Group. He and his colleague focused on achieving results on the campaign's ambitious aims of a 40 percent reduction in hospital acquired conditions and a 20 percent reduction in preventable readmissions over a three year period. Previously, Wagner served as associate deputy director and acting director of the CMS Office of Clinical Standards and Quality.

Dennis attended a one-room country school in rural Montana kindergarten through eighth grade. He has a master's degree in public administration from Montana State University and joined the federal service with the U.S. Environmental Protection Agency as a Presidential Management Intern in 1986.

Dennis was a Council for Excellence in Government Fellow from 1991-1992. Dennis and HRSA colleagues were recipients of *Government Executive* magazine's prestigious Business Solutions in the Public Interest award in 2000. Dennis and two colleagues were recently honored a Federal Employees of the Year in receiving the prestigious Service to America Medal for Social Services (SAMMIEs) given by the Partnership for Public Service.