

# Evaluating the Impact of Executive Orders Lifting Restrictions on Advanced Practice Registered Nurses During the COVID-19 Pandemic

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**Background:** In the early stages of the COVID-19 pandemic, strains on the healthcare system forced many U.S. states to revisit long-standing statutory limitations on the care coordinated by advanced practice registered nurses (APRNs). This was done by issuing waivers via executive, legislative, or board of nursing orders. **Purpose:** To identify the impact of temporary practice waivers on APRNs' direct patient care during the COVID-19 pandemic. **Methods:** This cross-sectional study utilized a two-phased approach. First, a confidential online survey was conducted of APRNs practicing across 27 U.S. states. Second, comprehensive APRN discipline data from 2019 to 2021 were retrieved from the National Council of State Boards of Nursing's Nursys database and reviewed. Univariable and multivariable binary logistic regression models were used to determine the significance of observed trends. **Results:** A total of 16,699 APRNs responded to the survey for a response rate of 14.2%. APRNs practicing in private outpatient clinics, in rural areas, and in health provider shortage areas were more likely to report a positive effect of the practice waiver (all  $p < .05$ ). Providers noted that the waivers allowed them more time with their current patients and expanded the geographic boundaries of their direct patient care to take on new patients. Furthermore, despite the changing profile of APRN care during the early stages of the pandemic, including a pronounced increase in telehealth usage, the current review found no evidence of an uptick in discipline cases brought against APRNs in 2021. **Conclusion:** Full practice authority for APRNs benefits patients by promoting expanded access to care and increasing the resiliency of our healthcare system without compromising patient safety. It is time for states and organizations that employ APRNs to recognize that permanently removing barriers to APRN practice is essential to the health of our nation.

*Keywords:* APRN, pandemic, COVID-19, full practice authority, practice waiver, collaborative practice agreement, telehealth, discipline, policy, rural, health provider shortage area

In the early stages of the COVID-19 pandemic, many U.S. states that had historically restricted the practice of advanced practice registered nurses (APRNs) chose to temporarily suspend collaborative practice agreement requirements either in part or in full. This was done by issuing waivers via executive, legislative, or board of nursing orders. Like these state-based supervisory arrangements, the lived reality of these waivers across impacted states largely remains unclear and likely inconsistent from one jurisdiction to another. For instance, limited evidence has emerged about how such waivers ultimately expanded patient access or affected financial requirements, how provisions influenced the extent and frequency of interprofessional collaboration, and how telehealth usage changed, if at all. In addition, how these changes impacted APRN discipline rates is unknown. To augment the literature on these important topics, the National Council of State Boards of Nursing (NCSBN) designed a cross-sectional study to

identify APRN practice trends across the United States during the COVID-19 pandemic.

## Background

APRNs have played an essential role in the management of the COVID-19 pandemic, providing direct and virtual patient care and improving health system agility through policy development, implementation, and staff education (Callan et al., 2021; Diez-Sampedro et al., 2020; Ladak et al., 2021; Schmitt et al., 2021). The ability of APRNs to provide care to the full extent of their education, training, and competence varies across U.S. jurisdictions because of restrictive state regulations and organizational barriers. For instance, while some APRNs have the ability to practice independently, others have limitations placed on their practice (Poghosyan, 2018; Schirle et al., 2020). Examples of these unnecessary regulatory barriers include collaborative (or supervisory) agree-

ments, geographic minimum distance requirements establishing proximity to a physician or physician group, and mandatory chart reviews by physicians (Martin & Alexander, 2019).

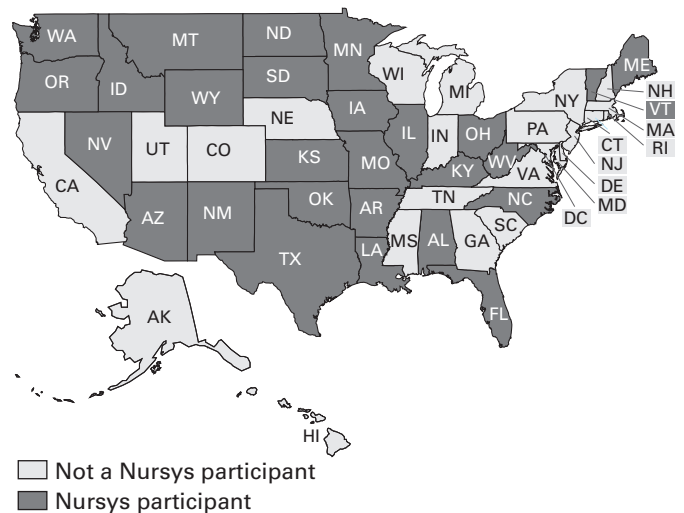
Regulatory challenges that were present prior to the pandemic became even more significant when the country needed a large number of providers to respond to the demands placed on the healthcare system by COVID-19 (Kleinpell et al., 2021). Research has consistently demonstrated that removing regulatory barriers to APRN practice increases the available nurse practitioner workforce (Kuo et al., 2013; Reagan & Salsberry, 2013; Xue et al., 2016), improves access to care (Neff et al., 2018; Traczynski & Udalova, 2018), increases healthcare utilization (Stange, 2014; Traczynski & Udalova, 2018), and provides economic benefits to states (Conover & Richards, 2015; Myers et al., 2020) without reducing quality of care (Fairman et al., 2011; Yang et al., 2016; Yang et al., 2021). In addition, APRNs provide care safely. Hudspeth (2007) surveyed state boards of nursing and found that APRNs have a low incidence of disciplinary action (0.005%) related to complaints of exceeding scope of practice, unprofessional conduct, endangering patient safety, abuse, and chemical impairment.

As the pandemic engulfed the United States, governors and state legislatures were forced to implement strategies to secure an available, active nursing workforce. Many governors issued executive orders that directly impacted APRNs by providing waivers for the temporary removal of regulatory requirements related to licensure and practice (Fotsch, 2020). For example, because testing sites closed, some states waived the requirement for APRNs to obtain national certification as a condition of licensure. Other states extended APRN licensure renewal periods and granted reciprocity to nurses from other states (NCSBN, 2020). Perhaps the most important waivers granted through executive action removed requirements related to physician supervision or collaboration, which allowed APRNs to practice and prescribe independently, thus removing barriers for these important care providers (NCSBN, 2022a).

By granting waivers to APRNs, governmental leaders acknowledged the enormous value of these providers in responding to the pandemic and the real-time repercussions of statutory limitations to their practice. Questions remain, however, as to the full impact of the temporary practice waivers on APRNs' direct patient care during the COVID-19 pandemic. In fact, only Massachusetts has codified its temporary COVID-19 waiver into law to date granting most APRNs full practice authority (FPA) (Mass. S.B. 2984, 2021). To address this gap in knowledge, the present study examines how waivers ultimately affected APRN practice (e.g., the extent and frequency of physician collaboration, telehealth usage, etc.), including whether there were any direct links of practice waivers to patient access to care, and whether the temporary removal of such restrictive regulations resulted in an uptick in APRN discipline rates.

FIGURE 1

## 2020 APRN Nursys Participation Status



## Methodology

### Sample

This cross-sectional study used a two-phased approach. The first phase comprised a survey of APRNs practicing across the United States. This confidential survey was designed to assess the extent to which temporary practice waivers during COVID-19 affected APRN practice and the resulting implications for patient access. The second phase of the study then linked these response trends with discipline data retrieved from NCSBN's Nursys database. Nursys is the only national database for verification of nurse licensure, discipline, and practice privileges for registered nurses (RNs) and licensed practical nurses/licensed vocational nurses. For both phases, we focused on APRNs in participating Nursys jurisdictions to ensure access to the most up-to-date contact and licensure information, as well as to establish a baseline understanding of disciplinary trends. In late 2020, a total of 27 states shared their APRN data through the Nursys database (Figure 1). Prior to outreach to APRNs practicing in these states, the study was reviewed and granted exempt status by the Western Institutional Review Board.

### Data Collection

The survey component of this study was initially fielded on December 8, 2020, with scheduled weekly reminders to non-responders running through January 11, 2021. The 42-item confidential online survey was administered using Qualtrics (Provo, UT). Questions were divided into three domains: (a) demographic and professional information, (b) practice, and (c) telehealth. Prior to final dissemination, the instrument was reviewed for face validity through coordination with experienced nurse regulators. These findings were then augmented with summary disciplinary trends, comparing the overall APRN discipline rate and breakdowns by

TABLE 1

**Descriptive Summary of Survey Respondents**

Respondent Characteristics	n (%)	Respondent Characteristics	n (%)
Age, y (N = 16,668)	50.0 (11.8)	Adult gerontology	2,107 (16.4%)
Experience, y (N = 16,692)	10.6 (8.5)	Psychiatric mental health	925 (7.2%)
Sex (N = 16,137)		Pediatrics	830 (6.5%)
Female	14,118 (87.5%)	Women's health/gender related	718 (5.6%)
Male	2,019 (12.5%)	Top 5 Clinical Practice Areas (N = 14,438)	
Race (N = 13,576)		Primary care	2,941 (20.4%)
White	11,701 (86.2%)	Anesthesia	1,715 (11.9%)
Black	787 (5.8%)	Emergency/urgent care	1,166 (8.1%)
Asian	426 (3.1%)	Women's health/gender related	785 (5.4%)
Mixed race	278 (2.1%)	Psychiatric mental health (adult)	721 (5.0%)
Native Hawaiian/Pacific Islander	29 (0.2%)	Primary Practice Setting (N = 14,354)	
Other	245 (1.8%)	Large hospital facility/system	3,512 (24.5%)
Ethnicity (N = 13,474)		Private practice (physician-run)	2,406 (16.8%)
Not Hispanic or Latino	12,899 (95.7%)	Community hospital	2,056 (14.3%)
Hispanic or Latino	575 (4.3%)	University-affiliated hospital facility/system	1,834 (12.8%)
Direct Patient Care (N = 16,572)		Private practice (APRN-run)	1,048 (7.3%)
Yes	14,602 (88.1%)	Long-term care	560 (3.9%)
No	1,970 (11.9%)	Other	2,938 (20.5%)
License Type (N = 16,695)		Practice Environment (N = 7,377)	
Certified nurse practitioner	13,376 (80.1%)	Inpatient	2,192 (29.7%)
Certified registered nurse anesthetist	2,147 (12.9%)	Outpatient	2,914 (39.5%)
Clinical nurse specialist	718 (4.3%)	Both	2,271 (30.8%)
Certified nurse midwife	454 (2.7%)	Geographic Setting (N = 13,700)	
Top 5 Population Foci (N = 12,813)		Rural	3,700 (27.0%)
Family/across lifespan	5,424 (42.3%)	Suburban	4,650 (33.9%)
		Urban	5,350 (39.1%)

Notes. APRN = advanced practice registered nurse. Valid N for each item varies based on observed nonresponse rates; all proportions are reported based on item-level valid N. Continuous variables (age, experience) are presented as means (SDs).

jurisdiction from 2019 through 2021. The analysis includes a baseline snapshot prior to the pandemic as well as 2 full years after the pandemic onset to determine the safety profile of APRNs adjusting their practice in light of the issuance of temporary waivers in many jurisdictions.

### Analysis

A descriptive summary of the sample includes counts and proportions for categorical variables, whereas continuous variables are expressed as means and standard deviations or medians and ranges/interquartile ranges (IQRs), as appropriate. A total of 16,699 APRNs from across 27 states participated in the survey for a final response rate of 14.2%. Assuming that nonresponse is random, at the 95% confidence level, the maximum margin of error for the findings from these respondents is  $\pm 0.8\%$ .<sup>\*</sup> For the

analysis, univariable and multivariable binary logistic regression models were used to assess the impact of the temporary practice waivers. The primary dependent variable (waiver impact) for the study was dichotomized as a general yes/no outcome. A stepwise approach was used to identify issues of multicollinearity between potential predictors in a multivariable model setting. Specifically, practice environment, APRN private practice, provider shortage area, geographic setting, and the various measures aligned with telehealth practice all overlapped substantially. The final composition of the multivariable model was determined to achieve the most parsimonious and informative combination of available characteristics across all domains. Pre- and postpandemic disciplinary trends are presented graphically. All analyses were run using SAS 9.4 (Cary, NC).

<sup>\*</sup> The margin of error (MOE) can be calculated with the following formula:  $MOE = Z \times \sqrt{p \times (1-p)/n}$

## Results

Respondents were a mean age of 50 years (*SD*, 11.8; *n* = 16,668) and had approximately 11 years of work experience (*SD*, 8.5 years; *n* = 16,692) as an APRN (Table 1). The majority of APRNs self-identified as female (*n* = 14,118, 87.5%), White (*n* = 11,701, 86.2%), and non-Hispanic or Latino (*n* = 12,899, 95.7%). Nearly nine out of 10 respondents indicated they provide direct patient care (*n* = 14,602, 88.1%). Of this subset, most (*n* = 13,376, 80.1%) were educated and trained as certified nurse practitioners whose population foci included either “family/across the lifespan” (*n* = 5,424, 42.3%) or “adult gerontology” (*n* = 2,107, 16.4%). Primary care (*n* = 2,941, 20.4%) was the top clinical practice area reported. A plurality of study participants identified a large hospital facility/system (*n* = 3,512, 24.5%) or university-affiliated hospital facility/system (*n* = 1,834, 12.8%) as their primary practice setting, but a notable proportion also worked in private practice—either a physician- or APRN-run practice (*n* = 3,454, 24.1%). Roughly equal proportions of respondents worked in rural (*n* = 3,700, 27.0%), suburban (*n* = 4,650, 33.9%), and urban (*n* = 5,350, 39.1%) areas.

Approximately two-thirds of respondents (*n* = 11,384, 68.2%) resided in a state that explicitly restricted some level of APRN practice prior to the onset of the pandemic in the United States (Table 2). Accordingly, 66.0% of APRNs (*n* = 8,938) providing direct patient care indicated they practiced under at least one collaborative practice agreement (*n* = 8,359, *Mdn*: 1, range: 1–82) with a median of one supervising physician (*n* = 8,359, range: 1–100). In total, though, 14.2% (*n* = 1,266) of respondents who reported at least one collaborative practice agreement hailed from one of the 12 FPA jurisdictions in the sample, underscoring the role of employer-based restrictions. The top three characteristics APRNs identified as most restrictive were the requirement for a supervising physician signature/co-signature (*n* = 2,144, 54.5%), limited prescribing privileges (*n* = 1,851, 47.1%), and mandated chart reviews (*n* = 1,700, 43.2%). Minimum distance requirements from their supervising physician (*n* = 705, 17.9%) did not emerge as a major obstacle, given that two-thirds of respondents worked either in the same office/clinic (*n* = 3,012, 37.7%) or facility (*n* = 2,412, 30.2%). For half of respondents (*n* = 3,723, 49.8%), their employer arranged their collaborative practice agreement. The median fee for establishing a collaborative practice agreement was \$150 (*n* = 7,224, *IQR*: \$100–\$1,000) and the median annual fee to maintain it was \$175 (*n* = 7,186, *IQR*: \$100–\$3,000).

Approximately two in five APRNs (*n* = 3,220, 38.5%) who indicated they had at least one collaborative practice agreement also reported there was an executive order or legislative/regulatory action that waived certain restrictions in their state during the early stages of the pandemic. Of that subset, a similar proportion (*n* = 1,240, 38.7%) indicated the waiver had an impact of their direct patient care. For these respondents, the primary benefits of having these restrictions lifted related to patient access and care, including the ability to spend more time with their patients

TABLE 2

### Collaborative Practice Agreement (CPA) Details Before COVID-19

CPA Details	<i>n</i> (%)
State-Level Restrictions ( <i>N</i> = 16,699)	
Full practice authority	5,315 (31.8%)
Restricted	11,384 (68.2%)
Reported at Least One CPA ( <i>N</i> = 13,551)	
Yes	8,938 (66.0%)
No	4,613 (34.0%)
Number of CPAs, <i>Mdn</i> (range) ( <i>N</i> = 8,359)	1 (1–82)
Number of CPA Physicians, <i>Mdn</i> (range) ( <i>N</i> = 8,359)	1 (1–100)
Restrictive CPA Elements ( <i>N</i> = 3,934)	
Supervising physician signature/co-signature requirement	2,144 (54.5%)
Prescribing restrictions	1,851 (47.1%)
Mandated chart reviews	1,700 (43.2%)
Home health approval restrictions	1,412 (35.9%)
Restricted hospital admitting privileges	1,408 (35.8%)
Finding a supervising physician	1,380 (35.1%)
Replacing a supervising physician, if lost	1,358 (34.5%)
Billing under physician NPI	1,230 (31.3%)
Practice restrictions due to background of supervising physician	1,001 (25.4%)
Associated fees	741 (18.8%)
Minimum distance requirements with supervising physician	705 (17.9%)
Malpractice insurance requirements	418 (10.6%)
Other	355 (0.09%)
Proximity to Supervising Provider ( <i>N</i> = 7,990)	
Located in the same office/clinic	3,012 (37.7%)
Located in the same facility	2,412 (30.2%)
Located in the same city/town	1,650 (20.7%)
Other	916 (11.5%)
Typical Length to Arrange CPA ( <i>N</i> = 7,470)	
A week or less	1,626 (21.8%)
A few weeks to a month	1,236 (16.5%)
A few months	676 (9.1%)
Greater than 6 months	209 (2.8%)
No time, taken care of by my employment setting	3,723 (49.8%)
Fee to Establish ( <i>N</i> = 7,224)	
Yes	1,014 (14.0%)
No	6,210 (86.0%)
Fee to Maintain ( <i>N</i> = 7,186)	
Yes	824 (11.5%)
No	6,362 (88.5%)

Notes. NPI = National Provider ID. Data presented as *n* (%) unless otherwise noted. Valid *N* for each item varies based on observed nonresponse rates; all proportions are reported based on item-level valid *N*. Continuous variables expressed as median (range).

TABLE 3

**Univariable and Multivariable Models Examining Waiver Impact**

Case Characteristics	Impact of Temporary Practice Waiver			
	OR (95% CI)	<i>p</i>	AOR (95% CI)	<i>p</i>
Age (Unit = 1)	1.00 (0.99–1.01)	.98	-	
Ethnicity (Ref = Not Hispanic or Latino)	1.55 (1.05–2.28)	.03	1.58 (1.05–2.37)	.03
Race		.22		
White (Ref)	-			
Black	1.12 (0.85–1.48)	.42		
Asian	1.45 (0.91–2.32)	.12		
Mixed Race	1.47 (0.88–2.46)	.15		
Native Hawaiian/Pacific Islander	1.22 (0.27–5.46)	.80		
Other	0.71 (0.38–1.34)	.29		
Experience (Unit = 1)	0.99 (0.98–1.00)	.21		
License Type		.047		.81
CNP (Ref)	-		-	
CRNA	0.72 (0.55–0.94)	.01	0.93 (0.47–1.84)	.84
CNS	0.89 (0.56–1.41)	.61	0.79 (0.48–1.28)	.34
CNM	0.68 (0.40–1.16)	.15	1.05 (0.54–2.03)	.90
Top 5 Clinical Practice Areas		<.001		.004
Primary care	1.51 (1.27–1.79)	<.001	1.19 (0.98–1.44)	.08
Anesthesia	0.79 (0.60–1.05)	.11	1.38 (0.69–2.76)	.36
Emergency/urgent care	0.64 (0.47–0.86)	.003	0.71 (0.51–0.97)	.03
Women’s health/gender related	0.59 (0.40–0.85)	.004	0.55 (0.35–0.88)	.01
Psychiatric mental health (adult)	1.20 (0.86–1.69)	.29	1.03 (0.72–1.47)	.86
Other (Ref)	-		-	
Practice Environment		<.001		
Inpatient (Ref)	-			
Outpatient	1.81 (1.39–2.35)	<.001		
Both	1.38 (1.03–1.85)	.03		
Provider Shortage Area (Ref = No)	1.33 (1.00–1.77)	.05		
APRN Private Practice (Ref = No)	1.74 (1.33–2.28)	<.001	1.45 (1.09–1.93)	.01
Geographic Setting		<.001		.01
Rural	1.45 (1.21–1.73)	<.001	1.31 (1.08–1.59)	.01
Suburban	1.10 (0.93–1.30)	.27	1.04 (0.87–1.25)	.65
Urban (Ref)	-		-	
Telehealth Practice (Ref = No)	2.26 (1.91–2.68)	<.001	2.22 (1.82–2.71)	<.001
Cross Border Telehealth Practice (Ref = No)	1.47 (1.20–1.80)	<.001		
Restricted Telehealth Practice (Ref = No)	2.19 (1.82–2.64)	<.001		

Notes. AOR = adjusted odds ratio; APRN = advanced practice registered nurse; CNM = certified nurse-midwife; CNP = certified nurse practitioner; CNS = clinical nurse specialist; CRNA = certified registered nurse anesthetist; Ref = reference.

( $n = 415$ , 34.0%), expand the geographic boundaries of their direct patient care ( $n = 335$ , 27.4%), and take on new patients ( $n = 317$ , 26.0%). Ancillary administrative benefits included less frequent unnecessary communication with their supervising physician ( $n = 290$ , 23.8%) and fewer chart reviews ( $n = 239$ , 19.6%).

The independent associations between nurse characteristics (e.g., demographics, practice profile, etc.) and the odds of the temporary waiver having a positive impact on their direct patient care

were initially the focus of the analysis (Table 3). Overall, APRNs who self-identified as Hispanic or Latino were about 55% more likely (OR, 1.55; 95% CI, 1.05–2.28) to report that the waiver in their state had an impact on the care they provided to patients ( $p = .03$ ). Compared to certified nurse practitioners, certified registered nurse anesthetists were 28% less likely to report an impact (OR, 0.72; 95% CI, 0.55–0.94,  $p = .01$ ). Similarly, APRNs who reported primary care (v. “other,” OR, 1.51; 95% CI, 1.27–1.79)

as their clinical practice area were 51% more likely to report a waiver impact compared to their colleagues working in other settings, while those who indicated emergency/urgent care (*OR*, 0.64; 95% *CI*, 0.47–0.86) or women’s health/gender-related care (*OR*, 0.59; 95% *CI*, 0.40–0.85) were around 40% less likely to report an impact (all  $p < .01$ ).

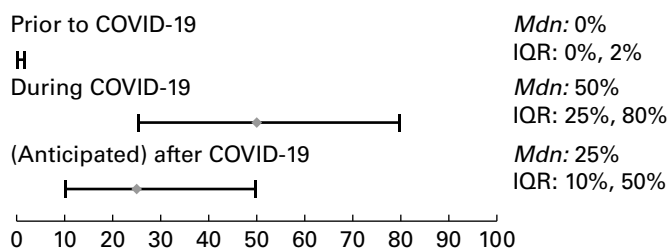
Practice environment also mattered, with APRN respondents working in outpatient (*OR*, 1.81; 95% *CI*, 1.39–2.35;  $p < .001$ ) or hybrid (*OR*, 1.38; 95% *CI*, 1.03–1.85;  $p = .03$ ) settings reporting between 38% and 81% greater impact compared to their inpatient counterparts. Similarly, study participants who worked in APRN-run private clinics were also 74% more likely (*OR*, 1.74; 95% *CI*, 1.33–2.28;  $p < .001$ ) to report a positive effect of the waiver. Rural providers likewise reported a more pronounced effect of the waiver (*OR*, 1.45; 95% *CI*: 1.21–1.73;  $p < .001$ ), as did those in healthcare provider shortage areas (*OR*, 1.33; 95% *CI*, 1.00–1.77;  $p = .05$ ).

One area with the most pronounced waiver impact was care provided via telehealth. Telehealth providers generally reported a positive effect of the waivers in their states (*OR*, 2.26; 95% *CI*, 1.91–2.68;  $p < .001$ ), which was sustained when practicing telehealth across state borders (*OR*, 1.47; 95% *CI* 1.20–1.80;  $p < .001$ ) and, in particular, when aspects of their collaborative practice agreements had restricted their direct patient care provided via telehealth prior to the pandemic (*OR*, 2.19; 95% *CI*, 1.82–2.64;  $p < .001$ ). This paralleled a significant shift toward direct patient care delivered via telehealth, with APRNs reporting a median increase of 50% (IQR, 25%–80%) in telehealth care shortly after the onset of the pandemic and anticipation of a sustained 25% increase thereafter (IQR, 10%–50%) (all  $p < .01$ , Figure 2).

Most of the positive effects of the state-based waivers were sustained on multivariable analysis after further adjustments for other important covariates (Table 3). Controlling for license type, clinical practice area, APRN private practice designation, geographic setting, and telehealth practice, APRNs who self-identified as Hispanic or Latino were still 58% more likely (*AOR*, 1.58; 95% *CI*, 1.05–2.37) to report that the waiver in their state had an impact on their care ( $p = .03$ ). After similar adjustments, APRNs who reported emergency/urgent care (*AOR*, 0.71; 95% *CI*, 0.51–0.97) or women’s health/gender-related care (*AOR*, 0.55; 95% *CI*, 0.35–0.88) as their clinical practice area remained less likely to report an impact (both  $p < .05$ ). Study participants who worked in APRN-run private clinics were 45% more likely (*AOR*, 1.45; 95% *CI*, 1.09–1.93;  $p = .01$ ) to report a positive effect of the waiver after adjustments for ethnicity, license type, clinical practice area, geographic setting, and telehealth practice. The positive effects of the waivers were also retained for rural providers (*AOR*, 1.31; 95% *CI*, 1.08–1.59;  $p = .01$ ) and those practicing telehealth (*AOR*, 2.22; 95% *CI*, 1.82–2.71;  $p < .001$ ).

FIGURE 2

### Current and Anticipated APRN Telehealth Usage



Note. APRN = advanced practice registered nurse; IQR = interquartile range.

### Discipline Trends

Despite evidence supporting the widespread significant and positive effects of the temporary practice waivers, discipline trends largely remained unchanged. Overall, APRN discipline rates nationally have historically been low and remain low before and after the onset of the COVID-19 pandemic at approximately 0.1% (2019–2021). Through active monitoring of executive orders and legislative/regulatory actions across the United States during the early stages of the pandemic, researchers at NCSBN identified four of the 27 states included in the survey sample as particularly compelling examples of the safety of APRN practice during this period. Kentucky, Louisiana, Maine, and West Virginia are all examples of locales in which significant pre-pandemic restrictions were temporarily waived, thus providing insight into the safety of expanded APRN practice under temporary full-practice conditions. Even in these jurisdictions, the 2019–2021 disciplinary case review showed a consistently low number of APRNs disciplined (Figure 3).

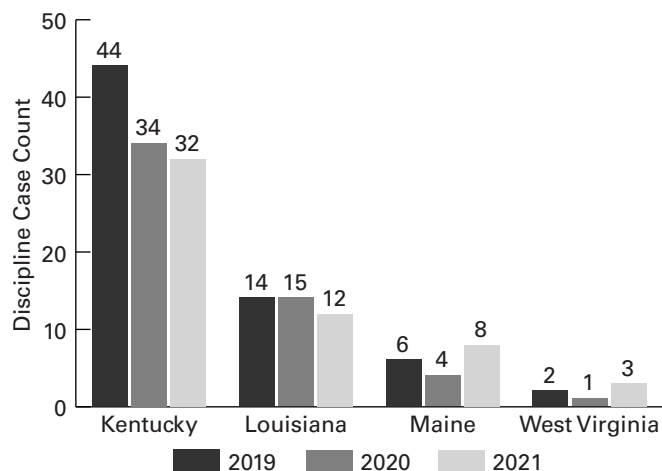
The total number of APRN discipline cases reported to Nursys decreased from 66 in 2019 to 55 in 2021 across these four states despite the total number of APRN licenses increasing 20% (from 31,009 to 37,148) during the same period (Figure 4). Overall, APRN discipline rates remained around 0.2% in this four-state subset throughout the analysis window. Importantly, this trend held for disciplinary cases involving more serious infractions as well. The incidence of “Error in prescribing, dispensing or administering medicine or sedation” (28 in 2019, 26 in 2020, and 16 in 2021), “Unauthorized prescription of medication” (22 in 2019 and 2020, and 15 in 2021), and “Practice beyond the scope of practice” (3 in 2019, 5 in 2020, and 3 in 2021) remained consistently and comparably low during the 3-year period.

### Discussion

During the early stages of the pandemic, governmental leaders acknowledged the enormous value of APRN-coordinated care and thus sought to temporarily waive long-standing statutory limitations on their practice (Kleinpell et al., 2021). As a result, APRNs

FIGURE 3

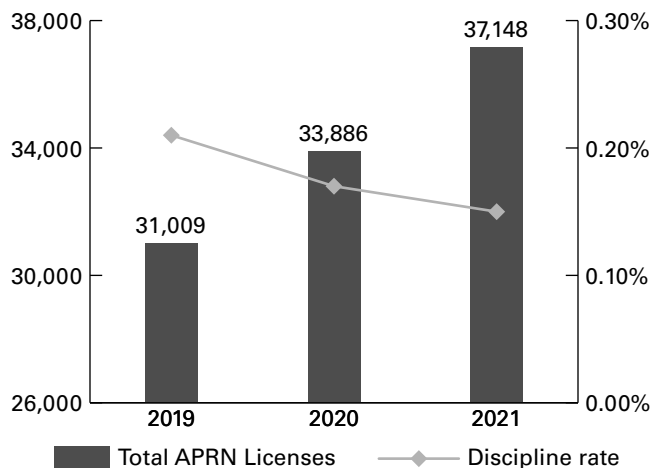
**Number of APRN Discipline Cases Reported by Four BONs, 2019–2021**



Note. APRN = advanced practice registered nurse; BON = board of nursing.

FIGURE 4

**Discipline Rates and the Number of APRN Licenses Reported by Four BONs, 2019–2021**



Note. APRN = advanced practice registered nurse; BON = board of nursing.

have played an essential role in the management of the COVID-19 pandemic by providing direct patient care and improving health system resilience (Callan et al., 2021; Diez-Sampedro et al., 2020; Ladak et al., 2021; Schmitt et al., 2021). COVID-19 has had profound and unprecedented effects on APRN-coordinated care across the United States. Most respondents to this survey indicated that COVID-19 affected their direct patient care, with a plurality indicating they changed positions or volunteered in a new practice setting or clinical practice specialty area to treat COVID-19 patients. Even among those not providing direct patient care ( $n = 1,970$ ),

sizable proportions indicated they were either laid off or furloughed due to the pandemic ( $n = 459$ , 23.3%) or retired or otherwise left their employment because of COVID-19 ( $n = 213$  of 1,438 who were not let go, 14.8%). Despite the widespread use of temporary practice waivers, only Massachusetts has codified its temporary COVID-19 waiver into law (Mass. S.B. 2984, 2021). The results of this study attest to the safety and effectiveness of these state-based actions and, thereby, support further efforts to make permanent these long-overdue regulatory updates.

Research has consistently demonstrated that removing regulatory barriers to APRN practice improves access to care (Neff et al., 2018; Traczynski & Udalova, 2018) and increases healthcare utilization (Stange, 2014; Traczynski & Udalova, 2018) without decreasing quality (Fairman et al., 2011; Yang et al., 2016; Yang et al., 2021). In this large cross-sectional study, approximately two in five APRNs who had at least one collaborative practice agreement prior to the pandemic indicated the waiver had a positive impact on their direct patient care. The primary beneficiaries of these policies were often patients in traditionally underserved and remote locales. Specifically, APRNs practicing in private outpatient clinics in rural areas and health provider shortage areas (U.S. Department of Health & Human Services, 2021) were more likely to report positive effects of the practice waiver.

As a result of removing the unnecessary administrative burdens of their prior supervisory arrangements, APRNs reported being able to spend more time with their patients, expand the geographic boundaries of their direct patient care, and take on new patients. Among providers who indicated they were able to expand the geographic boundaries of their practice ( $n = 323$ ), there was a distributional shift of 27% of their care being provided in rural areas before the pandemic to 36% after the issuance of the waiver. Nonetheless, for a small proportion of respondents, unchanged private employer requirements likely blunted the impact of these state-based waivers. Overall, nearly 80% of APRNs who indicated little to no waiver impact on their direct patient care (1,543 of 1,947) cited persistent work-based restrictions. Of note, employer restrictions were not isolated to restricted practice states, with respondents across all 27 states in the sample citing such obstacles during the early stages of the pandemic.

Furthermore, despite the changing profile of APRN care during the early stages of the pandemic, the current review found no evidence to support an uptick in discipline cases brought against APRNs. While long-standing evidence attests to the efficacy and safety of APRN care (Hudspeth, 2007; Upin, 2020), concern over patient safety in the context of FPA for APRNs has long been provided as the rationale for keeping outdated and overly restrictive supervisory regulations in place. The findings of this study indicate that the emergency waivers issued in the early stages of the COVID-19 pandemic did not result in increasing disciplinary action against APRNs, even in those jurisdictions that were among the most restrictive in the country prior to the pandemic. By contrast, the Nursys discipline case review confirmed that the

reported types of violations potentially related to the issuance of APRN waivers in Kentucky, Louisiana, Maine, and West Virginia remained consistently low and even decreased from 2019 to 2021. For example, the number of disciplinary cases regarding “Error in Prescribing, Dispensing or Administering Medicine or Sedation” and “Unauthorized prescription of medication” fell in the 3-year period. Critically, the incidence of discipline related to “Practice beyond the scope of practice” also remained consistently low.

In line with extensive literature on the topic (Dhaliwal et al., 2022; Samson et al., 2021; Spaulding & Smith, 2021), the findings from the present study also support evidence of the growing trend toward increased telehealth usage. Respondents to our survey documented a dramatic shift toward direct patient care delivered via telehealth, with APRNs reporting a median increase of 50% (IQR: 25%–80%, up from a median of 0% prior to the pandemic) telehealth-delivered care shortly after the onset of the pandemic. Furthermore, they were bullish on the durability of this trend based on their reported anticipation of a sustained 25% increase moving forward (IQR, 10%–50%). These dramatic shifts consistently aligned with reports of the significant and positive effects of the temporary waivers, in particular among those who practice telehealth across state lines and reported restrictions on their direct patient care delivered via telehealth prior to the pandemic. Those positive telehealth trends notwithstanding, respondents reported significant barriers to telehealth delivery. For a clear majority, these concerns related to barriers patients frequently encountered. A majority of APRNs who identified barriers to telehealth expansion ( $n = 7,049$ ) indicated that their patients often lacked access to needed technology ( $n = 4,448$ , 63.1%) or had significant technology support problems ( $n = 3,994$ , 56.7%). Just over one-third ( $n = 2,509$ , 35.6%) of respondents also reported patient apprehension with adopting and utilizing new technologies.

### Limitations

There are several limitations to the current analysis that bear further consideration. First and foremost, despite the large and geographically diverse respondent pool, the 14.2% response rate and 27-state sample may limit our ability to extrapolate these findings to all APRNs practicing across the United States. Furthermore, at the time of the survey, 12 of the 27 states in our sample had authorized FPA, including prescribing privileges, for all four APRN roles, and not all jurisdictions with waivers were included due to our sampling methodology; thus, if anything, the findings may underreport the true positive effects of the temporary waivers on APRN practice and their direct link to increased patient access. Nonetheless, practice restrictions can often manifest at the employer level, regardless of state-level policy, as is evident from our sample in which at least some respondents across all 12 FPA states reported at least one CPA prior to the pandemic. At the time of this report, 14 of the 27 states have now granted FPA for all four APRN roles, indicating further progress on this issue (NCSBN, 2022b). In addition, COVID-19 emergency waivers issued in early

2020 varied both in terms of their reach and timing, and this variability and the resulting durability of the observed trends reported in this analysis were difficult to capture in the modeling. Finally, the trends documented in this study are correlational and do not support causal inference.

### Conclusion

APRNs played a critical role in expanding access to high-quality patient care during the early stages of the pandemic. In the United States, COVID-19 forced governmental leaders to revisit long-standing statutory limitations on APRN practice. Because of temporary practice waivers, patient access in rural and traditionally underserved areas expanded, providers were able to accommodate higher patient volumes, and telehealth boomed. While challenges inevitably emerged, including unchanged private employer requirements that blunted the impact of state-based waivers and lagging technological support to sustain remote care, the results of this study are clear. Temporary practice waivers often freed APRNs to practice to the full extent of their education and training while not exceeding their scope of practice or otherwise jeopardizing patient safety. It is time for states and organizations that employ APRNs to recognize that permanently removing barriers to APRN practice is essential to the health of our nation (O’Reilly-Jacob et al., 2022; Poghosyan et al., 2022). FPA for APRNs benefits patients by promoting expanded access and increasing the resiliency of our healthcare system without compromising patient safety.

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