

ORIGINAL RESEARCH

Measuring primary care: the standard primary care year

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ABSTRACT

Introduction: Numerous reports highlight the problem of declining primary care capacity in the USA, especially in rural and remote areas. The reasons for declining primary care capacity are elusive. Little progress is likely without better definitions, tools, and approaches. The author proposes a standard primary care workforce year to adjust each primary care form for losses due to specialization, lower levels of practice activity, lower primary care volume, and shorter career length.

Methods: The author reviewed studies to create a standard primary care year estimate representing the total primary care contribution for each of the five training forms of primary care over the career length of the graduate. The standard primary care year was the product of four factors: (1) the career length in years; (2) the percentage estimated to remain in primary care; (3) the percentage active in practice; and (4) the percentage of primary care volume compared with a family practitioner. A best determination was made regarding the value of each of the four factors for each primary care form. Because specialization rates increased substantially to decrease primary care contributions, the estimate for each form also had to be linked to each class year of graduates.

Results: Family practice is the best example of a permanent primary care training form with 29.3 standard primary care years expected over a 35 year career. Other training forms appear to be more flexible with graduates able to choose primary care or specialty care depending on policy and market forces. The 2008 pediatric residency graduates can be expected to serve 17.6 years of primary care. Internal medicine resident primary care contributions have been reduced by 50% in the past decade to 5.3 years with international medical graduate internal medicine contributions decreasing to 2.5 years. Physician assistant estimates have decreased to 6 years, while nurse practitioner estimates have declined below 3 years per graduate. Without changes in policy or



training, the USA must graduate 11.7 international medical graduate internal medicine residents, or 10 nurse practitioners, or 5.5 US internal medicine residents, or 4.8 physician assistants, or 1.7 pediatric residents to equal the same primary care contributions as one family physician. With decreasing rural and underserved distribution levels in the flexible forms, the numbers of graduates needed to match the family practice rural primary care year and underserved primary care year contributions are even higher.

Conclusions: The primary care year is a versatile tool that can help to estimate primary care contributions across different forms of primary care. Specialization takes a huge toll on primary care capacity. Progressive failure to retain primary care makes expansions of graduates an ineffective and costly intervention. Without graduating more who remain in primary care, the USA can expect consistently lower primary care levels. Primary care contributions of progressively shorter duration could explain the perceived rapid collapse of primary care, particularly when studies of primary care fail to involve the most recent months of changes.

Keywords: Family practice/*education, forecasting, health manpower/statistics and numerical data/trends, internship and residency/statistics and numerical data, international medical graduates, nurse practitioners/education/*supply and distribution, physician's practice patterns/classification/*statistics and numerical data, physician assistants/education/*supply and distribution, primary health care/manpower, rural population/*statistics and numerical data, United States of America.

Introduction

In the USA, primary care training is no longer a guarantee of future primary care capacity. This represents a problem for healthcare access across the US. The most dramatic impacts are found in rural and underserved areas that depend on primary care for 36% to 100% of total physicians^{1,2}. The broadest scope generalists add important workforce versatility along with most needed health access, but the levels of nurse practitioners, physician assistants, and physicians remaining in the family practice mode of care have declined at the greatest rates.

Primary care studies include those who remain in primary care but fail to consider those who have departed primary care during training, at graduation and long after the completion of training³⁻⁶. Departures from primary care have been so consistent in the past decade that even the typical year or two of delay required to collect data and publish can result in primary care estimates that are too high and specialty care estimates that are too low.

Few comparative studies of multiple primary care forms are available. Studies consider two forms, but not all five primary care forms⁷⁻⁹. Primary care workforce studies fail to consider factors that limit primary care contributions, such as late entry into training (nurse practitioners, international medical graduates), low levels of activity in the US (nurse practitioners, physician assistants, international medical graduates), and lower volume of primary care delivered (nurse practitioners and physician assistants)^{6,10-13}.

The US rewards career and location choices that are most closely associated with top concentrations of health resources, physicians, and specialists. Physician subspecialty salaries are multiple times higher than salaries for the basic health access careers. Salary differentials drive physician assistants and nurse practitioners away from primary care. Medical students and residents in training also experience primary care clinics that have gained a reputation for dysfunctional primary care that could influence career decisions away from choosing primary care or remaining in primary care¹⁴. Despite all of these areas of concern, studies of primary care have apparently been insufficient to influence needed change.



When healthcare studies fail to illustrate great and growing difficulties, it is time to re-examine the definitions, perspectives, tools, and approaches currently in use. Definitions that fail to capture departures from primary care fail to adequately define primary care. Perspectives that fail to capture health care for an entire nation fail the basic requirement of national health care design – consideration of an entire nation. Primary care and health access are not about the superiority of one form over another. The most important considerations are availability, consistency, continuity, and dependability. In the US at the current time, primary care is about resistance to powerful forces that destroy healthcare access. A measuring tool that can illustrate these most important concepts can improve understanding and help shape recovery of primary care and health access.

Methods

Nurse practitioner (NP), physician assistant (PA), internal medicine (IM), pediatric (PD), and family practice (FP) contributions to primary care were estimated for 2008 program graduates using data from recent studies. The calculations were the product of the following four factors:

1. Factor 1: Primary care retention percentage remaining after specialization.
2. Factor 2: Duration of career for the primary care form in years.
3. Factor 3: Activity level as a percentage compared with all graduates.
4. Factor 4: Volume of primary care delivery as a percentage compared with family physicians.

The calculation was designed to include the primary care contribution for each form of primary care graduate over an entire career. This allows comparisons between each form and also changes over time within each form, due to changes in policy or training. In addition, the cumulative changes for total primary care production can be determined for all forms, and the share of primary care for each type can be assessed.

Estimates of standard primary care years for family practice

Factor 1: Primary care retention percentage remaining after specialization: Family practice retention rates are about 98% over the first decade and the small fraction lost are often to other forms that deliver primary care. Approximately 87% of family physicians are listed in office-based primary practice activities in the Masterfile; however those remaining as not classified tend to be osteopathic physicians that are delivering top primary care levels. The American Medical Association Masterfile is the most comprehensive secondary database in the nation. Career fields include self-designated specialty and self-designated primary practice activities such as office based, hospital based, resident, teaching, administration and research. Family physicians not listed in office based primary practice activities also make primary care contributions¹.

The estimate for primary care retention was 95% for 2008 family practice residency graduates.

Factor 2: Duration of career for the primary care form in years: Career length in family practice reaches 35 years as with other primary care physicians^{1,12}

Factor 3: Activity level as a percentage compared with all graduates: The most recent family practice graduates are over 95% active in the Masterfile. Secondary databases are not the best source. Annual collections of data, such as physician assistant surveys or annual state surveys of primary care, are more consistent and timely.

The 88% activity level for the cross-section of primary care physicians in Vermont studies was used¹⁵.

Factor 4: Volume of primary care delivery as a percentage compared with family physicians: The volume of care delivered by family physicians was assigned a rating of 100% in order to establish comparisons with other forms of primary care¹².



Estimates of standard primary care years for physician assistants

Physician assistant primary care estimates are backed by annual surveys that may be the only studies that capture important annual changes in primary care. Declines in primary care contributions have been steady since the creation of physician assistants with the brief exception of the 1990s. This policy period is an important natural experiment to understand. During this period of health reform, managed care, expanded population coverage (Medicaid expenditures for care of the poor doubled), and primary care reimbursement improvement, there were actually returns of physician assistants (all graduates and new graduates) and internal medicine residents (new graduates) back to a majority remaining in primary care. The end result of peak primary care policy was a maximal level of primary care in all forms. Medical student choice of family medicine reached all time peak levels during this optimal primary care policy era that is in marked contrast to the present era.

Physician assistants have been decreasing in family practice, primary care, and rural percentages at 1 to 2 percentage points a year for over a decade in annual surveys, representing the entire active physician assistant population. All three changes are related because physician assistants are leaving associations with family physicians that have the top rural and underserved and primary care contributions in the nation. Physician assistants working with family physicians have 30% rural location or double the rural location rate of other physician assistant specialties. In 1984 approximately 56% of physician assistants worked with family physicians. By 2007 only 25% were working with family physicians. For physician assistants known to be in primary care in 1991, over 30% had departed by 2000¹⁶. Additional studies by Larson, Hart, Hooker, and the American Academy of Physician Assistants were used to determine the primary care factors^{6,7,9-13}.

Factor 1: Primary care retention percentage remaining after specialization: Primary care retention was 35% for

2007 annual surveys. Steady declines for over a decade at rates of 1-3 percentage points a year indicate that 2008 graduates would have less than 33% retention in primary care. Further declines in the years after graduation would put physician assistant contributions below 30%, and as low as 25% without changes in the market forces, health policies, and salary differentials that drive specialization.

The estimate for physician assistant primary care retention was 32%.

Factor 2: Duration of career for the primary care form in years: Physician assistants have changed from older age entry with more life and health experiences to become the youngest to enter patient care responsibilities. Primary care, rural, and underserved contributions are generally highest for primary care graduates entering careers at older ages.

Physician assistants have the potential to work more than 35 years and changes suggest that this level will not be exceeded.

Factor 3: Activity level as a percentage compared with all graduates: Physician assistant departures from active practice have accelerated after the first 15 years. Inactivity levels were 7.5% at 6 years, 15% at 11 years, and 30% at 19 years¹⁶. Because nurse practitioners and physician assistants were older in the first classes of graduates, it is difficult to project activity, retirement, or career duration. The Vermont AHEC studies generated 72% activity levels for physician assistants using 40 hours a week¹⁵.

The 72% activity level was used for 2008 physician assistants.

Factor 4: Volume of primary care delivery as a percentage compared with family physicians: Studies indicate that physician assistants have 75% of the primary care volume of a family physician, but changes in age, training focus, and previous primary care experience may impact this ability¹⁷.



The 75% primary care volume estimate was used in this study.

Estimates of standard primary care years for internal medicine residency graduates

Estimates were generated for the two major types of internal medicine graduates: US medical school graduates (IM) and international medical school graduates (IM IMG).

Factor 1: Primary care retention percentage remaining after specialization: Declines have been 250 to 350 fewer graduates beginning in primary care with each class year. Primary care intention was found in 25% of the 2005 internal medicine residency graduates⁵. Internal medicine in the 1990s became a more flexible form of primary care with departures at 2 percentage points for each year after graduation¹⁸. Changes since 2005 with a rapid increase in hospitalist careers suggest even more rapid departures. Declines are likely to continue because only 19% plan to begin careers in primary care¹⁹. General internal medicine has also suffered from the lowest physician satisfaction levels²⁰. Studies fail to capture the rapid primary care declines or the increased difficulties accessing primary care internal medicine with 43.8% accepting no new patients in states such as Vermont. Slow steady decreases in internal medicine primary care physicians are evident in these annual surveys¹⁵.

The 2008 graduates were estimated to have 20% primary care retention rates. The same estimate was used for international medical graduates.

Factor 2: Duration of career for the primary care form in years: Internal medicine residency graduates remained with 35 year career length estimates. The international medical graduates have an 8 year average career loss due to delays in entry, with a 27 year career length.

Factor 3: Activity level as a percentage compared with all graduates: Internal medicine physicians have the same activity levels as other primary care physicians. International

medical graduate internal medicine physicians have different activity in the US. Approximately 20% depart for home nations and 8% remain chronically unemployed¹³. Other graduates leave after training to pursue opportunities in other nations.

United States graduate internal medicine physicians share the 88% active level of other primary care forms. International graduates are estimated to have 58% practice activity in the US.

Factor 4: Volume of primary care delivery as a percentage compared with family physicians: The internal medicine volumes of primary care were 86% compared with family physicians^{1,12}. International medical graduates were estimated to have lower volumes at 80% although lower levels are possible due to the many adjustments and transitions required.

Estimates of standard primary care years for pediatricians

Factor 1: Primary care retention percentage remaining after specialization: Pediatricians in primary care tend to remain relatively committed before, during, and after training. Steady declines have been seen in the most recent decade. For many decades approximately 70-80% of pediatric residency graduates have remained in primary care. Numerous factors have changed this retention level. Fewer children in the US, more primary care pediatricians, changes in Medicaid support for lower income children, increased competition from other primary care (and non-primary care) sources, and a narrower range of practice locations (fewer rural or underserved) have made it more difficult for pediatric residency graduates to remain in primary care^{1,21-23}. Despite these changes the existing primary care pediatricians remain among the most satisfied physicians²⁰. The recent declines for office-based pediatricians found in the Masterfile are consistent with primary care retention declines below 60%, and are below 40% in the medical schools that have the more exclusive selection processes that are seen in nearly all medical schools. Pediatric workforce studies



acknowledge a wide range of estimates, depending on the criteria used, but a most recent estimate was 62% primary care retention for males and 72.7% for females²⁴.

The estimate for primary care retention for 2008 pediatric residency graduates was 60%.

Factor 2: Duration of career for the primary care form in years: Pediatricians share the 35 year career estimate of other primary care physicians.

Factor 3: Activity level as a percentage compared with all graduates: Pediatric activity levels remain estimated at 88%¹⁵.

Factor 4: Volume of primary care delivery as a percentage compared with family physicians: Pediatricians deliver 95% of the volume of a family physician^{1,12}.

Estimates of standard primary care years for nurse practitioners

Few areas of workforce are as confusing as the nurse practitioner workforce. To obtain even the most basic primary care retention and practice activity percentages, an accurate denominator is needed. This is difficult because thousands of nurse practitioners 'disappear' each year as they move to different states, no longer list themselves as nurse practitioners, or no longer maintain a license. Nurse practitioners do not use the Masterfile type databases that are used for physicians and physician assistants. Blanks appear in critical areas such as specialty rates even in recent published review studies⁷. Studies often do not compensate for the fact that nurse practitioners who have primary care training (pediatric, adult, or family nurse practitioners) are often found practicing in hospitals, specialty clinics, or emergency rooms²⁵. Missing data are most likely to involve nurse practitioners in hospital careers, those who are inactive, those who are without a license, and those in states that fail to report data. Additional references were used for nurse practitioner contributions^{7,17,25,26}.

Factor 1: Primary care retention percentage remaining after specialization: Nurse practitioner estimates of primary care began with the 2004 annual graduate survey. Goolsby assembled 22 000 full time equivalents (FTE) of primary care in up to three different locations from 39 000 responses^{10,11}. This appears to be a 56% primary care level but some variation is possible depending on the definition of an FTE. The use of a 32 to 36 hour week is standard in nurse practitioner studies. If 36 hours was used, a change to a more consistent 40 hours a week would result in 51% primary care. Using physician hours of 52-56 hours, the primary care calculation for nurse practitioners would be 38%. Despite these obvious difficulties, the beginning point was considered to be 56% primary care retention.

Further adjustments are needed because nurse practitioners define primary care differently, and because primary care attrition has been rapid since the previous 2004 study. The nurse practitioner definitions for primary care include 11% in women's health (not nurse-midwives) and 4% in geriatrics. These are areas not included in physician and physician assistant calculations of primary care and are also low patient care volume areas different from family practice, internal medicine, and pediatric physician primary care forms. To obtain the comparable primary care measurement, 15 percentage points (11 + 4) were subtracted, resulting in 41% primary care retention. Finally, adjustments must include declines for each class year over the past 4 years. Estimates must allow for rapid departures of nurse practitioners to cardiology (6%), other internal medicine specialty careers, emergency care, and other specialties. Numerous reviews were required to match up specialization rates to primary care retention rates to gain some agreement.

Estimates of 35% were used for the primary care retention rates for the 2008 nurse practitioner graduates over the next 27 years of their career.

Factor 2: Duration of career for the primary care form in years: Career length is limited in nurse practitioners by late entry into training. Initial nurse practitioners had delays in entry averaging 10 years but earlier entry results in only



8 years lost in recent graduates. Entry into nursing also involves a wide range of ages. A wide range of age entry variations and variations in nurse practitioner training length from 15-40 months complicate nurse practitioner calculations^{10,27}.

Estimates of 27 year career durations were used for 2008 nurse practitioner graduates.

Factor 3: Activity level as a percentage compared to all graduates: Nurse practitioners had the lowest activity levels at 62% in studies of practitioners in the field using 40 hours as a work week¹⁵. Nursing forms all have a variety of activity levels but are generally 70% or below^{25,28}. Also the nurse practitioner contributions are from those in older age ranges, which is likely to limit contributions. Older age and use for certain duties may also help explain levels as high as 15% of nurse practitioners listed in administrative activities^{10,11,29}. Estimates were not corrected for declines in primary care activity related to administrative losses because field estimates were used.

Nurse practitioner activity levels were estimated at 62%.

Factor 4: Volume of primary care delivery as a percentage compared to family physicians: Nurse practitioners have the lowest volume of primary care with two-thirds of the volume of a physician assistant with the volume of a physician assistant at 75% of the volume of a family physician^{17,30}.

The estimate for nurse practitioners is 50% of the volume of a family physician.

Regarding nurse, physician assistant, and nurse practitioner primary care contributions

Nurses make contributions to primary care before, during, and after physician or practitioner encounters. Losses of nursing can represent a problem, especially when shortages of nursing faculty impair the production of nurses. Nursing

shortage estimates are of approximately 320 000 for the year 2020. This is approximately the same as the 320 000 who are likely to have been trained as nurse practitioners and nurse anesthetists by 2020. Significant numbers of physician assistants have also been previously involved in various forms of nursing²⁵.

No adjustments were made for any losses of primary care volume resulting from insufficient levels of primary care nursing, resulting from rapid increases in primary care nursing duties to coordinate patients that have been under the care of hospitalists or urgent care centers, and resulting from massive increases in the verifications of patient eligibility for even basic drugs, treatments, and consultations. One of the major problems apparent in cost control measures is that few if any studies measure the consequences of cost control measures. Cost control studies and interventions can introduce complications and obstacles that can impair health care delivery.

Final calculations and adjustments for rural or underserved location contributions

On the basis of these data, an estimate of standard primary care years likely to be provided by a 2008 graduate was calculated for each of the primary care professions as follows:

Factor 1 x Factor 2 x Factor 3 x Factor 4 = Standard primary care years.

Further adjustments were then made to estimate their contribution to rural and underserved communities. Steady deteriorations in rural and in underserved location rates have been seen in the more flexible forms of primary care. Family practice has emerged as the leader in distribution, with 20% remaining in rural locations and 15% found in underserved locations (zip code with 19% or more in poverty or a Community Health Center or a whole-county primary care shortage area at the zip code). These rates are both double the average levels for other forms of primary care and for physician workforce in the US at 10% rural and 7-8%



underserved. Masterfile zip code practice locations for recent internal medicine and pediatric primary care physicians were used.¹ Internal medicine and pediatric primary care training forms have been moving away from rural and underserved careers and primary care careers for decades^{1,18,21-23}.

Due to the lack of comparable data using practice zip codes, nurse practitioners were rated at the same rural and underserved distribution levels as family physicians, although declines have been steady. Physician assistant data documents 15% rural location rates and changes in physician assistant employers indicate declines in underserved contributions. An estimate of 12% underserved location was made. There was no adjustment made for future changes that would reduce rural and underserved primary care workforce over the next 2 or 3 decades of the 2008 graduates. As nurse practitioners and physician assistants are accepted as health professionals and are actively recruited as higher paid specialists, their primary care and underserved distributions can only decline.

Results

The resultant estimates of primary care workforce years for a 2008 graduate are presented in Table 1.

From these data, it can be seen that a replacement for a single family physician would take 10 nurse practitioners, or 5 physician assistants, or 5-6 internal medicine residency graduates, or 11-12 IMG internal medicine residency graduates or 1.7 pediatricians to contribute the same 29.3 standard primary care workforce years. The rural primary care and underserved primary care ratios are even higher for other forms of primary care that have lower rural or underserved location rates than family physicians.

High, low, and lowest range estimates can be prepared using combinations of the highest available factors, combinations of the lowest, or situations likely to involve the most complex primary care situations. The most complex

situations involve primary care forms involved in teaching, administration, or supervisory roles; situations with lower volume care (geriatrics, women's health, procedures); locations with patient populations with high no-show rates and unused capacity; or dysfunctional settings with poor support and numerous problems. These data are presented in Table 2.

Discussion

The strength of any research study is complete data. The standard primary care workforce year tool reveals that a major weakness of previous primary care workforce studies is missing data. Primary care studies must include entire populations of those trained in primary care. Missing graduates impair calculations of FTEs, practice activity levels, and specialization rates.

With limited outcomes data, there is limited understanding of important changes in primary care capacity.

The major limitation of any workforce study is assumptions. The author attempted to document the assumptions used for the estimates and the ranges of possibilities to allow scrutiny such that estimates can be improved in future studies. One of the limitations of the study is the same as that of most workforce studies at the current time. This study is just as likely to overestimate primary care, rural, and underserved contributions in internal medicine, physician assistants, and nurse practitioners as departures are likely to continue to increase throughout the 2 or 3 decades remaining in the careers of 2008 graduates. Family practice and pediatric contributions have so far remained more reliable over the years after graduation. Neither has been subjected to the temptation of higher salaries for leaving primary care, although this could change.



Table 1: Estimates of primary care workforce years for a 2008 graduate

Element	Type					
	NP	PA	FM	IM	IM IMG	PD
Factor 1: Retention in primary care	0.35	0.32	0.95	0.20	0.20	0.6
Factor 2: Career length in years	27	35	35	35	27	35
Factor 3: Practice activity in United States	0.62	0.72	0.88	0.88	0.58	0.88
Factor 4: Primary care volume	0.5	0.75	1	0.86	0.80	0.95
Distribution factors for recent graduates						
% of Primary care in rural areas	20.0%	15.0%	20.0%	8.9%	7.0%	8.2%
% of Primary care in underserved areas	15.0%	12.0%	15.0%	8.1%	8.7%	8.5%
Standard primary care years	2.93	6.05	29.26	5.30	2.51	17.56
Rural primary care years	0.59	0.91	5.85	0.47	0.18	1.44
Underserved primary care years	0.42	0.73	4.39	0.43	0.22	1.49
Number needed to graduate to supply equivalent standard primary care years as one FM doctor	NP	PA	FM	IM	IM IMG	PD
Primary care workforce	10.00	4.84	1.00	5.52	11.68	1.67
Rural primary care workforce	10.00	6.45	1.00	12.41	33.37	4.07
Underserved primary care workforce	10.00	6.05	1.00	10.23	20.13	2.94

Program graduates entering the workforce: FM, family medicine; IM, internal medicine; IM IMG, internal medicine international medical school graduate; NP, nurse practitioner; PA, physician assistant; PD, pediatric.

Table 2: High and low ranges for estimated standard primary care years

Element	Type					
	NP	PA	FM	IM	IM IMG	PD
Standard primary care years	2.9	6	29.3	5.3	2.5	17.6
Highest combination	5.7	7.8	34	7.6	4.5	21.1
Lowest combination	2.2	4.8	25.3	4	1.5	12.6
Most complex	1.8	3.7	21	3.3	1.1	10.3

Program graduates entering the workforce: FM, family medicine; IM, internal medicine; IM IMG, internal medicine international medical school graduate; NP, nurse practitioner; PA, physician assistant; PD, pediatric.

New terminology can also help in understanding primary care. ‘Permanent’ and ‘flexible’ are useful terms to describe the family practice residency graduates who are policy resistant and remain while other forms are policy sensitive. While family practice remains policy resistant once trainees reach residency training, the students facing the permanent primary care choice of family medicine during medical school are not policy resistant. The decision for family medicine is currently the most important decision in all of health care for those in need of primary care and health access. Once this decision is made, the US enjoys 29 years of primary care with optimal distribution. Once medical students pass on this decision, the opportunity is lost. It is

most difficult to make a permanent primary care decision in the current policy era.

The failure of medical students to trust the choice of the remaining permanent form, rapid declines in primary care retention in the flexible forms, and progressive losses of rural and underserved workforce would seem to dictate loss prevention strategies in training and policy or major reforms. No such decisions are being made. In fact, the diversions away from primary care are increasing with new specialty tracks added each year to nurse practitioner and physician assistant training, more urgent care clinics, emergency care expansions, and increases in hospitalist forms. These deficits force healthcare systems to use expensive temporary



solutions for nursing and physician workforce. Those employed by such agencies can often have better pay, have more flexible hours, and have fewer responsibilities. A vicious cycle is created with more leaving continuity care for temporary care forms and specialty careers.

Those in most need of healthcare workforce can actually contribute to the decline of primary care capacity. Rural and underserved clinics and hospitals have been granted the ability to use capitation or cost-based mechanisms that are more supportive than the current reimbursement mechanisms. Healthcare administrators can use this ability to pay the additional costs for hospitalists, rural emergency physicians, or temporary primary care physicians. Unfortunately those who fill these contracted positions often leave the continuity primary care practices most needed for health access.

It is a worst-case scenario for the primary care capacity pool. The supply line leaks potential primary care before it can reach the pool. Existing primary care capacity leaks out of widening cracks in the pool wall. New healthcare entities actively tap into the primary care pool to drain capacity. Differentials between primary care and specialty salaries and support levels, as well as failures in basic health access design, continue to drive this vicious cycle.

Conclusions

The standard primary care year allows different forms of primary care to be compared according to the time spent delivering primary care throughout an entire career. Adjustments can be made for changes in specialization, activity, career length, and volume. Activity, career length, and volume appear to be determined by the type of training form. The major changes have been in specialization rates with a pattern of decreasing primary care retention for all of the flexible training forms over time, and for policy eras that are less supportive of primary care.

A generic focus on additional primary care graduates will not restore health access in the US at the current time. Health access workforce recovery requires a primary care form with the highest level of retention in primary care, the longest career length, top practice activity levels, maximal primary care volume, and broadest distribution. Policies or incentives that rapidly increase the production of family physicians appear to be a best practices choice for a return to efficiency, effectiveness, versatility, and dependability in primary care.

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