



Increasing Racial and Ethnic Diversity at the University of Utah Physician Assistant Program

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BACKGROUND AND OBJECTIVES: Among the oldest in the nation, the University of Utah Physician Assistant Program (UPAP) serves the state of Utah and surrounding areas and is a division of the Department of Family and Preventive Medicine. Recognizing the need to produce health care providers from diverse racial and ethnic backgrounds, UPAP instituted structural changes to improve student compositional diversity. This paper is a presentation and evaluation of the changes made to determine their relationship with compositional diversity, ultimate practice setting, and national rankings.

METHODS: UPAP changed diversity messaging, curriculum, efforts in admissions, recruitment, and retention to improve the representation of Black, Latinx, American Indian/Alaska Native, and Native Hawaiian/Other Pacific Islander students, as well as those from educationally and economically disadvantaged backgrounds.

RESULTS: UPAP tripled the number of underrepresented minority matriculated students over the course of five admitted classes, while simultaneously increasing the proportion of students from educationally or economically disadvantaged backgrounds. UPAP maintains both high boards pass rate and top national rankings, (number two ranking in public physician assistant program and number four overall program in the United States).

CONCLUSIONS: The UPAP experience demonstrates that intentional diversity efforts are associated with improvement in racial/ethnic diversity and national rankings. Other medical school graduate programs, specifically the medical doctor (MD), public health, and basic science programs can use this model to improve their compositional diversity.

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A health care workforce that mirrors the diversity of the population can help reduce health disparities.^{9,10} Because PAs care for increasingly diverse populations with complex needs, the PA workforce must change.¹¹ Recognizing the need to diversify the PA workforce, the University of Utah Physician Assistant Program (UPAP) underwent a radical transformation over the last decade through intentional changes in admissions, student support, and curriculum. This study examined the equity, diversity, and inclusion changes implemented by UPAP and compares outcomes over a 5-year period. As about 20% of PAs practice in primary care settings, increasing diversity in PA programs can increase the diversity of the primary care workforce. In addition, UPAP techniques presented in this manuscript can be implemented in medical school admissions as well as family medicine resident selection.

Methods

UPAP initiated changes to foster and encourage equity, diversity, and inclusion in the program over the last

A racially and ethnically diverse health workforce is critical to all communities in the United States, especially those that are underserved.^{1,2} US Census data show that groups collectively known as underrepresented in medicine (URM) are growing at rates much higher than the US White population.^{3,4} The US physician assistant

(PA) profession, however, does not mirror the current population,^{5,6} and has recently experienced an increase in White matriculants.⁷ As a result, while URM populations in the United States are increasing, the PA workforce remains predominantly White. Similarly, the diversity of the Utah PA workforce lags behind the Utah population (Table 1).⁸

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decade. UPAP focused on four broad areas: intentional diversity messaging, student recruitment and admissions, student retention, and curriculum reform (Table 2).

Measuring the Impact

To measure the impact of these equity, diversity, and inclusion changes from 2014 to 2019, UPAP compared matriculated students' admissions application data, including race/ethnicity/gender demographics and students' self-identified educationally or environmentally disadvantaged status. Upon each cohort's graduation, UPAP used the graduates' National Provider Identifier (NPI) numbers to track employment location and practice specialty, focusing on medically

underserved communities (MUC). UPAP followed the annual *US News and World Report* program ranking to correlate the program ranking with practice setting and student diversity. UPAP assessed preparedness for practice with the Physician Assistant National Certifying Exam (PANCE). The University of Utah Institutional Review Board deemed this project exempt from review.

Results

In almost all categories, UPAP matriculated more URM students each year from 2014 to the entering class of 2019 (Table 3). The class size increased by 45%, from 44 to 64. At the same time, URM matriculated students increased by 212% from 8

to 25 per class (18% to 39% of students). Women in the class remained relatively constant between 52% and 61%. Students who self-identified with educational or environmental disadvantaged status increased over the observation period from 24 to 44 (55% to 70% of students; Table 4).

For the four classes that graduated during the study period, employment in primary care settings was high across all years, varying from 38% to 54%, as did employment in medically underserved communities (MUC), varying from 22% to 43% (Table 5). First-time PANCE pass rates varied over the observation period from 93% to 100%; all graduates passed the PANCE by the second attempt. UPAP's ranking by *US*

Table 1: Underrepresented in Medicine* Groups as a Percentage of Population (2018 Estimates)^{22,23}

Underrepresented in Medicine Group*	% US Population	% US PA Population	% Utah Population	% Utah PA Population
Hispanic/Latinx/a/o	18.1	6.5	14	5.4
American Indian/Alaska Native	1.3	1.5	1.5	0.6
Black or African American	13.4	3.6	1.4	0.5
Native Hawaiian or Pacific Islander	0.2	0.3	1.0	0.5

Abbreviation: PA, physician assistant

* Our institution defines underrepresented in medicine is defined as persons from American Indian/Alaska Native, Black or African American, Hispanic or Latinx/a/o, and Native Hawaiian or Pacific Islander backgrounds.

Table 2: Summary of Structural Changes to the University of Utah Physician Assistant Program

Intentional diversity messaging	<ul style="list-style-type: none"> Administrative, academic and student affairs support are centered on the Mission and Vision of equity, diversity and inclusion (EDI). EDI is a standing item at all faculty and staff meetings EDI is an intentional part of the curricular programming throughout the 2-year program, supported by a standing EDI committee
Student recruitment and admissions	<ul style="list-style-type: none"> Collaboration with the 4-year Health Sciences Learning, Engagement, Achievement, and Progress (HS-LEAP) program and other programs for students from underrepresented and disadvantaged backgrounds.²⁴ Strong relationship with the undergraduate pre-PA student organization and actively recruitment through local community partners. Holistic admissions review process considers the applicants' racial/ethnic diversity, disadvantaged socioeconomic and educational background, distance traveled, intent to practice primary care in an underserved community.^{1,25,26}
Student retention	<ul style="list-style-type: none"> Prioritizes matriculated students' needs and issues. 1:8 faculty advisor-to-student ratio allowing for an appreciative-holistic model. Procedural and policy retention program incorporating individual academic needs, and social determinants of academic achievement to improve student retention.
Curriculum reform	<ul style="list-style-type: none"> Student workshops that address power and privilege Stand-alone courses on cultural humility and responsiveness, social accountability, microaggression, stereotyping, gender/sex equity, diversity and inclusion, health disparities, social determinants of health, and related disease and outcome epidemiology. Thirty-eight rotation offerings in underserved areas.

Table 3: Underrepresented in Medicine Demographics for University of Utah Physician Assistant Classes 2014-2019

Underrepresented in Medicine Group	Class 45 2014 N=44 n (%)	Class 46 2015 N=44 n (%)	Class 47 2016 N=46 n (%)	Class 48 2017 N=45 n (%)	Class 49 2018 N=60 n (%)	Class 50 2019 N=64 n (%)
Hispanic/Latinx/o/a	5 (11)	6 (14)	8 (17)	6 (13)	11 (18)	17 (27)
American Indian/Alaska Native	1 (2)	0	1 (2)	2 (4)	0	3 (5)
Black or African American	3 (7)	1 (2)	1 (2)	3 (7)	2 (3)	1 (2)
Native Hawaiian or Pacific Islander	0	0	1 (2)	2 (4)	2 (3)	1 (2)
Asian underserved (Vietnamese, Myanmar, Nepalese, Bangladesh)	0	0	1 (2)	0	5 (8)	3 (5)
Women	25 (57)	26 (59)	28 (61)	27 (60)	31 (52)	37 (58)
Totals (URM)	8 (18)	7 (16)	13(28)	13 (29)	15 (25)	25 (39)

Abbreviation: URM, underrepresented minority.

Table 4: Educational/Environmental Disadvantaged Status for University of Utah Physician Assistant Classes 2014-2019

Matriculation Year	Students n	Students %
Class 45, 2014 (N=44)	24	55
Class 46, 2015 (N=44)	23	52
Class 47, 2016 (N=46)	18	39
Class 48, 2017 (N=45)	19	42
Class 49, 2018 (N=60)	33	55
Class 50, 2019 (N=64)	44	70

Table 5: University of Utah Physician Assistant Graduate PANCE Pass Rate and Employment Rates for Primary Care and Medically Underserved Communities From 2016-2019

UPAP Class Graduation	Primary Care (%)	MUCs (%)	PANCE First Attempt Pass Rate
Class 45 (N=43) Graduated 2016	19 (44)	14 (33)	93%
Class 46 (N=44) Graduated 2017	24 (54)	19 (43)	98%
Class 47 (N=46) Graduated 2018	21 (46)	13 (28)	100%
Class 48 (N=45) Graduated 2019	17 (38)	10 (22)	93%

Abbreviations: UPAP, University of Utah Physician Assistant Program; PANCE: Physician Assistant National Certification Exam; MUC, medically underserved communities.

Source: Tracking of National Provider Identifier numbers linked to UPAP graduate employment.

News and World Report improved from number five in 2015-2016¹² to number four in 2019-2020.¹³

Discussion

With an intentional focus on increasing diversity, UPAP tripled the number of URM matriculated students over the course of five admitted classes, while simultaneously

increasing the proportion of students from educationally or economically disadvantaged backgrounds. At the same time, UPAP's class size increased to meet the UPAP-mission-based medical workforce needs. Utilizing holistic admissions criteria increased the diversity of UPAP's matriculating class.¹⁴ UPAP's initiatives have resulted in a diverse class,

an increase in national rankings, and a stable high percentage first-attempt PANCE pass rate.

The matriculated UPAP students in 2019-2020 are now as diverse as Utah's general population, allowing for improved racial and ethnic concordance with providers and patients.¹⁵ Provider-patient concordance improves communication,

trust, and patient satisfaction.¹⁶⁻¹⁹ Twenty percent of UPAP graduates practice in underserved settings while the national average for new PA graduates is 7%.²⁰ Uniquely, while White matriculation is increasing nationwide,⁷ UPAP increased matriculation of URM, low socioeconomic status, and educationally disadvantaged students. Furthermore, this increase in diverse matriculation is associated with an increase in national rankings of UPAP.

UPAP has been successful in, and remains committed to, a process of continuous diversity improvement to ensure that the gains of the last 5 years are built upon for the foreseeable future. UPAP must remain vigilant in selecting applicants who intend to work in primary care, in addition to continuing equity, diversity, and inclusion efforts. The successful changes from UPAP can be made elsewhere, even in areas with limited racial/ethnic diversity. Utah as a whole, as well as the UPAP faculty, are majority non-URM; UPAP prioritizes the retention and recruitment of all faculty and has made the hiring of URM faculty a priority in its strategic plan. The model may be effective for medical schools as well as PA schools, and may be easier to implement in medical schools as there are fewer students per seat soliciting admission.²¹ The UPAP transformation may be duplicated in family medicine residencies and assist in increasing the diversity of the family medicine workforce.

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