Executive summary: Physician Payment and Health Care Delivery

Projections indicate that demand for physicians continues to outpace supply. By 2030, a physician shortage of 40,800-104,900 will exist, extending to primary care physicians (PCPs), non-primary care specialties and surgical specialties.

While the gender balance among physicians continues to improve, and gender diversity among medical students is now nearly balanced, the racial/ethnic makeup among physicians and trainees has remained largely disproportional and unchanged.

Currently, less than half of practicing physicians possess an ownership stake in their practices. The percentage of these physicians roughly equals the percentage of physicians who are employed. Older and male physicians are more likely to have ownership stakes in their practices.

The burnout rate among physicians has increased steadily in recent years. In 2017, more than half of physicians reported burnout, as drivers of physician satisfaction such as time spent interacting with patients are increasingly being replaced by administrative tasks.

Physician earnings stayed relatively flat in 2017; roughly 40% of physicians reported earnings that were approximately equal to the previous year, and only 31.8% reported that their earnings had increased. While specialists and subspecialists earn more than primary care physicians over the course of their careers, some evidence suggests that the gap may be narrowing.

The proposed rule for Year 2 of the Quality Payment Program contains provisions designed to encourage participation and increase flexibility in the Merit-based Incentive Payment System and Advanced Alternative Payment Models, particularly among small practices. While the majority of practices remain hesitant to accept downside risk, newly introduced payment models aim to assist practices with their transition into such arrangements.

Over 90% of hospitals report using a mix of fee-for-service (FFS) and value-based payments (VBP). Hospitals project that bundled payments will grow the fastest of all VBP models; however, less than half of hospitals anticipate the shift to value-based payment will improve their profitability.

The supplies of physician assistants and nurse practitioners continue to outpace the supply of physicians, and scope of practice laws continue to ease, allowing greater practice autonomy to non-physician providers.
Trends: Physician Work Force

Practicing Physicians by State

- Figure 1 compares the Internal Revenue Service 2017 population estimates with Kaiser Family Foundation data on the number of active allopathic (MD) and osteopathic (DO) physicians in each state in the United States as of April 2017. The total number of professionally active physicians was 923,308, consisting of 443,962 primary care physicians and 479,346 specialists. Comparatively, the highest concentration of physicians per state resident was found in the northeastern states. The highest ratio of practicing physicians to state residents was in Washington D.C., where there was one practicing physician for every 104 residents. The lowest physician to resident ratio was in Idaho, where there was one practicing physician for every 596 residents. The median for all 50 states and Washington D.C. was 388 residents for every physician.

Figure 1. State Residents per Professionally Active Physician.

- According to a report by the American Medical Association (AMA), there were 141,809 retired or inactive physicians in the United States in 2016, a 25.5% increase from the 112,964 tallied in 2012. The percentage of physicians aged 65 and older increased 2.5 percentage points over that same span, from 21.3% to 23.8% of the entire physician and medical student population. Over that same period, the percentage of physicians age 40-64 decreased by 6 percentage points, from 44.0% to 38.0% of the physician and medical student population.
In 2017, the Association of American Medical College (AAMC) projected for the third consecutive year that demand for physicians would continue to outpace supply, and that by 2030, a shortage of 40,800 to 104,900 physicians would exist. Largely, an aging population will drive the projected increased demand for physicians, and a physician shortage will likely be observed in primary care (a shortage of 7,300-43,100 physicians), non-primary care specialties (33,500-61,800) and surgical specialties (19,800 to 29,000). More than 1/3 of all currently active physicians will be age 65 or older by 2030, driving the shortage on the supply side.4

Per the AAMC’s 2016 Physician Specialty Data Report, based on 2015 data, 88.2% of active physicians’ major professional activity was patient care, 1.5% were academics, 1.5% were researchers and 8.8% self-designated their major professional activity as administration, not classified or other.

- Specialties that saw the largest percentage growth among practicing physicians from 2010 to 2015 included interventional cardiology (69.3%), vascular and interventional radiology (49.1%) critical care medicine (43.1%), and pain medicine and pain management (42.9%). Over the same period, while most specialties saw at least modest growth, nine specialties saw decreases in workforce, the largest of which were anatomic/clinical pathology (-11.3%), pulmonary disease (-9.8%), thoracic surgery (-4.2%) and general surgery (-4.0%).
- Among first year residents and fellows in Accreditation Council for Graduate Medical Education (ACGME) accredited training programs, specialties that saw the largest increases were vascular and interventional radiology (27.3%), critical care medicine (23.9%), thoracic surgery (21.8%) and plastic surgery (21.7%). Specialties that experienced decreases were geriatric medicine (-21.1%), anesthesiology (-14.4%), pulmonary disease (-12.8%), and allergy and immunology (-12.1%).5

Diversity among physicians and medical students

Figure 2 displays self-reported demographic data for all physicians and medical students based on year-end data from the AMA Masterfile from 2008-2016. The data demonstrate that since 2008, while minor increases in diversity were observed, the basic demographic characteristics of the physician and medical student population remained constant. Since 2008, the percentage of physicians and medical students identifying as White decreased 1.1 percentage points (53.3% to 52.2%), the percentage identifying as Asian/Asian American increased 3.0 percentage points (12.2% to 15.2%), the percentage identifying as Hispanic increased 0.8 percentage points (4.6% to 5.4%), and the percentage identifying as Black non-Hispanic increased 0.6 percentage points (3.6% to 4.2%). Native American physicians and medical students represented either 0.2% or 0.3% of the population in every observed year, and the percentage of those identifying their racial/ethnic information as Other increased 1.0 percentage points (1.3% to 2.3%). Race and ethnicity data remains unavailable for roughly one in five physicians and medical students. The percentage of physicians and medical students identifying as female increased from 30.2% in 2008 to 33.9% in 2016, an increase of 3.7 percentage points.6,7
Figure 3 shows racial, ethnic and gender data for all students enrolled in U.S. medical schools in 2016-2017, based on data from the AAMC. These data suggest that while gender diversity has become nearly balanced among enrolled medical students, racial and ethnic diversity has improved only slightly. The total enrolled population was 88,304 in 2016-2017.8,9

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<td>Female</td>
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Figure 3. Racial, Ethnic and Gender Characteristics of Enrolled Medical Students, 2016-2017.

In 2017, 35,969 active applicants from U.S. and international medical schools competed for 28,849 first-year (PGY-1) and 2,908 second-year (PGY-2) residency positions.

- Seniors from U.S. allopathic medical schools made up 51.5% (18,539) of all active applications and matched at a 94.3% rate.
- Due to the single accreditation system, a record number of DO candidates submitted rank order lists (3,590), and matched at an 81.7% rate for first-year residency positions.
- The numbers of U.S. citizen and non-U.S. citizen international medical students and graduates (IMGs) who submitted rank order lists declined from 2016; 254 fewer U.S. IMGs and 176 fewer non-U.S. IMGs. However, the PGY-1 match rates for both groups were higher than in recent years, as 54.8% of U.S. IMGs and 52.4% of non-U.S. IMGs matched, the highest rates since 2004 and 2005, respectively.
- The 77% overall PGY-1 match rate was the highest since 2005, and 1.4 percentage points higher than 2016. However, fewer applicants than ever (48.4%) matched to their first-choice programs.10
Trends: Practice Models

- According to the 2016 Physician Practice Benchmark Surveys conducted by the AMA, 47.1% of patient care physicians had an ownership stake in their practice in 2016. This marked the first time an AMA survey found that less than half of physicians held some ownership stake and a 3.7 percentage point decrease since 2014. The percentage of physicians working as employees in their practices increased from 41.8% in 2012 to 47.1% in 2016; the percentage of physicians with an ownership stake in their practice equaled the percentage of employed physicians. Physicians over the age of 55 (54.9%) were more likely than those under 40 (27.9%) to have an ownership stake, and male physicians (52.2%) were more likely than female physicians (36.6%) to have an ownership stake in their practice.

- Single specialty group practice models accounted for the largest share of physicians (42.8%), followed by multi-specialty groups (24.6%), solo practice (16.5%) and direct hospital employees (7.4%). Since 2012, the percentages of physicians in multi-specialty groups (+2.5 percentage points) and direct hospital employees (+1.8) have increased slightly, while declines have been observed in single specialty groups (-2.7) and solo practices (-1.9). Most of the changes in practice types occurred in the 2012-2014 period.

- Most physicians (57.8%) worked in practices with ten or fewer physicians in 2016, while the percentage of physicians working in practices with fewer than five physicians declined three percentage points from 2014 to 2016 (40.9% to 37.9%). From 2012 to 2016, the percentage of physicians working in a practice of 50 or more physicians grew from 12.2% to 13.8%.

- An article in Health Affairs examined the role of the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA) in changing the demographics of physician practices in the United States. It found that physicians are increasingly being employed by large corporations, particularly hospitals, but also by health insurers and other for-profit entities. These organizations offer predictable work hours, free physicians from the business demands of private practice, and possess negotiating leverage and protections from the increasingly complex U.S. health care system. Potential benefits of large corporations include greater access to capital to invest in population health, health information technology, quality improvement and cost reduction; reduction of unwanted variations in care delivery; alignment of incentives between hospitals and physicians; and incentives for care improvement. However, the article notes that little evidence exists about the actual performance of different practice models, and recent studies seem to indicate that larger practices charge more for care, generate higher average costs of care and do not provide improved quality, though the evidence is not definitive. The author, however, concluded that the combined effects of the financial and human cost required to transition small practices to MACRA-compliance, the complexity of MACRA itself and the financial risk associated with it will likely cause physicians to pursue employment, leading to greater corporatization in health care.

- The 2016 Practice Models Perspective Survey by Kareo and the American Academy of Private Physicians surveyed private practice providers (including MDs, DOs, PAs and NPs) across 29 specialties, practice managers and other practice owners. Of the 766 respondents, one in four (25%) had switched to or added a direct primary care, concierge or other practice model, while another 34% were considering such a change in the next three years. The primary motivators behind these changes included spending more time with patients, separating from the insurance
payer system, and improving work life balance. Of the practices that have incorporated alternative payment models, 32% have done so with less than one-quarter of their patients and 30% have all patients as members. Physicians who have incorporated private payment and membership models into their practices reported working fewer hours per week (41, compared to 47 among physicians receiving traditional FFS payment); spending fewer hours per week on administrative tasks (10.5 compared to 11.25); spending more time with each patient (79% reported having patient visits of 30 minutes or more, compared to 21% of those receiving FFS) and seeing fewer patients per day (63% see less than 15 patients per day; 65% of physicians receiving FFS saw more than 20 patients per day).13

Trends: Physician Satisfaction

- A study by the AMA, Dartmouth-Hitchcock Medical Center, Sharp End Advisory and the Australian Institute of Health Innovation at Macquarie University, explored how physicians in ambulatory practice divided their time between four activities: direct clinical face time, electronic health record (EHR) and deskwork, administrative tasks and other tasks. The study found that for every hour physicians spend providing direct clinical patient care they spend nearly two additional hours on EHR and deskwork. Additionally, physicians spent 1-2 hours per day of personal time on other computer and clerical work. The study cited meaningful time spent interacting with patients and the ability to provide high-quality care as contributors to physician satisfaction, and additional time spent on paperwork and the computer, and having less time for direct clinical patient interaction as drivers of dissatisfaction.14

- Per Medscape’s 2017 Physician Lifestyle Report, burnout rates for physicians have increased steadily since 2013, the year Medscape first posed the question. This year’s report saw more than half (51%) of physicians reporting burnout, up from 40% in 2013. Emergency physicians (59%) and Ob/Gyns (56%) reported the highest rates of burnout, while urologists, otolaryngologists and oncologists reported the highest severity of burnout. The most commonly cited reasons for burnout were too many administrative tasks (rated 5.3 on a 7-point scale), too many hours spent at work (4.7), feeling like a cog in a wheel (4.6) and EHRs (4.5). Female physicians (55%) reported burnout more frequently than males (45%), though the rates for both genders have increased since 2013, when those figures were 45% and 37%, respectively.15

- When asked about time spent with patients, 29% of physicians responding to Medscape’s 2017 Physician Compensation Report indicated spending 13-16 minutes with each patient, and 30% spent 17-24 minutes, the two most common responses; the majority of physicians (53%) spent 30-45 hours per week seeing patients.
- More than half of physicians (57%) reported spending more than 10 hours per week on administrative tasks, while nearly one in five (19%) spent 20 or more hours per week.
- When asked about the most rewarding aspects of their profession, the most common response among physicians was their relationships with their patients (33%), followed by being good at what they do (31%), making good money at a job they enjoyed (13%), knowing they were making the world a better place (12%), and pride in being a physician (7%). Almost all physicians (97%) found some level of satisfaction in their profession.
- Nearly four in five physicians (77%) would still choose medicine as a career, a significant increase over Medscape’s 2016 survey when 64% of physicians answered that they would choose medicine again. Prior to the 2017 survey, these numbers had declined...
A discussion paper published by the National Academy of Medicine indicates that physicians working at the front lines of care such as emergency physicians, family physicians, internists and neurologists face among the highest risks of burnout. After controlling for work hours and other factors, physicians in the United States are nearly twice as likely to experience burnout as workers in other professions. Additionally, studies have indicated high rates of burnout and depression among medical students, residents and nurses compared to individuals pursuing other careers. Cross-sectional studies suggest that burnout is an independent predictor of both medical error and involvement of a medical malpractice suit, and that a significant correlation exists between physicians’ satisfaction with their professions and patient satisfaction with the care they receive. Studies into the causes of burnout indicated a variety of related factors including long work hours, nights or weekends on call, time spent at home on work tasks, work-life conflict and moral distress. The authors suggested that additional research is necessary, particularly into the identification of organizational and health system factors that increase the risk for distress among health care professionals, the implications of distress and well-being among health care professionals on patient outcomes, and improving the work-lives and well-being of health care professionals.18

In 2016, the AMA sponsored the Joy in Medicine Research Summit, during which experts in burnout among health professionals assembled to develop a national agenda for research in the field. This resulted in six recommendations:

1. **Further Establish the Links Among Physician Burnout, Well-Being, and Health Care Outcomes.** More research is necessary to better understand the connections between physician burnout and quality of care, outcomes, patient experience and safety, and patient adherence.
2. **Estimate the Economic Cost of Physician Burnout.** Research exploring the relationship between burnout and behaviors affecting health care costs (e.g. referral patterns, test ordering and prescribing practices) and models estimating the costs associated with burnout may increase financial support for intervention research.
3. **Build Alliances to Address Physician Burnout.** Well-funded and structured alliances may accelerate research and the translation of findings, and facilitate benchmarking.
4. **Use Common Metrics.** The use of common assessment allows for comparisons between populations of physicians and other providers, enables meta-analysis and leads to more cost-effective research and deeply understood findings.
5. **Develop a Comprehensive Framework for Intervention With Individual and Organizational Components.** While most research to this point has focused mainly on individual interventions, the development of a framework incorporating interventions that focus on both the individual and structure/organization is essential.
6. **Share the Best Available Evidence.** The compiling and dissemination of individual and structural/organizational strategies that are unlikely to cause harm and meet established criteria is acceptable, even if evidence-based data regarding effectiveness is variable.19

**Trends: Physician Payment**

In Medscape’s 2017 Physician Compensation Report, 19,270 physicians representing more than 27 specialties responded to questions covering a variety of topics including payment, work hours
The average reported annual earnings for self-employed primary care physicians (PCPs) were $223,000, while employed primary care physicians earned $214,000 of combined salary, bonus and profit sharing. The average self-employed specialist earned $368,000, while the average for employed specialists was $287,000. Female specialists earned 37% less than males ($251,000 to $345,000) and female PCPs earned 16% less than their male counterparts ($197,000 to $229,000). Among physicians 34 and under, women earned 18% less than their male colleagues. Compared to the overall gap of 35%, this figure may suggest that the pay disparity may improve.

Among specialties, orthopedists ($489,000) plastic surgeons ($440,000) and cardiologists ($410,000) were the top three earners, while the three lowest earners were: pediatricians ($202,000), family physicians ($207,000) and endocrinologists ($220,000).

Just over one in five (22%) female physicians and 11% of male physicians reported working part-time. These figures have decreased very slightly for both gender groups over the past three Medscape surveys.

Fifty-four percent of physicians believed they were fairly compensated, a two percentage point increase over the previous survey. Emergency physicians (68%), dermatologists (65%) and psychiatrists (64%) were the most satisfied with their compensation, while nephrologists (41%), endocrinologists (44%) and urologists (47%) were the least satisfied.

According to the Physician Practice Physician Compensation Survey conducted in 2016, earnings increased for 31.8% of physicians from the previous year, while income for approximately 40% remained the same. These numbers are virtually identical to the previous year’s survey. Additionally, results indicated that the income disparity between primary care physicians (PCPs) and specialists may be narrowing. In 2016, 26.4% of family physicians reported earning between $250,001 and $350,000, an increase of over 20 percentage points from 2015, when just 5% reported earnings in that range. Over the same period, the percentage of family physicians earning between $175,001 and $250,000 decreased from 52.5% to 45.8%. However, a significant gap still exists, and according to the New England Journal of Medicine’s report, over a 35-40 year career, the expected earnings difference between a PCP and a subspecialist is approximately $3.5 million. The article cited MACRA and the transition to value-based payment models as potential future drivers of increased demand and earnings for PCPs, and simultaneous decline in demand for certain specialists. However, of all survey respondents, more than two-thirds (67.6%) said that none of their current payment was value-based, and 16% said that only 1-5% of their payment was value-based.

Various states and insurers have initiated plans to improve price transparency among physicians and to encourage price shopping among patients. A study published in Health Affairs in December 2016 found that patients who visited low-priced PCPs (those who charged at least $5 dollars less per office visit that the median in their specific health plan and geographic region) subsequently spent less on lab tests, imaging and other procedures (price totals combined reimbursement and out-of-pocket spending). While the median price difference per office visit between low- and high-cost PCPs was only $26, patients of low-priced physicians spent an average of $690 (8.5%) less per year for care than patients of high-priced physicians (those who charged at least $5 dollars more per office visit that the median in their specific health plan and geographic region). The results suggest that a 10% reduction in the price of a physician office visit translated to approximately a 3% decrease in overall spending and a 5% decrease in...
spending on outpatient services. This suggests that as out of pocket costs for patients continue to increase, the value of price transparency by physicians may extend beyond the price of a single office visit.²³

**Trends: Alternative Payment Models**

- The 2015 Medicare Access and CHIP Reauthorization Act (MACRA) repealed the Sustainable Growth Rate formula and replaced it with the Quality Payment Program (QPP). Under the Year 1 Final Rule of the QPP, physicians in APMs, and physicians who both care for over 100 Medicare patients per year and bill over $30,000 in Medicare Part B allowed charges would participate in the one of the QPP tracks, determined at the practice level.²⁴
  - Under the MIPS track, physicians’ Medicare payments are adjusted based on quality and other data specific to their practices. These data are separated into four categories: quality (replacing the Physician Quality Reporting System), improvement activities, advancing care information (replacing meaningful use) and cost (replacing the value-based modifier). Under the 2017 QPP Final Rule (and the 2018 QPP Proposed Rule), cost would be calculated, but would not be included when determining payment adjustments.²⁵
  - Under the Advanced APM track, practices assume risk related to patient outcomes, and may receive a 5% incentive payment for providing high quality, cost-efficient care. In 2017, there were seven Advanced APMs, applicable to specific conditions, care episodes or populations.
  - Figure 4 displays the structure of MACRA and the QPP.²⁶

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**Figure 4. Structure of Quality Payment Program, 2017.**

- **Medicare Access and CHIP Reauthorization Act (MACRA)**
  - **Quality Payment Program (QPP)**
    - **Merit-based Incentive Payment System (MIPS)**
      - Quality: replaces the Physician Quality Reporting System (PQRS)
      - Improvement Activities
      - Advancing Care Information: replaces Medicare EHR Incentive Program (Meaningful Use)
      - Cost: replaces the Value-based Modifier
    - **Advanced Alternative Payment Models (APMs)**
      - Comprehensive ESRD Care - Two-Sided Risk
      - Comprehensive Primary Care Plus
      - Next Generation ACO Model
      - Oncology Care Model (OCM) - Two-Sided Risk
      - Shared Savings Program - Track 2
      - Shared Savings Program - Track 3
Quality Payment Program

- In June 2017, the Centers for Medicare and Medicaid Services (CMS) released its proposed rule for the QPP Year 2 (2018). Elements of the proposed rule for the MIPS included:

  - **Introduce virtual group participation option** - Virtual Groups would be made up of MIPS-eligible, solo or small group (10 or fewer) clinicians, who would combine with other such providers to participate in MIPS for one year. Physicians in Virtual Groups would typically report as a Virtual Group across all four performance categories, and would be held to the same standards as non-virtual MIPS groups. Virtual Groups would allow physicians in varying geographic areas and specialties to participate as a single unit in the program.

  - **Increase low-volume threshold** - The low volume threshold, as outlined in the 2017 Final Rule, excludes MIPS physicians or groups with $30,000 or less in Part B charges, or 100 or fewer Part B beneficiaries, as measured during a defined determination period. The proposed rule for Year 2 would raise those thresholds to $90,000 or less in Part B charges or 200 or fewer Part B beneficiaries, and would potentially allow physicians to opt-in to MIPS if they exceed one of those two thresholds. Additionally, the proposed rule included a potential third component, which would measure the number of Part B items and services.

  - **Keep cost performance category at 0% for 2018 performance year** - As proposed, the cost performance category would not factor into calculation of the Medicare reimbursement adjustment for the 2018 performance (2020 payment) year, as opposed to the 10% weighting forecast in the Year 1 Final Rule. The weighting would increase to 30% in the 2019 performance (2021 payment) year.

  - **Allow continued use of 2014 Edition Certified Electronic Health Record Technology** - This proposal would allow physicians to continue using the 2014 Edition Certified Electronic Health Record Technology (CEHRT) in 2018, but would grant a bonus to physicians using only the 2015 Edition CEHRT. The 2017 Final Rule had stated that all physicians would be required to use the 2015 Edition CEHRT in 2018.

  - **Additional bonus points** - In addition to the aforementioned bonus points to physicians using only 2015 Edition CEHRT, bonus points would be awarded for caring for complex patients. An adjustment would be made based on the complexity of patients cared for by the physician by using the average Hierarchical Conditions Category (HCC) risk score to calculate the final score.

  - **Reward improvement in Quality and/or Cost** - The proposed rule would reward improvements in the Quality and Cost performance categories for physicians or groups. Improvement would be determined by comparing the current performance period to the previous performance period.

  - **Allow facility-based measurement** - The proposed rule would implement a facility-based scoring mechanism, available to physicians with 75% or more of their covered services performed in hospital settings or emergency departments. This optional, voluntary mechanism, based on the Hospital Value Based Purchasing Program, would convert a hospital’s Total Performance Score into a MIPS Quality performance category and Cost performance category score.

  - **Increase flexibility for small practices** - Additional proposals target small practices, and include a hardship exemption for small-practice (15 or fewer) physicians, bonus points for small practice physicians and continued awarding of points for measures in the Quality performance category that do not meet data completeness requirements.
Additionally, proposed modifications to the Advanced Alternative Payment Model (APM) track include:

- **Extend revenue-based nominal amount standard for two years** - The total potential revenue-based risk under the APM must be greater than or equal to 8% of average estimated Part A and Part B revenue or 3% of expected expenditures. Under the proposed rule, this standard would be extended through 2020, a two-year extension from the 2017 Final Rule, which stated that the standard would only run through 2018.

- **Decelerate minimum total risk increases for Medical Homes** - Under the 2017 Final Rule, the minimum total potential risk for 2018 was 3% of the estimated average total Part A and Part B revenue, with a one percentage point annual increase, reaching 5% by 2020. Under the proposed rule, the minimum total potential risk for 2018 would be lowered to 2%, with a one percentage point annual increase in subsequent years and reaching 5% in 2021.

- **Clarify All-Payer Combination Option implementation** - Physicians in Advanced APMs have the option to participate in certain All-Payer Combination Options (Medicaid, Medicare Advantage and private payer arrangements that meet certain criteria). Under the proposed rule, Qualifying APM Participant (QP) determinations would be calculated only at the individual eligible clinician level, and not at the APM Entity level, which was allowed for in the 2017 Final Rule.

- **Improve transparency on physicians assessment under APMs** - Scoring for Advanced APMs will be weighted based on three performance categories in 2018: Quality (50%) based on quality data reported through the APM, Improvement Activities (20%) and Advancing Care Information (30%).

A survey conducted in 2017 by KPMG and the AMA of 1,000 practicing physicians who had heard about MACRA and the Quality Payment Program (QPP) in the United States found that just over half (51%) of respondents felt somewhat knowledgeable about the law and the QPP while 41% did not feel knowledgeable about these programs. Seven in ten respondents had started preparations to meet the Merit-based Incentive Payment System (MIPS) requirements of the QPP in 2017, of which 89% felt at least somewhat prepared. Of those physicians intending to participate in the MIPS in 2017, nine in ten found MIPS to be burdensome, and over half (53%) found it to be very burdensome, with the time required for reporting the biggest challenge. Of the physicians that are prepared to participate in the QPP, over half (58%) felt somewhat prepared for long-term financial success, only 8% felt very prepared, while more than one in four (26%) did not feel at all prepared. The findings of the survey indicated that certain challenges about the QPP applied to all practices, including the time required and complicated nature of reporting. The survey also found that physicians needed more assistance with preparations, especially those in small practices; that respondents wanted more alternative payment models than were currently available; that physicians with previous experience with value-based reporting were somewhat more prepared for MIPS and more confident in their performance; and that physicians were uncertain and concerned about the potential financial impacts associated with the QPP.

**Accountable Care Organizations**

Figure 5 shows the locations of Medicare Shared Savings Program (MSSP) Accountable Care Organizations (ACOs). The MSSP ACOs are divided into Tracks 1, 2 and 3. The overwhelming majority of MSSP ACOs, 438 of 480 (91.3%) in 2017, remained in Track 1, in which the organizations are not
exposed to downside risk. Of the remaining ACOs, six (1.3%) entered into Track 2 and 36 (7.5%) entered into Track 3, in which organizations share a maximum risk of 60% and 70%, respectively.\(^30\)

**Figure 5. Medicare Shared Savings Program ACOs, by Track, 2017.**

- Beginning in 2018, ACOs will have the opportunity to join an ACO Track 1+ Model, designed to encourage practices, specifically smaller practices, to participate in two-sided risk models. The program will also allow hospitals to participate. The Track 1+ Model will incorporate components of Tracks 1 and 3. Practices will assume downside risk with a fixed 30% loss-sharing rate, but may share up to 50% of shared savings rates. Lower levels of risk will be available to physician-only ACOs and ACOs in which small rural hospitals are included. Additionally, a prospective beneficiary assignment will allow Track 1+ Model ACOs advanced knowledge of the patient populations for which they would be responsible, and would have the option to request a Skilled Nursing Facility (SNF) 3-Day Rule Waiver. This program, designed to ease the transition for ACOs entering into two-sided risk models, limits participation to one three-year period.\(^31\)

- The SNF 3-Day Rule typically requires a Medicare beneficiary to stay for three consecutive days in an inpatient hospital, acute-care hospital or critical care hospital before Medicare will cover admission to a covered SNF. ACOs participating in Track 1+, Track 3 or the Next Generation model are eligible to apply for a waiver to this rule if patients meet certain eligibility conditions. Under these conditions the patient must not, at the time of admission, live in a nursing home or SNF for long-term care, must be medically stable, have a confirmed diagnosis, require no inpatient hospital evaluation or treatment, and have an identified need for skilled nursing or rehabilitation that could not be provided either by outpatient or home health services.\(^32\)

- Figure 6 displays the locations of Next Generation and Pioneer ACO models. Pioneer locations reflect the eight ACOs remaining in the program when it concluded on December 31, 2016.\(^33\) In 2017, 44 ACOs participated in the Next Generation model, which allows ACOs to assume higher levels of risk and reward than under other ACO models.\(^34\)
According to the 2017 Medscape Compensation Report, 36% of physicians participated in an ACO in 2017. This represents a 33 percentage point increase since 2012, when only 3% of physicians participated in ACOs.\(^\text{35}\)

At the end of the first quarter in 2017, roughly 32.4 million lives were covered by public and private ACOs, an increase of 2.2 million lives over the previous year. Over 10% of the U.S. population is now covered by an ACO.\(^\text{36}\)

A study published in Health Affairs found that providers participating in ACOs had mixed feelings about the effectiveness of the model. The investigators surveyed 1,401 physicians participating in MSSP, APM and Pioneer ACOs and found that while more than two-thirds of participants felt that their practice style was compatible with replacement of FFS with quality of care payments, they were comparatively less confident that the ACO model was effective in providing high-quality and cost-effective care. Additionally, significant percentages of physicians across all three ACO models did not know if they were eligible for shared savings, did not know if their practice could potentially face financial losses, and did not know for which patients the ACO was financially responsible. The APM, under which ACOs receive upfront payments based on the shared savings they are expected to earn, was the most favorably judged of the three models by participating physicians. The study concluded that ACOs would be well served by a better understanding of strategies that improve alignment of physicians’ perceptions and behaviors with the goals of the ACO, possibly including more frequent feedback and education, participation in ACO governance and more direct financial incentives.\(^\text{37}\)
Bundled Payments

- A review of the Bundled Payments for Care Improvement (BCPI) initiative conducted by the CMS 15 months into the program found mixed results. The evaluation primarily focused on 94 awardees, 58,410 episodes of care and results from three of four program models. Quality improvements and cost reductions were observed among orthopedic surgery patients, among whom average cost was reduced by 3% ($864) per episode with increased mobility 90 days after surgery compared to other hospitals. Among cardiovascular surgery patients, one model led to no cost reductions and no increases in quality of care. Additionally, payment increases were observed in spinal surgery episodes, while mortality declined.38

- In April 2016, the CMS initiated the Comprehensive Care for Joint Replacement (CJR) model, a bundled payment model that incentivizes coordination between hospitals, physicians and post-acute care providers for hip and knee replacements. Participant hospitals are held financially accountable for the quality and cost of a CJR episode, which begins with hospital admission and ends 90 days post-discharge of Medicare beneficiaries under MS-DRGs 469 and 470. Price targets will be set for each classification, and at the end of each performance year, a hospital’s total expenditures for related services under Medicare Parts A and B are compared to those targets. Hospitals may receive additional payment, or be forced to repay Medicare, depending on the quality and expenditures of CJR episodes. As of 2017, the CJR model had been implemented in 67 metropolitan statistical areas (counties associated with core urban areas, with populations of 50,000 or greater).39

- In August 2017, the CMS proposed a rule to abandon two bundled payment models set to begin in January 2018, the Cardiac Rehabilitation incentive model and the Episode Payment Models. Additionally, the proposed rule cut by nearly half the number of mandatory geographic areas participating in the CJR model, from 67 to 34, while allowing voluntary participation from the remaining 33 areas.40

Comprehensive Primary Care Plus

- The Comprehensive Primary Care Plus (CPC+) model launched in January 2017-- a primary care medical home model meant to strengthen primary care through payment reform and delivery transformation. A combination of public and private payers support the practices in the program, granting these practices additional resources and flexibility to invest, improve care quality and avoid unnecessary services. Several elements comprise payment in the program, including Care Management Fees (CMF) paid per-beneficiary-per-month and not based on visits; a performance-based incentive payment, based on measures of patient experience, clinical quality and cost of care; and payment under the Medicare Physician Fee Schedule. CPC+ is divided into two tracks, the first of which bills and receives fee-for-service (FFS) Medicare payments as usual, while the second receives reduced Medicare FFS payments, with a portion being placed into Comprehensive Primary Care Payments (CPCP) to be paid quarterly absent a claim. The CMS projects that Track 2 practices will increase comprehensiveness of care and that as a result, CPCP payments will be larger than the FFS payment would have been. CPC+ also provides a learning system and data feedback to assist in decision-making. As of the first round of the program, 2,866 primary care practices were participating in the program, with up to an additional 1,000 expected to join in Round 2, beginning January 1, 2018.41
An article in Health Affairs about CPC+ noted that the program aims for larger monthly payments per beneficiary combined with lower payments per service, achieved through a combination of capitation and FFS payments. In CPC+, fixed practice costs are covered by CPCP rather than FFS, thereby reducing or eliminating incentives to increase volume. The authors also mentioned potential downsides to the program, including lack of incentives to reduce costs for services provided outside of the participating practices (e.g. referring to efficient specialists/hospitals and limiting hospital readmissions), and the inability of CPC+ participants to also participate in ACOs, thus undermining the ACO model.42

Trends: Hospitals and other health care facilities

The American Hospital Association (AHA) has observed a gradual decline in the number of registered hospitals and community hospitals in the United States. In 2017, there were 5,564 registered hospitals and 4,862 community hospitals, down from 5,723 and 4,999, respectively, in 2014. Over that period, the number of hospital beds decreased from 920,829 to 897,961. Among community hospitals, those declines occurred primarily in rural settings, as the number of rural community hospitals fell from 1,980 in 2014 to 1,829 in 2017, while the number of community hospitals in urban settings increased from 3,019 to 3,033. Increases were observed in community hospital participation in systems (3,100 in 2014 to 3,198 in 2017) and networks (1,508 to 1,677).43,44

- Research released in 2016 by the Treatment Advocacy Center found that just 3.5% of state psychiatric hospital beds that were available in 1955 still existed in the first quarter of 2016, and that nearly 20% of available beds had been eliminated in the previous five years. Patients charged or convicted of crimes occupied half of the remaining beds, leaving roughly six beds for every 100,000 civil patients in the United States. Among countries that make up the Organization for Economic Cooperation and Development, the average ratio of state psychiatric hospital beds to patients was 68 per 100,000.45

- A 2016 McKesson survey of 115 payers and 350 hospitals of various sizes asked organizations to place themselves on a spectrum between FFS and VBP. Hospitals reported that half of their business (50%) was generated from VBP, up from 46% in 2014, while payers reported that 58% of their business was value-based, up from 48% in 2014. Hospitals with between 101 and 250 licensed beds and hospitals in regions where roughly 50% of the market share was split between one or two hospitals made the most significant progress toward VBP, suggesting that collaboration and the absence of fragmentation eases the transition to VBP. At the time of the survey, 91% of hospitals reported having a mix of VBP and FFS, a 10% increase over 2014. Hospitals also projected that bundled payment would grow the fastest of the VBP models, expecting it to account for 17% of their VBP in five years, and that pay-for-performance (PFP) would account for 15%. Payers projected that PFP would be the most common VBP model and account for 19% of payment, while bundled payment would account for 17%. When asked about the impact on profitability, the majority of payers (61%) projected a positive impact, while only 41% of hospitals thought the shift to VBP would improve their bottom line. Medium to large hospitals were more likely to expect a positive impact, 43% and 48%, respectively, as were hospitals participating in ACOs (49%). Small hospitals and those not participating in ACOs projected either negative or neutral impacts.46

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The 2016 Merritt-Hawkins Physician Inpatient/Outpatient Review Survey of hospital chief financial officers (CFOs) found that, on average, each physician generated approximately $1.6 million per year in annual net revenue for the hospitals that employed them, a 7.7% increase over 2013. Primary care physicians generated $1.4 million, a 10.5% decrease from 2013, while specialists brought in about $1.6 million, a 12.8% increase over 2013. Of all specialties, orthopedic surgery generated the highest annual net revenue at $2.7 million per year, followed by invasive cardiology ($2.4 million), neurosurgery ($2.4 million) and general surgery ($2.2 million). The authors of the report speculated that the decrease in revenue generated by PCPs may be a statistical anomaly, or may be a result of risk-bearing and VBP models that penalize physicians for exceeding budgets and reward them for providing high-value care. Under these models, revenue generated by physicians can be viewed negatively, and the authors anticipated that if VBP models become more prevalent, physician-generated revenue would decline, as health systems seek to benefit from shared savings.

### Trends: Non-physician provider supply

According to the Kaiser Family Foundation, as of April 2017, there were 4,148,730 professionally active nurses in the United States, comprised of 3,316,111 registered nurses (RNs) and 832,619 licensed practical nurses (LPNs). Of these, there were 166,194 professionally active nurse practitioners (NPs) in the United States.

- NPs are one of four categories of Advanced Practice Registered Nurses (APRNs), which also include clinical nurse specialists (CNS), certified registered nurse anesthetists (CRNAs) and certified nurse midwives (CNM).

The number of newly-educated RNs, measured by first-time exam takers, marginally decreased in 2015, following 14 years of growth. In 2015, 157,843 RNs took the National Council Licensure Examination (NCLEX) for the first time, down from 157,879. Contrarily, first-time exam takers from baccalaureate programs increased for the 14th consecutive year, reaching 70,857 in 2015. First-time exam takers from associate degree programs declined for the second consecutive year, falling to 84,379.

There were 88,478 professionally active physician assistants (PAs) in the United States in April 2017, according the Kaiser Family Foundation.

Projections from the AAMC indicate that the ratio of PAs to physicians and APRNs to physicians is narrowing considerably, and that supplies of PAs and APRNs are growing much faster than the demand for health care services. The study estimated that the ratio of physicians-to-PAs would decrease from 7.2:1 in 2015 to 3.5:1 in 2030, while the ratio of physicians-to-APRNs would decrease from 3.6:1 to 1.9:1 over that same period. Estimates indicated that by 2030, the supplies of both PAs and APRNs may well exceed the numbers required to maintain 2015 staffing levels, by 111,600 and 90,100, respectively. The authors of the report expressed uncertainty as to the impact this growth may have on the demand for physicians.
Trends: Scope of Practice

- As of April 2017, 43 states including Washington D.C. allowed PAs full prescriptive authority. Thirty-six states determined scope of practice for PAs on site, an arrangement in which the PA and supervising physician establish a written agreement to determine the PA’s scope of practice. Thirty states had adaptive supervision requirements, in which the circumstances of each practice determine how responsible supervision is accomplished, rather than being dictated by law. In 28 states, co-signature requirements are determined at the practice level by the supervising physician, and in 11 states, no limit is placed on the number of PAs a physician may supervise.

  - Figure 7 displays a state-by-state breakdown of scope of practice laws for PAs as of April 2017.  

- Twenty-four states and Washington D.C. statutorily allow NPs to practice independently without physician involvement, though it is unknown whether this occurs frequently, if at all, due to a lack of data reporting on independently practicing NPs. In 18 states, NPs require physician supervision, collaboration or oversight to diagnose, treat and prescribe, while another eight states allow NPs to diagnose and treat independently, but require physician involvement for prescribing. The remaining 24 states and Washington D.C. allow NPs to diagnose, treat and prescribe without physician involvement; nine of these states require NPs to complete a set amount of time in collaborative practice with a physician before they may practice independently.

  - The majority of states (44 plus Washington D.C.) allow NPs to prescribe schedules II-V controlled substances, while several impose restrictions on schedule II controlled substances. The remaining six states limit NPs to prescribing schedules III-V controlled substances.
  - Figure 8 displays a state-by-state breakdown of scope of practice policies for NPs as of early 2017. Black lines around a segment indicate a state in which NPs have a limited ability to prescribe schedule II controlled substances.

- In December 2016, the Department of Veterans Affairs (VA) announced that it would permit NPs, CNSs and CNMs to practice with full authority, even if practicing in states where laws would otherwise limit their practice authority. State restrictions on the prescribing of controlled substances, however, must still be followed, and the policy change did not extend to CRNAs. Roughly 5,769 APRNs are employed by VA.

- In January 2017, Missouri began accepting applications for assistant physician licenses. In 2014, the state became the first in the country to pass legislation creating the position, which is open to medical school graduates from the past three years who passed the first two rounds of medical licensing exams within the past two years, but did not find placement in residency programs. Assistant physicians will be licensed to provide primary care in medically underserved areas under the supervision of a physician, and can hold the position indefinitely. As of May 2017, of 127 applicants, 23 assistant physicians had been issued licenses. Versions of the law have passed in Arkansas, Kansas and Utah.
Figure 7. Physician Assistant Scope of Practice Laws. Data source: Barton Associates, 2017.

Figure 8. Advance Practice Registered Nurses Scope of Practice Laws. Data source: American Medical Association, 2017.
Predicted Impacts

- Physician supply will increasingly cluster in areas with many urban centers, and stronger efforts will be required to incentivize physicians to practice in lower population regions.
- Due to a lack of resources and funding, rural hospitals may not be able to provide equivalent levels of care for difficult or complicated patients compared to urban hospitals, leading to poorer outcomes.
- The physician population, like the U.S. population in general, will age, increasing the proportion of retired physicians and threatening physician supply while demand continues to increase.
- The proportion of female physicians will continue to increase as the gender balance of medical school enrollees equalizes.
- The increasing proportion of female physicians, who remain roughly twice as likely as their male counterparts to work part-time, may contribute to a decrease in net capacity among active physicians.
- Without concerted efforts to prepare and recruit members of racial and ethnic minorities into medical school, the physician population will continue to be disproportionately white compared to the overall U.S. population.
- Heavy administrative demands associated with emerging payment systems will force physicians to spend increasing amounts of time on computer work at the expense of patient care, driving dissatisfaction and burnout.
- Various factors including arduous administrative and reporting duties, the complexities of MACRA, uncertainty regarding insurer network inclusion, debt from medical school and consolidation of medical organizations will cause increasing numbers of physicians—particularly recent graduates and young physicians—to eschew practice ownership and seek employment.
- As physicians increasingly gravitate toward employment, the percentage of physicians with ownership stakes in their practices will continue to decline.
- The most prevalent practice models will continue to be single- and multi-specialty group practices, and while solo practices are unlikely to regain prominence, most physicians will continue to practice in models with ten or fewer physicians.
- As delivery models increase demand for primary care, the pay gap between primary care physicians and specialists will decrease.
- High deductible health plans will lead to an increasingly cost-conscious public, leading to greater demand for price transparency for physician and health care services, and may cause reluctance among patients to see physicians, follow up on referrals to specialists or purchase prescription.
- Rules for the Quality Payment Program will be modified to encourage participation of small practices and to ease EHR and other mandates.
- The ACO Track 1+ will encourage more practices, particularly small practices and practices in rural areas, to experiment with two-sided risk models.
- Increased transparency and communication by leaders at ACOs will be required to help physicians understand the impacts of their participation and increase confidence among participants that the models can be effective at improving care quality and lowering costs.
Hybrid payment models, in which payment comes from a combination of public and private sources and includes elements of fee-for-service, pay-for-performance, capitation and bundled payment will be increasingly prevalent; while these models have shown promise, they will also add complexity for physicians attempting to participate in value-based payment models.

Declining demand for high-cost emergency services and increased focus on preventative care—targeted results of emerging payment models—may lead to contraction among U.S. hospitals.

With increased incentives to provide low-cost and high-value care, physicians will become more cost efficient to qualify for payments from shared savings; physician-generated revenue for health services will decline.

The ratios of physicians-to-nurse practitioners and physicians-to-physician assistants will continue to narrow as training opportunities for mid-level providers expand more quickly than medical schools.

States will increasingly loosen restrictions on advance practice registered nurses and physician assistants as methods of meeting the growing demand for primary care services.
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