

# The Impact of the COVID-19 Pandemic on Medical School Pathway Programs

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## Introduction

**Background:** A diverse physician workforce is associated with improved quality of care, increased access to health care services, and reduced health care disparities.<sup>1,2</sup> Long-term studies of diversity pathway (or pipeline) programs have shown success in increasing racial and ethnic minority representation in health professions.<sup>3</sup> In 2020, the coronavirus (COVID-19) pandemic created a mass disruption for programs across the country with schools adjusting from in-person schooling to a new online environment. The aim of this study is to investigate how pathway programs at medical schools have been impacted by COVID-19.

### Research Questions:

1. How have medical school diversity pathway programs been impacted by the COVID-19 pandemic?
2. What are some ways to sustain and support these programs during and after the pandemic?

## Methods

This cross-sectional mixed methods study was comprised of two phases.

- 12 semi-structured interviews of pathway program administrators and academic leaders, which identified themes and patterns of change
- Themes were used to inform creation of a survey that was administered to all U.S. allopathic and osteopathic medical schools
- Survey used an exploratory sequential design and included 13 questions that assessed respondent characteristics, as well as changes in program size, scope and funding.

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Table 1. Medical School Survey Respondent Characteristics

Characteristic	No. (%)		
	Invited (N = 198)	Participating (N = 112)	Response Rate (%)
<b>School Type</b>			
Allopathic (MD)	155 (78.3)	92 (82.1)	59.4
Osteopathic (DO)	43 (21.7)	20 (17.9)	46.5
<b>Region<sup>a</sup></b>			
Midwest	42 (21.1)	24 (21.4)	57.1
Northeast	43 (21.7)	21 (18.8)	48.8
South	75 (37.9)	40 (35.7)	53.3
West	34 (17.1)	24 (21.4)	70.6
Puerto Rico	4 (2.0)	3 (2.7)	75.0
<b>Ownership Status</b>			
Public	101 (51.0)	59 (52.7)	58.4
Private	97 (49.0)	53 (47.3)	54.6
<b>Institution Classification<sup>b,c</sup></b>			
R1 Doctoral Universities (15)	78 (39.2)	46 (41.1)	59.0
R2 Doctoral Universities (16)	31 (15.6)	15 (13.4)	48.4
R3 Doctoral Universities (17)	12 (6.0)	5 (4.5)	41.7
Medical Schools & Centers (25)	71 (35.9)	44 (39.3)	62.0
All others (18, 19, 21)	5 (2.5)	2 (1.8)	33.3
<b>Community-Based Status</b>			
Osteopathic	43 (21.7)	20 (17.9)	46.5
Allopathic – Community-Based	34 (17.2)	25 (22.3)	73.5
Allopathic – Non Community-Based	121 (61.1)	67 (59.8)	55.4
<b>Minority-Serving Institutions</b>			
HBCU	3 (1.5)	1 (0.9)	33.3
HSI	26 (13.1)	18 (16.1)	69.2
<b>Total</b>	<b>198 (100)</b>	<b>112 (100)</b>	<b>56.6</b>

<sup>a</sup>Region is based on Census Regions and Divisions of the United States<sup>25</sup>

<sup>b</sup>Institutional classification is based on the Carnegie Classification of Institutions of Higher Education, 2021<sup>26</sup>

<sup>c</sup>Excludes one School of Osteopathic Medicine that did not have a Carnegie Classification

Table 2. School Level and Programmatic Activities Offered Prior to and During the Pandemic

	No. (%)		
	Prior to the pandemic (n = 106)	During the pandemic (n = 106)	% change (p value) <sup>a</sup>
<b>Educational level</b>			
Elementary School	24 (22.6)	12 (11.3)	-50 (0.014)
Middle School	43 (40.6)	29 (27.4)	-32.6 (0.021)
High school	92 (86.8)	88 (83)	-4.3 (0.221)
Undergraduate	90 (84.9)	88 (83)	-2.2 (0.35)
Post-undergraduate	61 (57.5)	58 (54.7)	-4.9 (0.339)
<b>Program type</b>			
Academic support	93 (87.7)	91 (85.8)	-2.2 (0.342)
Test preparation	60 (56.6)	58 (54.7)	-3.3 (0.391)
Distance learning support	21 (19.8)	42 (39.6)	100 (<0.001)
Mentoring	100 (94.3)	100 (94.3)	0 (0.5)
Psychosocial support	69 (65.1)	71 (67)	4.4 (0.34)
Research experience	77 (72.6)	64 (60.4)	3 (0.029)
Shadowing or internships	85 (80.2)	37 (34.9)	-56.5 (<0.001)
Financial support	68 (64.2)	64 (60.4)	-5.9 (0.285)

Table 3. Respondent Perceptions of COVID-19 Pandemic Impact on Pathway Programs and Implications

Program Function	No. (%)		
	Negative Impact	No Effect	Positive Impact
Participant Recruitment	38 (35.8%)	44 (41.5%)	24 (22.6%)
Participant Engagement	56 (52.8%)	25 (23.6%)	25 (23.6%)
Participant Retention	27 (26.0%)	62 (59.6%)	15 (14.4%)
Social and Emotional Wellbeing	57 (55.3%)	28 (27.2%)	18 (17.5%)
Availability of Staff	26 (24.8%)	60 (57.1%)	19 (18.1%)
Availability of Volunteers	38 (36.5%)	56 (53.9%)	10 (9.6%)
Effectiveness of Learning	59 (56.7%)	27 (26.0%)	18 (17.3%)
Community Engagement	45 (42.9%)	42 (40.0%)	18 (17.1%)
Funding	16 (15.4%)	76 (73.1%)	12 (11.5%)
Tracking Outcomes	24 (22.9%)	68 (64.8%)	13 (12.4%)
<b>Opinions on future strategies</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>
There should be funding for psychosocial support	6 (5.7%)	8 (7.6%)	92 (86.8%)
There should be funding for distance learning	5 (4.7%)	8 (7.6%)	93 (87.7%)
Virtual recruitment is more effective than in-person	44 (41.5%)	44 (41.5%)	18 (17.0%)
Hybrid learning is more effective than in-person	24 (22.6%)	39 (36.8%)	43 (40.6%)
Institutions should de-emphasize extracurricular requirements	47 (44.8%)	29 (27.6%)	29 (27.6%)
<b>Funding changes</b>	<b>Decrease</b>	<b>No Change</b>	<b>Increase</b>
How did pathway program funding changes as a result of COVID-19	23 (21.7%)	71 (67.0%)	9 (8.5%)

## Results

Of the 198 schools invited to participate, 112 completed the survey for a response rate of 56.6% (Table 1). Of the 112 respondents, 42 reported canceling some or all of their pathway programs due to the COVID-19 pandemic (39.6%).

Elementary and middle school programs were both less common and more likely to be cancelled than high school and undergraduate programs (Table 2).

Shadowing and internship opportunities were significantly decreased, while distanced-learning support doubled (Table 2).

Respondents agreed that there should be increased funding for psychosocial support and distanced learning post-pandemic (Table 3).

## Discussion and Take-Away Points

- Medical school pathway programs were notably and negatively affected since the onset of the COVID-19 pandemic
- As programming changes most significantly affected younger students, these effects may take decades to be seen
- Decreases in shadowing opportunities and hands-on clinical experience may have an impact on medical school admissions
- Future research could investigate the impact of the pandemic on other health professions school types, changes to programming over time, or efficacy of different types of programming on increasing diversity in medical schools long-term.

### References:

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