

Letter from the Director

RGC Turns 15

Maturity is a high price to pay for growing up – том stoppard

When Larry Green, Lisa Klein, and Ed Fryer opened the Robert Graham Center in the basement of a Massachusetts Avenue rowhouse in the summer of 1999, they could scarcely have imagined their legacy in this, the Center's 15th year of operations.

Far from the *liebsraum* that greeted me at Graham Center meetings when I joined our team of five in 2005, I was challenged to find a seat at the table for a recent weekly research meeting, where 15 team members, two Robert L. Phillips Policy Fellows, our Larry A. Green Visiting Scholar, and two of a regular parade of visiting collaborators were already present or on the PolyCom. Competition for seats included talented new team members like Mark Carrozza, Jené Grandmont, and Michael Topmiller, who joined our Geospatial Team via the AAFP's integration of the Robert Graham Center brainchild, HealthLandscape, early in 2014. It also results from the welcome addition of Medical Director Kathleen Klink, MD, from her post as director of HRSA's Division of Medicine and Dentistry, before which she was a family medicine department chair, Hillary Clinton staffer, and Robert Wood Johnson Policy fellow. Another seat was occupied by our first senior scholar since year one of Graham Center operations, when the Center's namesake, Robert Graham graced RGC with his presence. Douglas Kamerow, MD, MPH, brings welcome past experience as assistant surgeon general, associate editor of the global medical journal, *The BMJ*, chief scientist at RTI International, and 20 years of service in the U.S. Public Health Service. Finally, accomplished new additions Anuradha Jetty, epidemiologist and practicing naturopath, Analyst Peter Wingrove, and Geographer Elena Cohen filled seats left open by Graham Center staff members who have moved on to educational and international opportunities.

Fifteen years has not only brought growth of staff, but also maturation—of portfolios, ideas, and impact. Efforts led by Stephen Petterson, PhD, and others at RGC to explore the social accountability of medical education have blossomed, and have resulted in multiple publications in the past 15 months in journals such as *JAMA* and *Academic Medicine*. Efforts have also resulted in a growing number of online data tools to explore graduate medical education (GME) service areas, costs and outcomes, additional work in regard to physician assistant educational outcomes and debt, and the two national Graduate Medical Education Summits on Capitol Hill by inspired collaborators. The UDS Mapper project, led by Jennifer Rankin, MS, MPH, PhD, enters its fifth year with incredible momentum and impact on the growing primary care safety net, as it seeks to accommodate an aging, insured population. We find ourselves asked by state and federal partners to expand, drill down, and even repeat health workforce analyses, and by the American Medical Association (AMA) to transform eight years of work to build online health workforce data platforms into the AMA Health Workforce Mapper, led by Sean Finnegan, which saw 1 million hits in its first three months.

Ideas seeded—sometimes for years—are finding purchase, sometimes with the help of energetic partners in a growing primary care policy research community. With the help of Oregon's OCHIN and the funding of the Patient Centered Outcomes Research Institute, we're driving the addition of social determinants data into a national research data repository to enhance patient-centered research, as well as into electronic health records, to begin testing *Community Vital Signs* in clinical care. Similarly, a partnership with the University of Colorado and its newly birthed Farley Center for Policy Research are giving wings in the form of multiple publications, presentations, and policy briefs to a near decade-old endeavor to inform Behavioral Health-Primary Care Integration. Finally, our six-year-old partnership with the American Board of Family Medicine (ABFM) and its growing research team is increasingly productive. It is poised to release groundbreaking work that explores the effects of comprehensiveness in primary care on costs and outcomes, and the effect of training sites on costs of care. It will also develop new tools for population health assessment in primary care practice.

ROBERT GRAHAM CENTER | 2 | ANNUAL REPORT

Fifteen years in, opportunities to share our work outside of a maturing Center continue to expand. The Center hosted five Primary Care Forums on Capitol Hill, a national Summit on Telehealth in Primary Care, and three *Embassy Series* events jointly hosted with the ABFM in 2014. The latter continued the legacy of the Graham Center's 2011 I LIVE PC conference, which gathered policymakers, academics, and advocates in the lovely Australian, Dutch, and Danish embassies to hear panel presentations on international lessons and best practices in primary care of relevance to U.S. policy. The Center carried the findings of its primary care policy research far and wide, with presentations invited or accepted at more than 15 national and international conferences—including more than 15 research presentations at the North American Primary Care Research Group Annual Conference in New York alone, participation in a National Summit on Graduate Medical Education Policy and Veteran's Administration Summit on Workforce, and four Plenary talks—including the keynote presentation opening the Royal College of Australian General Practitioners' Annual Meeting in Adelaide.

It is only fitting that Ed Fryer, one of the aforementioned team members who opened the Graham Center's doors in 1999 and set it on its path to productivity, was honored with the Maurice Wood Award for Lifetime Contribution to Primary Care Research at the November NAPCRG meeting. We can ourselves only begin to imagine what might be accomplished in the next 15 years, as we try to honor their legacy and continue to grow (up, if not out).



Primary Care Economic Portfolio

The Robert Graham Center continued work under the Primary Care Economic Portfolio in the past year. The Portfolio yielded a number of final research products in support of AAFP and other primary care interests. The recently published care management fees document presents the results of a systematic review of the published literature on services covered by care management fees in documented blended payment models and their associated per member, per month fee. This document was released as supporting evidence for the AAFP's new policy on care management fees.

The Robert Graham Center is also working with the AAFP staff on projects that deal with physician payment issues. In particular, the March 2015 Primary Care Forum titled *Thinking Differently about Payment for Primary Care: Considering Alternative Payments Promoting Value, Complexity and Comprehensiveness* presented research conducted by David Katerndahl, MD, that compares the complexity of ambulatory care visits across various practice specialties. Additionally, Robert Graham Center staff members are working with the AAFP staff to oversee a grant to Social Scientific Systems and the Urban Institute aimed at exploring a new set of separate evaluation and management codes for outpatient primary care.

Collaboration with outside partners including other research groups, practice-based research networks, state and local agencies, and university departments continues to be essential. The Center is working with George Washington University, Atlas Research, and many others to submit joint applications for external funding. The Center staff will continue to pursue research that provides new evidence on the costs of primary care practice transformation, the economic impact of primary care, and new methods to pay for primary care functions.



Geospatial Portfolio

Three key activities supported the Geospatial Portfolio in 2014, including a contract with the AMA, the purchase of HealthLandscape LLC, and the expansion of the UDS Mapper's functionality and number of users.

The AMA contract has two parts. The first is to develop static maps to show physician practice locations along with their relationships to other physicians and to nonphysician providers to be used by the AMA's Scope of Practice Partnership for advocacy purposes. The second part is to develop the Health Workforce Mapper to show the same things in a dynamic, online mapping tool. This tool is currently available to a limited audience as determined by the AMA. After a successful showing to a large audience at the AMA's Roundtable Meeting, we are hopeful that it will open the tool to the public. As a result of that demonstration, the AMA has already asked to add specialties to the Health Workforce Mapper. This contract allowed us to hire another full-time geographer.

The three-member HealthLandscape team became part of the AAFP this year, which allows the Graham Center to incorporate its work into larger team activities through regular meetings and communication. While HealthLandscape continues to work most closely with the geospatial team, we look forward to the stimulating future research possibilities across the entire Graham Center.

Growth of the UDS Mapper is evident through several key measures, including presentations at 13 meetings, 29 regularly scheduled webinars, and more than 3,000 new registrations since Oct. 1, 2013. Development products include the incorporation of more UDS data so that users can find data about grantees related to quality, staffing, and patient characteristics. In an inaugural foray into a different programming language that is compatible with smartphones and tablets, the Graham Center launched a limited, mobile version UDS Mapper that will work on these devices, which makes the Mapper more convenient for field research, and enhances communication and mobility for the tool.



Graham Center 2014 Annual Report - GME

A key aspect to assure the public has access to primary care services is to train a highly qualified health workforce. Targeted high-quality primary care graduate medical education (GME) resonates and dovetails with the themes of the Robert Graham Center and is central to the Center's mission to improve individual and population health by enhancing the delivery of primary care.

Physicians who are trained in environments committed to high-quality, effective patient-centered care acquire the needed and appropriate competencies to lead change in evolving care settings. Primary care physicians are in demand in remote and urban safety net settings. Two Graham Center publications emphasize the importance of physician training on resultant practice patterns. *Do Residents Who Train in Safety Net Settings Return for Practice?* examines the relationship between training during residency in a federally qualified health center (FQHC), rural health clinic (RHC), or critical access hospitals (CAH), and the subsequent practice in these settings. The study establishes a correlation between training in underserved environments and returning to practice in them. *Projected Impact of the Primary Care Residency Expansion Program Using Historical Trends in Graduate Placement* examines the Primary Care Residency Expansion (PCRE) program created by the Health Resources and Services Administration in 2010 to help address the shortage of primary care physicians. The analysis applies historical graduate placement trends, and projects a potential impact of more than 600 new physicians working in primary care as a result of the funding, with a potential higher proportion than traditionally funded GME graduates who practice in underserved settings.

These Graham Center studies provide evidence to support a number of GME stakeholders including MedPAC, COGME, and the 2014 Institute of Medicine report, *Graduate Medical Education That Meets the Nation's Health Need*. The latter called for targeted GME funding that creates a workforce to address certain shortfalls in the current system: inadequate primary care and uneven distribution of physicians to high-need areas.



Publications in 2013-2014

The Robert Graham Center remains a leader in workforce analysis and application development intended to reveal developments in the primary care workforce, the variations in primary care workforce, issues surrounding the scope of primary care practice, health care provider distribution and practice patterns, disparities and health care access, and the impact of health systems on the practice environment. Examples of published work during the past year include:

Primary Care Workforce Development

Projected Impact of the Primary Care Residency Expansion Program using Historical Trends in Graduate Placement The Primary Care Residency Expansion (PCRE) program was created by the Health Resources and Services Administration in 2010 to help address the shortage of primary care physicians. If historical graduate placement trends for funded programs remain stable, the PCRE program would have a potential impact of more than 600 new physicians working in primary care. Am Fam Phys. 2014 Apr; 89(7):518.

Do Professional Development Programs for Maintenance of Certification (MOC) Affect Quality of Patient Care?

The objective of this study was to examine the relationship between physicians' completion of American Board of Family Medicine (ABFM) Maintenance of Certification (MOC) modules and the quality of medical care delivered. Physicians from the Electronic National Quality Improvement and Research Network (eNQUIRENet) were enrolled. Data from their electronic health records were compared before and after they completed one or more MOC modules for family physicians (Self-Assessment Module [Part II MOC] and Performance in



Practice Module [Part IV MOC]; SAM/PPM). Process data and other quantitative clinical measures for all adult patients with a diagnosis of type 2 diabetes were gathered from each study physician. General linear mixed effects models were used to analyze data before and after the MOC modules, adjusting for clustering of patients within physicians. Physicians participating in SAM/PPM activities demonstrated greater improvements in time, in 11 of 24 measures in process and intermediate outcome measures related to type 2 diabetes care compared with non-SAM/PPM participants. All groups demonstrated improvements in time. Participation in SAM/ PPM activities is associated with greater improvements in care, but the association between activity undertaken and specific improvements is difficult to demonstrate. Galliher J, Manning B, Petterson S, Dickinson LM, Brandt E, Staton E, Phillips R, Pace W. J Am Board Fam Med. 2014;27:19-25.

The Impact of Debt Load on Physician Assistants: Project Report: Executive Summary

This study analyzed the results of a series of focus group discussions with second-year PA students and the 2011 American Academy of Physician Assistants (AAPA)-PAEA Graduating Student Survey on career choices, educational debt, and demographic characteristics of PA students. Funded by the Physician Assistant Education Association. Our findings suggest that the PA education community has ample opportunities to influence PA students' decisions because the majority of PA students are undecided regarding specialty choice when they matriculate to a PA program. The PA education community should consider how to exploit the many policy and curricular opportunities to influence PA student practice decisions, as well as how to increase data collection efforts to document career interests and outcomes. Robert Graham Center. 2014. www.graham-center.org/online/etc/medialib/graham/ documents/publications/debt-physician-assistants.Par.0001.File. dat/impact-debt-physician-assistants.pdf.

Spending Patterns in Region of Residency Training and Subsequent Expenditures for Care Provided by Practicing Physicians for Medicare Beneficiaries

Graduate medical education training may imprint young physicians with skills and experience, but few studies have evaluated this imprinting on physician spending patterns. This study examined the relationship between spending patterns in the region of a physician's graduate medical education training and subsequent mean Medicare spending per beneficiary. The design, setting, and participant examination consisted of secondary multilevel multivariable analysis of 2011 Medicare claims data (Part A hospital and Part B physician) for a random, nationally representative sample of family medicine and internal medicine physicians who completed residency between 1992 and 2010 with a Medicare patient panel of 40 or more (2,851 physicians provide care to 491,948 Medicare beneficiaries). Locations of practice and residency training were matched with Dartmouth Atlas Hospital Referral Region (HRR) files. Training and practice HRRs were categorized into low-, average-, and high-spending groups, with approximately equal distribution of beneficiary numbers. There were 674 physicians in low-spending training and low-spending practice HRRs, 180 in average-spending training/low-spending practice, 178 in high-spending training/low-spending practice, 253 in low-spending training/average-spending practice, 417 in average-spending training/average-spending practice, 210 in high-spending training/average-spending practice, 97 in low-spending training/high-spending practice, 275 in averagespending training/high-spending practice, and 567 in highspending training/high-spending practice. The results indicate that physicians who practice and who trained in high-spending regions had a mean spend per beneficiary per year that was \$1,926 higher (95 percent CI, \$889-\$2,963) than those trained in low-spending regions. Practices in average-spending HRRs had mean spends of \$897 higher (95 percent CI, \$71-\$1,723) for



physicians who trained in high-versus low-spending regions. Practices in low-spending HRRs had insignificant differences across HRR training levels (\$533; 95 percent CI, -\$46 to \$1,112). After controls for patient, community, and physician characteristics, there was a 7 percent difference (95 percent CI, 2-12 percent) in patient expenditures between low- and high-spending training HRRs. Across all practice HRRs, this corresponded to an estimates \$522 difference (95 percent Cl, \$146-\$919) between low- and high-spending training regions. For physicians who have practiced between one and seven years, there was a 29 percent difference (\$2,434; 95 percent CI, \$1,004-\$4,111) in spending between those who trained in low-and high-spending regions; however, after 16 to 19 years, there was no significant difference. The study concluded that practicing physicians for Medicare beneficiaries' subsequent expenditures were indeed associated with the spending patterns of the HRRs where the general internists and family physicians residency programs were located (with training completed between 1992 and 2010). The relevance of this study shows that interventions during residency training may have the potential to help control future health care spending. Chen, C, Petterson, S, Phillips, R, Basemore, A, Mullan, F.

Scope of Practice

One in Fifteen Family Physicians Principally Provide Emergency or Urgent Care

A small but nontrivial proportion of U.S. family physicians spend most of their time providing emergency or urgent care. With considerable attention focused on expanding access to primary care, it is important to account for providers principally working outside of traditional primary care. Petterson S, Peterson L, Phillips R, Moore M, Finnegan S, Coffman M, Bazemore A. One in Fifteen Family Physicians Principally Provide Emergency or Urgent Care. J Am Board Fam Med. 2014;27(4):447-448.

Trends in Family Physicians Performing Deliveries, 2003–2010

This observational study examined the proportion of family physicians continuing to perform obstetrical deliveries from 2003 to 2010. Data were collected annually from the same census questionnaire completed by family physicians who passed their recertification examination. Aggregated responses began in 2003 when data first became available electronically and ended in 2009 before recertification changes. Using crosssectional design and logistic regression analysis, we examined associations between physician demographic or geographic factors and performance of deliveries. The sample consisted of 49,267 family physicians between 2003 and 2009, including 7,456 in 2009. The proportion performing any deliveries declined by 40.6 percent, from 17.0 percent in 2003 to 10.1 percent in 2009. Most recently, 5.5 percent of all family physicians delivered 1–25 babies per year, whereas 2.8 percent delivered 26–50, and 1.9 percent delivered \geq 51. Those who performed deliveries were most likely to be junior members of a partnership or group practice, and provided prenatal and newborn care. Deliveries were more common in nonmetropolitan areas, where other obstetric practitioners were unavailable. The proportion of family physicians performing deliveries continues to decline with most delivering 25 or fewer babies per year. This change will require more effort by obstetrician-gynecologists and midwives in being primary birth attendants. Rayburn W, Petterson S, Phillips R. Birth. 2014; 41(1):26-32.

Health Care Provider Distribution and Practice Patterns Proximity of Providers: Colocating Behavioral Health and Primary

Care and the Prospects for an Integrated Workforce

Integrated behavioral health and primary care is emerging as a superior means by which to address the needs of the whole person, but we know neither the extent nor the distribution of integration. Using the Centers for Medicare and Medicaid Services' National Plan and Provider Enumeration System (NPPES) Downloadable File, this study reports where colocation exists for (a) primary care providers and any behavioral health provider and (b) primary care providers and psychologists specifically. The NPPES database offers new insights into where opportunities are limited for integration due to workforce shortages or nonproximity of providers and where possibilities exist for colocation, a prerequisite for integration. Miller B, Petterson B, Burke B, Phillips R, Green L. *Am Psychol.* 2014 May-Jun; 69(4):443-51.

Do Residents who Train in Safety Net Settings Return for Practice?

To examine the relationship between training during residency in a federally qualified health center (FQHC), rural health clinic (RHC), or critical access hospital (CAH) and subsequent practice in these settings. The authors identified residents who trained in safety net settings from 2001 to 2005 and in 2009 using 100 percent Medicare Part B claims files for FQHCs, RHCs, and CAHs and 2011 American Medical Association Masterfile residency start and end date histories. They used 2009 Medicare claims data to determine the relationship between this training and subsequent practice in safety net settings. The authors identified 662 residents who had a Medicare claim filed in their name by an RHC, 975 by an FQHC, and 1,793 by a CAH from 2001 to 2005 and in 2009. By 2009, that number of residents per year had declined for RHCs and FQHCs but increased substantially for CAHs. The percentage of physicians practicing in a safety net setting in 2009 who had trained in a similar setting from 2001 to 2005 was 38.1 percent (205/538) for RHCs,

31.2 percent (219/703) for FQHCs, and 52.6 percent (72/137) for CAHs. Using Medicare claims data, the authors identified residents who trained in safety net settings and demonstrated that many went on to practice in these settings. They recommend that graduate medical education policy support or expand training in these settings to meet the surge in health care demand that will occur with the enactment of the Affordable Care Act insurance provision in 2014. Phillips R, Petterson S, Bazemore A. *Acad Med.* 2013 Dec; 88(12):1934-40. *Migration After Family Medicine Residency:* 56% of *Graduates Practice Within 100 Miles of Training* Using the 2009 American Medical Association Physician Masterfile, this one-pager notes that 56 percent of family

medicine residents stay within 100 miles of where they graduate from residency. Fagan EB, Finnegan S, Bazemore A, Gibbons C, Petterson S. *Am Fam Phys.* 2013; 88(10):704.

Historic Growth Rates Vary Widely Across the Primary Care Physician Disciplines

With continued population aging trends, low annual birth rate, and expected health insurance expansion, it is vital that physician workforce policy be aimed at meeting population needs to deliver optimal primary care. To better understand trends in the primary care physician workforce, we have examined the growth of family physicians, general pediatricians, and general internists providing direct patient care. Makaroff L, Green L, Petterson S, Puffer J, Phillips R, Bazemore A. *Am Fam Phys.* 2013; 88(7).

Ages of Obstetrician-Gynecologists at Retirement from Clinical Practice

Expansion of medical school enrollment in the 1960s through the 1980s has led to more baby boomer physicians reaching retirement age. The objectives were to determine the number of obstetrician-gynecologists nearing retirement age and how eventual retirement will affect the future supply of obstetriciangynecologists. This descriptive study was based on data from the most recent five years (2008-2013) of the American Medical Association Masterfile. A comparison of the data with the National Provider Identifier was used to correct for the known upward bias in retirement ages using the American Medical Association Masterfile alone. Physicians were included only if they described their active practice as being in obstetricsgynecology. The primary outcome was discrete retention curves, akin to Kaplan-Meier curves. A decline in the number of obstetrics-gynecology practitioners began at 55 years old. The approximately 11,000 obstetrician-gynecologists nearing retirement (55-67 years old) is comparable to the number in residency and within five years of residency

ROBERT GRAHAM CENTER | 9 | ANNUAL REPORT



completion. Although those physicians nearing retirement were predominantly male, no differences in retirement curves were found between senior male and female obstetriciangynecologists. The annual rate of retirement increased from 0.6 percent for 55 year olds to 4.3 percent for 65 year olds. Most retired by age 67. If all obstetrician-gynecologists retired two years later, an additional 900 health care practitioners would be available. The large cohort of obstetrician-gynecologists approaching retirement bears tracking, because the supply of young physicians is not anticipated to increase. Extending time until retirement will aid in reducing a pending shortage of obstetrician-gynecologists. Rayburn W, Petterson S, Cheng N. *Obstet Gynecol.* 2014 May; 123(Suppl 1):25S.

Disparities and Health Care Access

Ecology of Health Care: The Need to Address Low Utilization in American Indians/Alaska Natives

Disparities in health and access to health care continue to persist among the American Indian/Alaska Native population, despite federal efforts to call attention to and address these disparities. Duwe E, Petterson S, Gibbons C, Bazemore A. Am Fam Phys. 2014; 89(3):217.

Measures of Social Deprivation that Predict Health Care Access and Need Within a Rational Area of Primary Care Service Delivery

The purpose of this study was to develop a measure of social deprivation that is associated with health care access and health outcomes at a novel geographic level, primary care service area. Secondary analysis of data was used from the Dartmouth Atlas, AMA Masterfile, National Provider Identifier data, Small Area Health Insurance Estimates, American Community Survey, Area Resource File, and Behavioural Risk Factor Surveillance System. Data were aggregated to primary care service areas (PCSAs). Social deprivation variables were selected from literature review and international examples. Factor analysis was used. Correlation and multivariate analyses were conducted between index, health outcomes, and measures of health care access.

The derived index was compared with poverty as a predictor of health outcomes. Variables not available at the PCSA level were estimated at block level, and then aggregated to PCSA level. Our social deprivation index is positively associated with poor access and poor health outcomes. This pattern holds in multivariate analyses controlling for other measures of access. A multidimensional measure of deprivation is more strongly associated with health outcomes than a measure of poverty alone. This geographic index has utility for identifying areas in need of assistance and is timely for revision of 35-year-old provider shortage and geographic underservice designation criteria used to allocate federal resources. Butler D, Petterson S, Phillips R, Bazemore A. *Health Serv Res.* 2013; 48(2 Pt 1):539-59.

Health System Impact on Practice Environment Primary Care, Behavioral Health, Provider Colocation, and Rurality

The purpose of this study was to characterize the proximity of primary care and behavioral health service delivery sites in the United States and factors that influence their colocation. We geocoded the practice addresses of primary care and behavioral health providers found in the Centers for Medicare & Medicaid Services' National Plan and Provider Enumeration System Downloadable File to report where colocation is occurring throughout the country. The extent to which primary care physicians are colocated with behavioral health providers is strongly associated with rurality. Specifically, 40.2 percent of primary care physicians in urban areas are colocated with behavioral health providers compared with 22.8 percent in isolated rural areas and 26.5 percent in frontier areas. However, when controlling for number of primary care physicians at a location, the odds of colocation actually are greater for physicians in a frontier area than those in urban areas (odds ratio, 1.289; P < .01). Our findings offer new insights into the overlap of the behavioral health and primary care workforce, where opportunities for integration may be limited because of practice size and the proximity of providers, and where new possibilities for integration exist. Miller B, Petterson B, Levey S, Payne-Murphy J, Moore M, Bazemore A. J Am Board Fam Med. 2014; 27(3):367-374.

The Changing Landscape of Primary Care HPSAs and the Influence on Practice Location

Health professional shortage area (HPSA) designations were created to highlight areas of primary care shortage and direct incentives to physicians willing to practice in these areas. We demonstrate the volatility of these geographies by examining the HPSA status of primary care physicians whose practice locations were the same in 2008 and 2013. Although the change in the percentage of physicians practicing in HPSAs over this period was negligible, approximately 28 percent of the stationary physicians lost a primary care HPSA designation, whereas about 21 percent gained a designation. Finnegan S, Cheng N, Bazemore J, Petterson S. *Am Fam Phys.* 2014; 89(9).

Preferences of Sites for Office-Based Care by Reproductive-Aged Women

Reproductive-aged women constitute one-fifth of the U.S. population. The objectives of this study were to examine the physician office site sought by reproductive-aged women for their health care and to compare the reason for their visit between sites. This retrospective cohort study involved an analysis of national data from the Medical Expenditure Panel Survey between 2002 and 2011 for women between 19 and 39 years old (n=54,196). Interviews with patients and reviews of corresponding office visits (n=247,875) were undertaken. Between 2002 and 2011, the percentage of reproductiveaged women who obtained care at obstetrics-gynecology offices remained steady at 49-50 percent. Multivariate logistic regression analysis indicated that visits to obstetricsgynecology offices only were highest among poorer and healthier women at metropolitan offices. More affluent women were more likely to seek care at separate offices of an obstetrician-gynecologist and either a family physician or internist. Reasons for visits in 2011 varied between obstetriciansgynecologists and other primary care physicians, respectively: diagnosis or treatment of an illness (15.6 percent compared with 58.8 percent), a general checkup (24.3 percent compared with 25.6 percent), and pregnancy (5,210 percent compared with 3.5 percent). Approximately half of women aged 19-39 years who seek care rely partially or completely on visits to obstetrician-gynecologist offices, primarily for pregnancy care or general checkups. Rayburn W, Petterson S, Bazemore A. Obstet Gynecol. 2014; 123(Suppl 1):88S

Mental Health Treatment in the Primary Care Setting: Patterns and Pathways

The redesign of primary care through the patient-centered medical home offers an opportunity to assess the role of primary care in treating mental health relative to the rest of the health care system. Better understanding the patterns of care between primary care and mental health providers helps guide necessary policy changes. This article reports the findings from 109,593 respondents to the 2002-2009 Medical Expenditure Panel Surveys (MEPS). We examined the extent to which persons with poor mental health visited primary care providers, and distinguished among four patterns of care: (a) mental health only, (b) primary care only, (c) dual care (both mental health and

primary care) and (d) other provider combinations. Our findings indicate that poor mental health and specific mental health conditions remain prevalent in primary care. An increased focus on patient-centered care requires greater integration of primary and mental health care to reduce fragmentation of care and disparities in health outcomes. Petterson S, Miller B, Payne-Murphy J, Phillips R. *Fam Syst Health.* 2014 Jun; 32(2):157-66.

The Impact of Insurance and a Usual Source of Care on Emergency Department use in the United States

Finding a usual source of care (USC) is difficult for certain populations. This analysis determines how insurance type and having a USC affect the settings in which patients seek care. In this cross-sectional study of the 2000-2011 Medical Expenditure Panel Surveys, we assessed the percentage of low-income persons with half or more of their ambulatory visits to the emergency department (ED). Respondents were stratified based on insurance type and presence of a USC. In 2011, among Medicaid enrollees without USCs, 21.6 percent had half or more of their ambulatory visits to EDs compared to 8.1 percent for those with USCs. Among the uninsured without USCs, 24.1 percent went to an ED for half or more of their ambulatory visits compared to 8.8 percent for those with USCs in 2011. Among the privately insured without USCs, 7.8 percent went to an ED for half or more of their ambulatory visits compared to 5.0 percent for those with USCs in 2011. These differences remained in multivariate analyses. Those who lack USCs, particularly the uninsured and Medicaid enrollees, are more likely to rely on EDs. Liaw W, Petterson S, Rabin D, Bazemore A. Int J Family Medicine. 2014.

Which Family Physicians Work Routinely with Nurse Practitioners, Physician Assistants or Certified Nurse Midwives

Facing rising numbers of insured individuals as a result of implementation of the Affordable Care Act, policy makers are interested in building teams of providers that can accommodate a growing demand for primary care services. Nurse Practitioners (NPs), Physician Assistants (PAs), and Certified Nurse Midwives (CNMs) already augment the physician workforce, particularly in rural areas. Our objective was to determine what physician and area-level characteristics were associated with working with NPs, Pas, or CNMs. The sample consisted of a convenience sample of physicians through the American Board of Family Medicine (ABFM) website in the fall of 2011. We linked these data to demographic and practice information collected by the ABFM and with provider information supplied from the National Provider Identifier file aggregated at the Primary Care Service Area

level. Hierarchical logistic regression models were used to determine variables associated with working with NPs, PAs, or CNMs. Of the 3,855 family physicians in our sample, 60 percent reported routinely working with NPs, PAs, or CNMs. In regression analysis, characteristics positively associated with working with NPs, PAs, or CNMs were providing gynecological care (odds ratio = 1.23 [95 percent confidence interval, 1.06-1.42]), multispecialty group practice (OR = 1.72 [1.36-2.18]), any rural setting, and higher availability of PAs (OR = 1.40 [1.10-1.79]). Restrictive NP scope of practice laws failed to reach significance (OR = 0.86 [0.71-1.05]). This study suggests that the number of family physicians routinely working with NPs, PAs, and CNMs continues to increase, which may allow for improved access to health care, particularly in rural areas. Peterson L, Blackburn B, Petterson S, Puffer J, Bazemore A, Phillips R. J Rural Health. 2014; 30(3):227-34.

Toward Graduate Medical Education (GME) Accountability: Measuring the Outcomes of GME Institutions

Graduate medical education (GME) plays a key role in the U.S. health care workforce, defining its overall size and specialty distribution and influencing physician practice locations. Medicare provides nearly \$10 billion annually to support GME and faces growing policy maker interest in creating accountability measures. The purpose of this study was to develop and test candidate GME outcome measures related to physician workforce. We performed a secondary analysis of data from the American Medical Association Physician Masterfile, National Provider Identifier file, Medicare claims, and National Health Service Corps, measuring the number and percentage of graduates from 2006 to 2008 practicing in highneed specialties and underserved areas aggregated by their U.S. GME program. Average overall primary care production rate was 25.2 percent for the study period, although this is an overestimate because hospitalists could not be excluded. Of the 759 sponsoring institutions, 158 produced no primary care graduates, and 184 produced more than 80 percent. An average of 37.9 percent of internal medicine residents were retained in primary care, including hospitalists. Mean general surgery retention was 38.4 percent. Overall, 4.8 percent of graduates practiced in rural areas; 198 institutions produced no rural physicians, and 283 institutions produced no Federally Qualified Health Center or Rural Health Clinic physicians. GME outcomes are measurable for most institutions and training sites. Specialty and geographic locations vary significantly. These findings can inform educators and policy makers during a period of increased calls to align the GME system with national health needs. Chen C, Petterson S, Phillips R, Mullan F, Bazemore A, O'Donnell S. Acad Med. 2013 Sep; 88(9):1267-80.



Fellows

Robert L. Phillips Health Policy Fellowship

Funded by a HRSA Title VII Grant, the Robert Graham Center continues its policy fellowship partnership with Georgetown University.



In 2013-2014, **John Parks, MD**, was the Robert L. Phillips Health Policy Fellow at the Graham Center. Dr. Parks' work focused on the global status of family medicine. He and his team undertook a robust data collection effort to better understand family medicine in every country in the world. The data collected is the source of the Global Health Mapper that can be found on the Graham Center website.

John Parks, MD



Tracey Henry, MD Melanie Raffoul, MD

In the fall of 2014, **Tracey Henry, MD**, and **Melanie Raffoul, MD**, began their fellowships at the Graham Center. Dr. Henry's research interests include health disparities, primary care and mental health integration, and evaluating the primary care workforce pipeline. Dr. Raffoul's research focus is on social determinants of health, primary care scope of practice, and GME funding and accountability.

Scholars

During the past 15 months, the Graham Center has hosted the following Larry A. Green Visiting Scholars:

Rossan Chen, MD, MSc, Family and Community Medicine, University of California at San Francisco

Amanda Brownlow, MD, Australia Primary Health Care Research Institute (APHCRI) Scholar

B. Tate Hinkle, MD, University of Alabama School of Medicine, Birmingham, AL

Jacob "Gus" Crothers, MD, Resident, Tufts University Family Medicine Residency at Cambridge Health Alliance, Malden, MA Mark Lin, MD, Resident Physician, Family and Community Medicine, University of California at San Francisco Noah Kojima, Medical Student, University of California, Davis

Joshua Freeman, MD, Alice M. Patterson, MD, and Harold L. Patterson, MD, Professor and Chair, Department of Family Medicine, University of Kansas School of Medicine, Kansas City, KS

Phillip M. Eskew, DO, JD, MBA, Family Medicine Resident - OGME Danville Regional Medical Center, Danville, VA

Susan Lin, DrPH, Assistant Professor of Medicine (CFCM) at Columbia University Medical Center, New York, NY

Elizabeth (Liz) Brown, MD, Robert Wood Johnson Clinical Scholar, University of Pennsylvania, Philadelphia, PA

Gerald Banks, MD, Rutgers Family Medicine Residency at Capital Health July 2012 – Current, Capital Health Regional Medical Center – Trenton, NJ

Matthew McGrail, MD, Senior Research Director, Monash University and Australia Primary Health Care Research Institute

Additionally, the Graham Center hosted the following scholars:

Sarah Hemeida, MD, The Eugene S. Farley, Jr. Health Policy Center at the University of Colorado Denver School of Medicine Matthew L. Goldman, MD, MS, Department of Psychiatry, New York Presbyterian Hospital, Columbia, New York, NY Nipun Bhandari, Cornell University, New York, NY

Ranyah Almardawi, MPH, Milken Institute School of Public Health at The George Washington University



Primary Care Forums

Building a Primary Care Workforce for Rural America

Graduate medical education (GME) plays a key role in the U.S. health care workforce, defining overall size and specialty distribution, and profoundly influencing practice locations. Approximately 20 percent of the U.S. population lives in rural areas. Despite \$10 billion in annual Medicare funding support, only 5 percent of graduates from the nation's residency (GME) training system are entering rural areas on the eve of national insurance expansion. In this forum, an expert panel reviewed what is known about the challenges facing rural access to care, and the outcomes of ongoing training experiments such as Rural Training Tracks designed to meet the demands of rural access.

Panelists:

- Ted Epperly, program director and CEO of the family medicine residency of Idaho and clinical professor of family medicine at the University of Washington School of Medicine in Seattle
- Randall Longenecker, assistant dean rural and underserved programs and professor of family medicine, Ohio University Heritage College of Osteopathic Medicine, and executive director, The RTT Collaborative
- Amy Elizondo, MPH, vice president, program services, National Rural Health Association

Moderator: Andrew Bazemore, MD, MPH, director, Robert Graham Center

Telehealth

As the U.S. population grows and ages, innovative solutions to meet the growing demands on the primary care workforce and infrastructure are needed. Telehealth—caring for patients remotely—has become a key strategy to increase access to specialty care in many rural communities. Its penetration into primary care has been slower than in many specialty settings, and little is known about best practices for telehealth in primary care and what barriers exist to spreading access to primary care through telehealth. In this forum, an expert panel with experience in frontline delivery of care through telehealth offered their insights into how telehealth can augment access to primary care for some of the most vulnerable patient populations (pregnant women, children, and veterans).

Panelists:

- Kenneth M. McConnochie, MD, MPH, director, Health-e-Access Telemedicine program, professor of pediatrics, University of Rochester
- Curtis Lowery, MD, professor and chair, Maternal-Fetal Medicine, director, ANGELS Program, University of Arkansas for Medical Sciences
- Adam Darkins, MD, MPHM, FRCS, chief consultant for Telehealth Services, US Department of Veterans Affairs

Moderator: Claire Gibbons, PhD, senior operations manager, Robert Graham Center



Thinking Differently about Payment for Primary Care: Considering Alternative Payments Promoting Value, Complexity, and Comprehensiveness

Payment for primary care in the United States has, and continues to be, dominated by a fee-for-service model built on the resource-based relative value scale that underpins the Medicare physician fee schedule. As such, most payment for primary care rewards volume rather than the value that primary care brings to the system. However, Medicare and other payers are beginning to experiment with different ways of paying for primary care, especially in the context of the patient-centered medical home. In this forum, an expert panel reviewed what is known about the challenges associated with paying appropriately for primary care, discussed how ambulatory primary care differs from other ambulatory care, and shared what is being learned from paying differently for such care.

Panelists::

- Robert Berenson, MD, institute fellow, Urban Institute
- David Katerndahl, MD, MA, department of family and community medicine, University of Texas Health Science Center, San Antonio
- Jay Crosson, PhD, senior researcher, Mathematica Policy Research

Moderator: Miranda Moore, PhD, Robert Graham Center

Disruptive Innovations in Primary Care

Primary care practices are transforming rapidly to expand access to newly insured individuals and to help achieve the nation's Triple Aim. In this moderated discussion, we heard from innovators at the forefront of radical primary care practice change. These innovators described their experiences and ideas about implementing new models of care. We discussed hybrid practice models such as One Medical and a new model of care, Direct Primary Care, where patients typically pay a monthly fee for a range of primary care services and management. Can this model and other innovations offer lower patient panel sizes, higher quality care and more time with the doctor? Can they be sustained over time? Can they be expanded to cover the majority of Americans? Forum speakers' addressed these questions.

Panelists:

- Andrew Schutzbank, MD, MPH, medical director, lora Health
- Brian Forrest, MD, founder and CEO, Access Healthcare
- Tom Lee, MD, CEO, One Medical

Moderator: Andrew Bazemore, MD, director, Robert Graham Center



From Fragmentation to Integration: A Triple Aim Imperative

Our nation's healthcare system is plagued by many problems, but principal among them is the problem of fragmentation, particularly of physical health and mental health. Fragmentation in health care is pervasive and manifests through institutionalized barriers in our financial, operational, and clinical systems. As a result, new and innovative models that integrate care are gaining attention, such as collaborative care that unites mind and body, individual and family, patients, providers, and communities. The speakers addressed why adoption and sustainability of collaborative care is not only a highly effective clinical model, but it is also fundamental to achieving the Triple Aim: improving the patient experience of care; improving the health of populations; and reducing per capita cost of health care.

Panelists:

- Benjamin Miller, PsyD, director of The Eugene S. Farley, Jr. Health Policy Center and assistant professor in the department of family medicine at the University of Colorado Denver School of Medicine
- Parinda Khatri, PhD, chief clinical officer, Cherokee Health Systems
- Susan McDaniel, PhD, ABPP, Laurie Sands, PhD, distinguished professor of psychiatry and family medicine, director of the Institute for the Family in Psychiatry, and associate chair of family medicine at the University of Rochester School of Medicine & Dentistry
- Patrick Gordon, MPA, associate vice president, Rocky Mountain Health Plans

Reactor: Bill Ritter, Jr., former Colorado governor, director for Center for the New Energy Economy, Colorado State University Moderator: Andrew Bazemore, MD, director, Robert Graham Center

Learning from International Innovations in Health Care: Australia, Denmark, and the Netherlands

Other nations that have better health outcomes and lower health care costs than the United States have also had significant health system reforms in the past decade. A major difference is that they have focused on building robust primary care. Their successes and failures in developing and spreading primary care innovations hold lessons for the United States and they have generously spent time talking about those in a series of Embassy Conversations. This briefing summarized those conversations, offered reactions from U.S. experts, and was open for audience discussion.

Panelists:

- John Wellard, counsellor, Australian National University, Embassy of Australia
- André Knottnerus, professor, Maastricht University, the Netherlands, and chairman Netherlands Scientific Council for Government Policy
- Andrew Bazemore, MD, director, the Robert Graham Center

Moderator: Larry Green, MD, professor of family medicine, Epperson-Zorn endowed chair for innovation in family medicine and primary care, University of Colorado-Denver



Staff

ANDREW BAZEMORE, DIRECTOR

Andrew Bazemore joined the Robert Graham Center in 2005, and currently serves as its Director. He oversees research and projects related to access to care for underserved populations, health workforce, spatial analysis and health, and other topics. Prior to joining the Center, he was a member of the Faculty for the University of Cincinnati's Department of Family Medicine, where he also completed his residency training and fellowship, and where he remains an Associate Professor. Andrew also serves on the faculties of the Departments of Family Medicine at Georgetown University and VCU, and in the Department of Health Policy at George Washington University School of Public Health. He practices weekly and teaches students and residents at VCU-Fairfax Family Medicine Residency program. Dr. Bazemore received his BA from Davidson College, his MD from the University of North Carolina, and his MPH from Harvard University.

MEGAN COFFMAN, HEALTH POLICY ADMINISTRATOR

Megan Coffman joined the Robert Graham Center in February 2013 as the Health Policy Administrator. Her work at the Center includes project, budget, and grant management. Prior to joining the Robert Graham Center, Megan managed projects for educational and health nonprofits. She got her start in public health as a Peace Corps volunteer in Mauritania and Mali. In 2010, Megan received her MS in Health Communication from Tufts University, and holds a BA in Political Science from Butler University.

ELENA COHEN, HEALTH GIS SPECIALIST

Elena Cohen joined the Robert Graham Center in January 2014 as the Health GIS Specialist. Her work with the Graham Center includes creating maps that display the distribution of the health care workforce throughout the United States. Prior to joining the Graham Center, she worked as an intern utilizing GIS in local and federal government. She earned a BA in Geography from Clark University.



KIM EPPERSON, OFFICE ADMINISTRATOR

Kim Epperson joined the Robert Graham Center in October 2009 as the Office Administrator. Kim is the first point of contact and handles administrative operations for the Center. Previously, Kim was an Executive Assistant to the Vice President at a national nonprofit where she was responsible for the daily operations of the department and handling of all administrative functions for the Vice President. Prior to joining the nonprofit, Kim had 16 years of service with US Airways in a variety of positions. During her career at US Airways, Kim was Lead on the Sales Cultural Assessment Team handling Rewards and Recognition for the Sales Department. She was also a member of the Minority Professional Association and the Women's Professional Group. Kim completed the Job Training Partnership Act (JTPA) Program at Forsyth Technical Community College and received a Certificate of Completion in Secretarial Science.

SEAN FINNEGAN, HEALTH GIS RESEARCH MANAGER

Sean Finnegan joined the Robert Graham Center in August of 2010. He manages a variety of the geospatial projects as well as the production of online mapping and data display tools and oversees the data management duties for the center. Sean has a strong background in geography and geospatial analysis and has previously worked for National Geographic, The Discovery Channel and Population Action International. Sean completed his master's degree at George Mason University and attended the University of Missouri, Kansas City for his undergraduate studies.

ANURADHA JETTY, RESEARCH ASSOCIATE

Anuradha Jetty joined the Robert Graham Center in July 2014 and currently serves as the Research Associate. Her work is focused on conducting secondary data analysis of large databases to assess the health care workforce, access, utilization, costs, and outcomes. Her career in public health includes designing and conducting cross-sectional studies to evaluate the Open Heart Surgery Observation Health Education program for high school students at Inova Heart and Vascular Institute and the National Longitudinal Transition Study of students with disabilities at the Department of Health Administration and Policy, George Mason University. Most recently, as the Health & Disability Fellow at the National Association of County and City Health Officials, Anuradha designed and implemented a cross-sectional study to assess the knowledge and awareness of local health departments regarding individuals with disabilities and inclusive public health programs. She received her Bachelor of Homeopathy Medicine and Surgery from Osmania University, Hyderabad, India, and her Master of Public Health (Epidemiology) from George Mason University, Fairfax, VA.

DOUGLAS KAMEROW, SENIOR SCHOLAR

Douglas Kamerow joined the Robert Graham Center in March 2014 as Senior Scholar in Residence. He also teaches medical students and family medicine residents at Georgetown University as a Professor of Clinical Family Medicine and is an Associate Editor and regular columnist for the global medical journal *The BMJ*. Previously, Doug was a Chief Scientist in health services and policy research at the nonpartisan research institute RTI International. For 20 years before that, he led a range of clinical, health policy, and research activities in the U.S. Public Health Service, retiring as an Assistant Surgeon General in 2001. Doug received his AB from Harvard College, his MD from the University of Rochester, and an MPH from Johns Hopkins University.

KATHLEEN KLINK, MEDICAL DIRECTOR

Kathleen Klink joined the Robert Graham Center in April 2014 as Medical Director, participating in research, collaborative management and dissemination functions of the Center and focusing on primary care workforce, guality and access. She represents the Center and its products with collaborators and key audiences. Prior to the Robert Graham Center, Kathleen was the Director of the Division of Medicine and Dentistry in the Bureau of Health Professions, U.S. Department of Health and Human Services. Health Resources and Services Administration. She is also the former Director of the Center for Family and Community Medicine at Columbia University and Chief of Service for Family Medicine at New York-Presbyterian Hospital and served as a Robert Wood Johnson Health Policy Fellow in the office of Senator Hillary Rodham Clinton in 2008 where she played a vital role in the U.S. Public Health Service Act, Title VII reauthorization bill, Health Professions and Primary Care Reinvestment Act. She received her MD from the University of Miami School of Medicine.

MIRANDA MOORE, ECONOMIST/HEALTH SERVICES RESEARCHER

Miranda Moore joined the Robert Graham Center in September 2012 as an Economist/Health Services Researcher. Miranda is particularly interested in family health care access and health outcomes, workforce issues, national and state health policy development, and the impact the structure of physician payment has on patient outcomes. Previously, at the U.S. Department of Labor, Employee Benefit Security Administration (EBSA), Office of Policy and Research, she worked on issues related to employer-sponsored employee benefit plans. Prior to working at EBSA, she was a Teaching Assistant at Stony Brook University, where she taught game theory. Miranda earned her economics graduate degrees, PhD in 2010 and MS in 2006, from Stony Brook University and her BBA in economics from the University of Georgia.

STEPHEN PETTERSON, RESEARCH DIRECTOR

Stephen Petterson joined the Robert Graham Center in 2005. He is currently the Research Director, both overseeing and contributing to the Center's analytical activities. Previously, as a sociologist and social statistician, he was on faculty at the University of Virginia and a researcher at the Southeastern Rural Mental Health Research Center. Stephen has taught courses in graduate and undergraduate statistics, welfare policy, problems of urban life, and sociology of work. He earned a PhD in sociology from the University of Wisconsin, and an undergraduate degree in sociology and anthropology from Haverford College.

JENNIFER RANKIN, UDS PROJECT MANAGER AND HEALTH GEOGRAPHER

Jennifer Rankin joined the Robert Graham Center in May 2010 as the Geospatial Informatics Senior Analyst. She directs all geospatial projects at the Graham Center, most notably the UDS Mapper. Her career has focused on issues related to primary care and access to care, with a special interest in the geography of access to health care. She has worked with the HRSA Maternal and Child Health Bureau, the Texas Association of Community Health Centers, and the Association of State and Territorial Health Officials. Jennifer earned her MHA from the Tulane School of Public Health and Tropical Medicine, as well as her MS in Health Information Sciences and MPH and PhD in Public Health Informatics from The University of Texas Health Science Center at Houston.

PETER WINGROVE, RESEARCH ANALYST

Peter Wingrove became a Research Analyst at the Robert Graham Center in August 2014. His work consists primarily of statistical analysis, particularly in support of Stephen Petterson and the RGC's visiting scholars. His previous experience in health policy includes completing a demographic survey of Prince William County at the Potomac Health Foundation and writing a grant that allowed for increased funding to diabetic patients at the Lloyd Moss Free Clinic in Fredericksburg. Immediately prior to joining the Graham Center, Peter conducted economic research on a Fulbright grant in Poznan, Poland. He graduated with a BS in economics summa cum laude from the University of Mary Washington.

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