Blueprint for Action: Visioning Summit on the Future of the Workforce in Pediatrics

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abstract

The Federation of Pediatric Organizations engaged members of the pediatric community in an 18-month process to envision the future of the workforce in pediatrics, culminating in a Visioning Summit on the Future of the Workforce in Pediatrics. This article documents the planning process and methods used. Four working groups were based on the 4 domains that are likely to affect the future workforce: Child Health Research and Training, Diversity and Inclusion, Gender and Generations, and Pediatric Training Along the Continuum. These groups identified the issues and trends and prioritized their recommendations. Before the summit, 5 key megatrends cutting across all domains were identified:

1. Aligning Education to the Emerging Health Needs of Children and Families
2. Promoting Future Support for Research Training and for Child Health Research
3. Striving Toward Mastery Within the Profession
4. Aligning and Optimizing Pediatric Practice in a Changing Health Care Delivery System
5. Taking Advantage of the Changing Demographics and Expertise of the Pediatric Workforce

At the Visioning Summit, we assembled members of each of the working groups, the Federation of Pediatric Organizations Board of Directors, and several invited guests to discuss the 5 megatrends and develop the vision, solutions, and actions for each megatrend. Based on this discussion, we offer 10 recommendations for the field of pediatrics and its leading organizations to consider taking action.

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The 2014 Institute of Medicine (IOM) report, *Graduate Education That Meets the Nation's Health Needs*[1] recognized that (1) the specialty makeup of the physician workforce no longer meets the health needs of the US population, (2) the ethnic and socioeconomic backgrounds of the physician workforce do not match those of the US population, and (3) there is a mismatch between physician knowledge and skills and what is required for effective practice. Consistent with gaps identified in the IOM report, elements forming the foundation of pediatric care are undergoing changes, including population demographics, health care delivery system, pediatrician demographics, and the speed with which medical advances occur.[2,3] Therefore, the field of pediatrics and its workforce must adapt to meet challenges created by such changes to optimize the health of children who will become healthy adults.

Issues and challenges that the workforce in pediatrics will face are in 4 major areas:

1. Research infrastructure, man-power, and funding.

2. Societal support structures, such as government policy, charitable foundations, and parent and grandparent advocacy.

3. Technology and electronic medical record (EMR) systems.

4. Educational system, from undergraduate medical education to graduate medical education (GME) and continuing medical education (CME), including maintenance of certification.

In their current state, the structures and systems are insufficient for what is needed in the future.

The workforce in pediatrics must provide a voice, based on science and best practice and amplified through ever-stronger partnerships with families and other friends of children. Promoting child health is a compelling story but children lack political power and voice. Although returns on investment in children are high, the time to achieving return on investment is so long that policy makers tend to ignore these long-term outcomes.[4] Our nation is shortsighted when it comes to children, as observed in IOM reports including *Children's Health, The Nation's Wealth*[5] and *The CTSA Program at NIH: Opportunities for Advancing Clinical and Translational Research*.[6] An example of this shortsightedness is the relative decline in child health research funding: in 1993, child health research funding comprised 13.1% of the National Institutes of Health's (NIH) budget, but by 2005, the percentage fell to 11.3%.[7] The nation's workforce and well-being depend on the health of our children, as they become adults who contribute to the US economy. Therefore, our nation must take a long-term view in its approach to child health. In this context, the Federation of Pediatric Organizations (FOPO) pursued the development of a visioning summit to craft the optimal future of the workforce in pediatrics.

FOPO is an umbrella organization with membership from the American Academy of Pediatrics, American Board of Pediatrics, Association of Medical School Pediatric Department Chairs, Academic Pediatric Association, Association of Pediatric Program Directors, American Pediatric Society, and Society of Pediatric Research. Leaders from these organizations make up the FOPO board of directors. FOPO's purpose is to

1. Envision the future of pediatrics and child health and align activities to that vision.

2. Build strong relationships, communication, and connectivity among member organizations.

3. Position the profession for effective leadership to attain the optimal health of children.

4. Respond to critical issues affecting the health of children and the profession of pediatrics.

To better understand the challenges and changing dynamics and how pediatrics might strengthen its future impact, FOPO organized a summit to establish a vision for the future of the workforce. FOPO established a planning committee and secured expert consultation for facilitation support. The model for visioning and scenario planning was drawn from the pioneering work of Peter Schwartz.[8] A visioning process looks to the future over a 10- to 15-year time horizon and considers scenarios based on current trends and forces.

METHODS

Working Groups

FOPO member organizations identified 4 domains most likely to affect the future workforce. Four working groups were formed based on these domains:

1. Child Health Research and Training: This group, formed in part with a grassroots coalition concerned about the decline in the absolute number of physician scientists,[9] investigated the issues, impacts, and trends regarding creation and retention of physician scientists. Issues addressed included the training environment, funding, need for outcomes-based research, and research along the human life course (from fetal life to old age). The group identified important issues necessary to enhance the research environment for future pediatricians.

2. Diversity and Inclusion: This group assembled data regarding current diversity and cultural competency training within the profession and identified trends and forces that will affect the diversity of the future workforce and outlined critical issues to be addressed. The group also examined the readiness of pediatric training programs to prepare the future workforce for a culturally diverse population.

3. Gender and Generations: This group examined data related to gender and generational differences in the pediatric workforce, including how these differences influence part-time careers, research careers, and work-life balance and identified the most influential trends, concepts, and facts that affect this topic.[10]

4. Pediatric Training Along the Continuum: The group explored training issues along the continuum from medical school through GME programs into practice, including targeted training and tracking, earlier entry into the workforce based on ability and accomplishments, and reentry issues. They also identified unmet health needs of children, especially chronic illness, health disparities, mental health care, apportionment of care between generalists and specialists, and transition to adult providers.

A common problem statement framed the aims of the visioning process (see Supplemental Information):

"Prepare and Position the Physician Workforce in Pediatrics to Optimize the Health of Children in Light of Demographic and Systemic Change."

Megatrends

Four working groups identified a number of trends and issues that were likely to influence the future of the pediatric workforce. Through surveys of working groups, the planning committee, and FOPO board of directors, these trends were ranked by degree of impact on the future and degree of likelihood they would actually occur.[2,3,8,11] As a result of this process, 5 megatrends emerged. Megatrends are long-term changes that affect governments, societies, economies, or systems permanently over a long period of time.

1. Aligning Education to the Emerging Health Needs of Children and Families

2. Promoting Future Support for Research Training and for Child Health Research

3. Striving Toward Mastery Within the Profession

4. Aligning and Optimizing Pediatric Practice in a Changing Health Care Delivery System

5. Taking Advantage of the Changing Demographics and Expertise of the Pediatric Workforce

Visioning Summit

The summit was held in September 2013. Participants examined megatrends and working group priorities through a series of planning exercises designed to parallel the evidence-based model for large system and organizational change developed by John Kotter.[12] Each of the teams was assigned a megatrend and worked through a series of planning exercises listed below:

1. Developing a sense of urgency for the megatrend and strong case for change and as it pertains to the problem statement, "Prepare and Position the Physician Workforce in Pediatrics to Optimize the Health of Children in Light of Demographic and Systemic Change."

2. Envisioning the desired future and outlining changes necessary to strengthen and align the profession within the context of broader societal changes.

3. Assessing readiness to change and listing enabling and restraining factors likely to influence the success of any change effort within that megatrend.

4. Articulating goals or objectives that will help pediatricians address the issues affecting practice, education, and research.

5. Assessing alignment of vision and objectives with the problem statement.

After the second planning exercise, chairs of the working groups presented their top findings and incorporated them into the developing megatrend vision statements. The following are the prioritized findings of the groups.

Child Health Research and Training

- Address the decline in child health research funding
- Realign funding streams for research in a new academic medical center model
- Prioritize child health research on children's health, rather than disease
- Enhance research training to prioritize life course research (the study of the biologic, sociodemographic, and developmental factors that influence disease etiology, progression, and outcomes)
- Restructure the training of pediatric physician scientists

Diversity and Inclusion

- Strive to achieve more diversity in the pediatrician workforce to more closely match the ethnic diversity of the population
- Align academic pediatric departments to address the population's needs
- Develop the next generation of leaders and incorporate more diverse individuals into leadership roles
- Address language barriers

Gender and Generations

- Acknowledge the impact that the increasing proportion of women has on the field of pediatrics
- Incorporate work hours and lifestyle preferences of women and younger generations in the workplace
- Be aware of preferences and specific needs of each generation within the multigenerational workplace
- Embrace social media and technology and their impact on work and lifestyle

Pediatric Training Along the Continuum

- Pursue competency-based education along the continuum
- Set a goal to provide meaningful continuous professional development (CPD) educational activities, instead of the current CME activities, linked with maintenance of certification that promotes improved child health outcomes
- Create a model of funding for education and training that follows the trainee, not the institution
- Develop best educational and training practices in collaboration with IOM

RESULTS

During the summit, teams assigned to each megatrend developed descriptions of the preferred vision based on the megatrend, articulated the solutions that would be needed to achieve the vision, and proposed actions as next steps. The following are the visions, solutions, and actions for each of 5 megatrends and the hoped-for results.

Vision 1: Education is Aligned With the Emerging Health Needs of Children and Families

Education along the continuum is aligned with the emerging health needs of children and families in 2025 and beyond. Pediatrics has embraced and integrated critical elements of the Centers for Disease Control and Prevention model of care into training experiences: genomics, health science, personal choice, and the environment. Pediatrics has created a flexible educational model across the continuum of education to accommodate a diversity of career paths, backgrounds, and talents. Pediatric residencies offer specific tracks that enable trainees to pursue a variety of clinical, community-based, public health, physician-scientist, and policy careers. Education and training programs are aligned with the diversity of the population served by increasing the diversity of the pediatric workforce and its cultural competence. Training programs ensure that trainees are well versed in dynamics of leadership and effective collaboration on teams. Fellowship training provides a foundation in research methodologies and prioritizes care of children with chronic conditions and mental health problems. The entire educational enterprise is competency-based, culturally competent, and supports leadership and advocacy development of its trainees.

Solutions

1. Build competency-based career pathways that span the continuum from medical school to pediatric practice, with reentry opportunities in practice for those who have been inactive clinically. Medical school admission criteria need to consider increasing medical student diversity and requiring fluency in a second language, such as Spanish, to prepare physicians to meet the communication needs of a diverse patient population.

Medical school curricula need to be expanded to address biological and social determinants of health, population health, and environmental health. These curricular changes must be supported by rigorous educational research, increased funding in support of physician scientists, earlier clinical experiences, reentry programs, novel funding mechanisms, and program evaluation.

2. Integrate teamwork and leadership training throughout the educational continuum. Curricular improvements focus on teamwork, leadership skills, cultural competency, lifelong learning, work-life balance, and flexible approaches. Specific curricular elements promote the development of knowledge and skills to provide care to children with mental health conditions, technology-dependency, and chronic conditions in a bona fide medical home.

Proposed Actions

- Work across FOPO member organizations to develop and share tools and best educational practices based on rigorous research
- Expand cultural competency training to all trainees and faculty
- Work across FOPO member organizations to increase the proportion of underrepresented minority trainees and faculty within departments
- Develop a competency-based leadership curriculum and a collaborative pediatric leadership institute
- Partner with government agencies and other organizations to fulfill this vision
- Identify innovative funding mechanisms

Vision 2: Pediatrics Has Addressed the Uncertain Future of Support for Training and Research

The United States embraces the philosophy that children are our greatest assets and prioritizes their health and healthy development as fundamental building blocks of the country's health and productivity. Pediatrics has developed a comprehensive research agenda that includes both biological and social determinants of health and has advanced the support for child health research and training because of the belief that life course research has the highest return on investment. Prevention produces healthy and productive adults, reduces the lifelong burden of chronic diseases, and minimizes the financial cost to individuals and society. Programs and funding sources have been directed to support a diverse workforce to meet the evolving needs of children. Child health researchers are collaborative partners on multidisciplinary teams. A new academic health center model promotes child health research and builds a strong pipeline of child health researchers. A unified, organized, professional, and societal call to action has led to a coherent model for funding medical education and research. Medical education and research have demonstrated their cost-effectiveness and have delivered strong value. Innovative and creative funding models exist to promote best practices for education and research.

Solutions

1. Create a national child health research foundation similar to the Bill and Melinda Gates Foundation that would be sufficiently well financed to influence the agenda for advancing child health through research.

2. Develop a nonprofit organization that would be the national advocacy organization for children and child health similar to the American Association of Retired Persons (AARP). Its mission would be to promote child health and well-being and it would have a substantial role in influencing national policy with regard to children. Although other organizations exist that advocate for child health, this

one would be unique in that its membership would consist of parents and grandparents from the lay public.

3. Write a report on medical education and research training that focuses on best practices, gaps in education and training in research, and ways to fill those gaps. A new academic health center model would be designed specifically to promote child health research.

4. Create common data systems to support child health research and education that link to patient outcomes.

5. Increase allocation of NIH funding to promote child health research and consider ways to restructure NIH to enhance child health research funding.

Proposed Actions

- Convene a group of stakeholders to explore existing models of high-impact research foundations, such as the Bill and Melinda Gates Foundation, to establish such a national child health research foundation, engage major pediatric organizations in this effort, and identify a donor to provide the initial gift
- Assemble a coalition to develop a business plan and organizational structure for a nonprofit entity similar to AARP devoted to promoting child health
- Establish a project team and launch a national pediatric effort to understand the issues related to support for training and research, offer solutions, and implement a plan to promote child health research and training
- Form a group that will develop shared research data platforms by defining common language, sharing data, facilitating research, and tracking outcomes
- Develop new approaches to advocate more successfully for increased NIH funding for child

health research across all institutes and centers

Vision 3: We Strive Toward Mastery Within the Profession

The way we strive for mastery of both content and process incorporates new knowledge, defines new ways in which we do our work, and focuses on maximizing health outcomes. Pediatricians serve as diagnostic consultants for healthy children, lead integrated care teams for complex patients, and connect primary care with subspecialty care. Health care is delivered in teams to improve outcomes. Health care providers and community programs share care management of patients. The workforce embraces a commitment to enhance competency in the context of rapid change. Clinical information systems allow physicians to use data to make evidence-based decisions and identify progress on quality improvement programs, linked to systems that satisfy maintenance of certification and maintenance of licensure requirements. The widespread use of personal and institutional dashboards, integrated into everyday workflow, allows for reflection and facilitates the striving for mastery. The field of pediatrics has made a significant investment in dissemination and implementation science. Quality data are merged to create big data sets that allow measurement of health outcomes to eliminate socioeconomic and ethnic disparities. Core learning communities are widespread. Pediatrics has successfully integrated genomic-based personalized medicine that drives the prevention of chronic illness. Pediatricians are trained to interpret personalized data and have mastered the process of incorporating new knowledge and leading practice change. Knowledge domains are expanded into the social sciences.

Solutions

1. Replace the concept of individual CME with team-based CPD linked

to meaningful practice change and improved patient outcomes, thereby creating work environments that provide feedback with clinical metrics at the individual and group levels to standardize practice and improve quality of care.

2. Establish connections between EMR systems and relevant databases to provide enhanced measurements and high-quality data that contribute to improved health outcomes.

Proposed Actions

- Convene a group of educators and researchers to develop meaningful, valid, and reliable measures of CPD metrics linked to health outcomes and disseminate these measures as national standards for pediatrics
- Assemble a group of informatics experts and computer and software scientists to catalog relevant databases and work with existing EMR vendors to embed technology for application to clinical environments

Vision 4: Pediatric Practice Is Aligned and Optimized in a Changing Health Care Delivery System

The United States has a fully integrated health care system that is interprofessional, child-health centered, and team-based with its charge, performance, and delivery governed by health outcomes. The pediatrician's primary focus is on children who are at highest risk of disease from physical, social, emotional, economic, or mental health causes. Pediatrics has demonstrated its value through the development of outcome metrics and has embraced value-based care. Most pediatricians are employed by large, integrated systems that are characterized by transparency and accountability. Innovative approaches to job sharing and flexible practice are widespread. Nonphysician providers are spread throughout the workforce and serve key roles on

patient care teams. Teams and networks are the focus in primary care and subspecialty pediatrics and collaborate with community-based organizations: schools, social services, home health care, and care-coordination agencies. Pediatricians now assimilate and manage vast amounts of information (genetic, patient-specific, epidemiologic) that characterizes current and future health of children. Medical institutions partner with bioengineering and technology companies to enable effective home management. The patient-centered medical home serves patients wherever they are. In many cases, technology replaces face-to-face encounters with practitioners. Personal monitors capture data from patients and link that data with other agencies and databases. Accountable care reimbursement models replace fee-for-service payments.

Solutions

1. Develop training curricula that address leadership skills, interprofessional teamwork, and the ability to integrate data from many sources. Pediatricians will work in a variety of different clinical environments on multigenerational teams based on their practice and/or specialty.

2. Foster the development, integration, implementation, dissemination, and sustainment of new, interactive, integrated technology to support the EMR, electronic patient portals, and evidence-based decision support.

3. Advocate for and establish new payment models to support these changes and promote value-based patient care. These models should be developed with the perspective of patients, providers, and payers in mind.

Actions

- Bring together educational experts to develop training curricula that

teach how to assimilate and apply data from multiple sources, lead interprofessional teams, and work within micro- and macrosystems of care

- Develop joint partnerships between technology and computer companies and pediatric organizations to design and disseminate new technologies that aim to improve health outcomes

- Design, pilot, and disseminate new payment models that have value-based care as their aim

Vision 5: A Strengthened Profession of Pediatrics That Has Optimized Its Expertise, Leadership, and Diversity in a Changing Pediatric Workforce

Changes have occurred in education and training, clinical practice, research, and leadership that have resulted in the transformation of the profession of pediatrics, resulting in increasing workforce and leadership diversity and gender equity. Pediatrics is viewed by medical students as exciting and dynamic and attracts the finest individuals to the field. Pediatricians have assumed leadership roles within the health care system, lead culturally competent multidisciplinary teams, and incorporate the concepts of the medical home and quality improvement into their practices. Clinical training and practice have been reorganized and have become more flexible and innovative. Technological innovations have removed the barriers to working due to child care or elder care. Creative schedules, temporary leaves and sabbaticals, and problem-solving regarding issues of work-life balance enrich the personal and professional lives of pediatricians. Educational debt has become less burdensome through new repayment programs. Diverse career and leadership paths are encouraged and supported.

Solutions

1. Reform GME so that it emphasizes time for reflection and critical

thinking, increases time spent with patients and families, and integrates cultural competency training, quality improvement, health systems improvements, and competency-based training.

2. Reduce the cost of education and the amount of individual educational debt. This will be facilitated by reliance on the concept of value-based education, similar to value-based care.

3. Incorporate leadership skills training across the profession, with a particular concentration on improving diversity of pediatric leadership. Leadership skills will be necessary in an ever-changing health care system.

Actions

- Create a broad coalition across medical disciplines that is devoted to achieving 3 main goals:
  ○ Reform GME to deliver value-based education
  ○ Reduce debt burden of physicians
  ○ Implement effective leadership skills training

RECOMMENDATIONS

Building on the foundation of knowledge provided by the working groups and through the discussions at the summit, participants put forward the following 10 recommendations for the field of pediatrics to consider as a blueprint for action:

- Transform the structure and curricular elements of pediatrics training to address the health needs of an increasingly diverse population of children

- Prepare trainees to work as leaders of multigenerational, interprofessional teams

- Prepare members of our profession to lead change processes effectively and shape the future through a movement to enhance leadership and change management skills

- Transform CME to a CPD model
- Enhance support for child health research by increasing funding and enhancing the academic medical center environment with aligned incentives
- Create a foundation similar to the Bill and Melinda Gates Foundation to further promote child health research
- Adapt to the changing demographics of children and their families by requiring greater diversity in the workforce and equity in paths to leadership positions
- Leverage and enhance technology and the EMR to improve patient care
- Address and lower medical student debt
- Develop an AARP-like nonprofit entity to advocate for children and child health

FINAL THOUGHTS AND REFLECTIONS

The energy and enthusiasm at the summit was intense and exhilarating. The ideas brought forward were big ideas. In the past 15 years alone, the pediatric profession has been informed by and benefited from findings of the Future of Pediatric Education II Project,[13] the R[3]P study,[14] and the Vision of Pediatrics 2020 report.[2,3] We must contemplate how to go forward, prioritize which ideas and initiatives are the ones to address, and determine which organization should lead these efforts. We must find a way to advance beyond the identification and presentation of big ideas and solutions and develop a renewed dedication and commitment to work collaboratively to translate these ideas into positive movement. The medical profession as a whole is in a time of great change and opportunity. At the beginning of the summit, it was emphasized that building a highly effective guiding coalition may be the most important factor to achieve

the future visions. The member organizations of FOPO could constitute that coalition and provide guidance, leadership, and joint action to accomplish powerful and necessary transformational change. As individual pediatricians, and leaders, we must engage. We must help each other, our children, and society by bringing our passion, dedication, and commitment to work together. Maintaining the status quo is not an option.

ABBREVIATIONS

AARP: American Association of Retired Persons
CME: continuing medical education
CPD: continuous professional development
EMR: electronic medical record
FOPO: Federation of Pediatric Organizations
IOM: Institute of Medicine
NIH: National Institutes of Health

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