2021 NCSBN Scientific Symposium - Scope-of-Practice Regulation and Nurse Practitioners as Usual Source of Care Providers Video Transcript

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Presenter
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- [Female] Ying Xue is an associate professor and holds the Loretta C. Ford Endowed Professorship in Primary Care Nursing at the University of Rochester. Her research aims to develop empirical evidence to guide national policies to optimize the nursing workforce and to improve health care delivery and outcomes. Currently, Dr.

Xue's research focuses on the role of nurse practitioners in improving access to primary care, especially for vulnerable populations.

- [Dr. Xue] Hello, my name is Ying Xue, associate professor and the Loretta Ford Endowed Professorship in Primary Care Nursing at the University of Rochester School of Nursing. My presentation topic is Scope-of-Practice Regulation and Nurse Practitioners as Usual Source of Care Providers.

Improving access to care is a top priority of the national and state health care agenda. Several trends suggest that the nurse practitioner workforce has untapped potential to expand the healthcare capacity to increase access to care. First, the NP workforce has grown significantly over the past decade. From 2010 to 2016, the average annual growth rate was 9.4%.

As of 2020, more than 290,000 NPs were licensed in the U.S., and 69% delivered primary care. Second, the growth of NP workforce is evident in all space, indicating the expanding reach of NPs in the healthcare system.

Third, NP supply has increased substantially in rural and the low-income areas, exerting an increasingly important role in addressing the critical demand for access to care where the need is the greatest. Fourth, extensive evidence has shown that NPs demonstrate clinical performance comparable with primary care

physicians with regard to process of care, reduction of symptoms, improvement in health and functional status, and decrease in mortality.

In addition, studies have reported higher patient satisfaction among patients seen by NPs than those seen by primary care physicians. NPs can improve access to care through two avenues. One, is a complementary or supplemental role, in which they perform tasks delegated by physicians.

Through teamwork with physicians, they expand the capacity and increase efficiency of healthcare delivery. The other is a substitution role, in which they serve as a usual source of care provider as an alternative to physicians.

In this role, NPs have primary responsibility for their patients, though they may consult with and refer patients to physicians. NP practice is governed by state-level scope-of-practice regulation, which varies across states. According to the classification by the American Association of Nurse Practitioner, there are three types of scope-of-practice regulation, full scope-of-practice, reduced, and restricted scope-of-practice regulation.

This map shows 2021 state NP practice environment. State with full scope-of-practice regulation, which are in green color, permit all NPs to evaluate patients, diagnose, order, and interpret diagnostic test, and initiate and manage treatments, including prescribing medications and control the substance under the exclusive licensure authority of the state boards of nursing.

While states have reduced or restricted scope-of-practice regulation, which are in yellow or red color, reduce or restrict the ability of NPs to engage in at least one element of NP practice.

Currently, 23 states and D.C. have full scope-of-practice regulation. Sixteen states have reduced scope-of-practice regulation, and 11 states have a restricted scope-of-practice regulation. The extent to which NPs serve in substitution role as a usual source of care provider nationally and whether this is associated with state scope-of-practice regulation is not well understood.

So far, most of the studies have used the insurance claims data to examine NPs as primary care providers. However, because NP surveys can be built using a collaborating physicians identifier, in some circumstance, claims data do not consistently identify NP care.

Two recent studies used patient survey data or patient electronic medical records. However, they either did not provide a separate estimate for NP care, or the study setting had limited generalizability.

Therefore, the objective of this study were to provide an estimate of NP as usual source of care providers, and to examine their relationship with state scope-of-practice regulations. We performed retrospective analysis on a sample of U.S. adults from 2010 to 2016. The dataset included restricted version full-year consolidated household component data of the Medical Expenditure Panel Survey, which was more to replace the data from the Area Health Resources File, National Provider Identifier registry, and the state NP practice environment data.

The usual source of care provider was determined from the MEPS adult sample for those who had the usual source of care and identified the type of usual source of care as a person or person-in-facility. This measure exclude individual who report their primary source of care is a hospital emergency room.

And is the most common measure of access to care in the literature. NP as a usual source of care provider was identified by respondents' reporting an NP as their usual source of care provider.

Based on Aday and Anderson's framework for the study of access to medical care, we included the following covariates in the model, county-level primary care NP supply, primary care physician supply, physician assistant supply. Individual-level demographic variables.

Health insurance coverage, perceived physical and mental health status. The geographic location of respondents, including U.S. census region and the metropolitan status of the county location of residence. In the analysis, we applied individual-level sample weight, and accounted for the sample design. We calculated estimates of the number and the proportion of adults whose usual source of care was an NP.

We further examined the trends of NP as a usual source of care provider overall and by state scope-of-practice regulation. To examine the relationship between NP as a usual source of care provider and state scope-of-practice regulation while controlling for covariates, we used the pooled seven years of data due to the small sample size of adults who had an NP as their usual source of care provider in each year.

We performed a multi-level survey analysis using a generalized linear mixed model. The data have a three-level hierarchical structure, state, county, and individual. In divided three-level model, we applied intercept random effects and unstructured covariance structure.

Analysis were performed using SAS Version 9.4. Study results. From 2010 to 2016, 7 states, including Connecticut, Maryland, Minnesota, Nebraska, Nevada, North Dakota, and Vermont, changed their scope-of-practice regulation, all from reduced scope of practice to full scope of practice.

At the end year of our study period, 2016, 21 states and D.C. had the full scope-of-practice regulation, 17 states had reduced scope-of-practice regulation, and 12 states had a restricted scope-of-practice regulation. The majority of states with reduced or restricted scope-of-practice regulation were in the Midwest or South.

This figure present the trends in the weighted estimate of the proportion of adults whose usuals source of care provider was an NP nationally and by state NP regulation from 2010 to 2016. Nationally, this proportion increased from 1.65% in 2010 to 2.79% in 2016. In state with full scope-of-practice regulation, this proportion increased from 2.48% to 5.91%.

And the proportions rose from 2.14% to 2.87% in state with reduced scope-of-practice regulation. And from 0.92% to 1.68% in states with restricted scope-of-practice regulation.

This table shows the characteristic of the sample whose usual source of care provider was an NP overall and by state NP scope-of-practice regulation. The pooled data included a sample of 1,134 adults

respondents with an NP as their usual source of care provider, representing a national estimate of almost 40 million adults.

This sample was similar across states with different scope-of-practice regulations with regard to age, sex, marital status, and perceived physical health status. The mean age was around 49 years old.

About one third was male, 50% were married, and over 70% perceived their physical health as good to excellent. There were difference across the scope-of-practice categories in race/ethnicity, education, health insurance coverage, perceived mental health status, residential location in non-metropolitan area and region.

About 80% of the sample in states with full scope of practice was non-Hispanic white, compared to 74% in states with reduced scope of practice, and 65% in states with restricted scope of practice. About 48% of the sample in states with full scope of practice and in states with restricted scope of practice had education higher than high school as compared to 35% in states with reduced scope of practice.

The majority of the sample had private health insurance. The proportion of uninsured was the highest in states with reduced scope of practice, followed by states with restricted scope of practice and states with full scope of practice. About 20% of the sample perceived their mental health status as fair or poor in states with full scope of practice, compared with 15% in states with reduced scope of practice, and 11% in states with restricted scope of practice.

The proportion of non-metropolitan residents was the highest in states with reduced scope of practice, followed by states with full scope of practice and state with restricted scope of practice. The majority of the sample in states with full scope of practice were from the West, and the majority of the sample in states with reduced scope of practice or restricted scope of practice were from the South.

Controlling for the covariates, divided three-level model shows the hours of having an NP as usual source of care provider were significantly less in states with restricted scope of practice than in states with full scope of practice. However, the hours in states with reduced scope of practice were not statistically different from that in states with full scope of practice.

County-level NP supply was statistical [inaudible] greater hours of having an NP as usual source of care provider. Other covariates that was [inaudible] greater hours of having an NP as usual source of care provider include age, gender, and the perceived physical health status as fair or poor versus excellent.

Respondents' hours of having an NP as usual source of care provider was 0.98 for 1-year increase in age, and was also lower for men. The hours of having an NP as usual source of care provider were higher among responders who perceive their health status as fair or poor versus excellent.

Discussion. Our analysis showed that 2.79% of adults in the U.S. reported an NP as usual source of care provider in 2016, which increased from 1.65% from 2010. This percentage varied by state scope-of-practice regulation.

The increase in having an NP as usual source of care provider, though moderate, may be helping to address the growing demand for primary care and to expand access to care. Primary evidence indicate

that process in states with full scope-of-practice regulation had lower hours of extended travel time longer than 30 minutes to a primary care provider than those in states with restricted scope-of-practice regulation.

Despite the growth of NP care, the national average of the percentage of adults who had NP as their usual source of care provider was small, indicating majority of NPs practice in collaborative or supplemental role. Adults cared for by NP were often on public insurance, uninsured, or resided in non-metropolitan areas.

Our previous work indicate that NP supply was higher and grew faster in low-income and rural areas, where primary care physician supply was low.

Our findings about usual source of care suggest that NPs may serve as substitutes for physicians in area with a higher proportion of vulnerable populations. We found the odds of having an NP as usual source of care provider in states with restricted scope-of-practice regulation was 87% lower than in states with full scope-of-practice regulation.

There are several explanations. First, evidence indicate that scope-of-practice regulation may be associated with organizational hiring practice for NPs. Rural hospitals located in states granting prescriptive authority to NPs were more likely than rural hospital in states without this authority to establish a provider-based rural health clinic designed to stimulate the use of NPs and the PAs to improve access to primary care in underserved rural areas.

Community health centers and the primary care clinics were also more likely to hire and use NPs in states with full scope-of-practice regulation. Second, state scope-of-practice regulation have been shown to be associated with the role of NP in care delivery.

NP were more likely to have their own patient panel in states with full scope-of-practice regulation than in states with reduced or restricted regulation. Third, restricted scope-of-practice regulation require physician supervision, which might limit how and where NPs can practice, as they depend on the availability of physicians.

The study also find that higher county-level NP supply, independent of state scope-of-practice regulation, was associated with greater likelihood of having an NP as usual source of care provider. To our knowledge, this is the first study to provide empirical evidence on the association between NP supply and NPs as a usual source of care provider.

These findings support the notion that higher NP supply expand access to care. As discussed previously, NP appear to be more likely serve in a substitution role in area with a higher proportion of vulnerable populations, which suggests that they play an important role in reducing the disparities in access to care.

The study has several limitations. First, the MEPS is a self-reported survey, response to survey question regarding the type of usual source of care provider might not be accurate. Patients might misperceive an NP as a physician, and thus the number of adults having an NP as usual source of care provider could be underestimated.

Second, due to the small sample size of adults with an NP as their usual source of care provider in each study year, we were now able to analyze the multiple-year data using a time series approach, therefore capturing changes in scope-of-practice regulation over time, which would have permitted a stronger causal inference of the relationship between scope-of-practice regulation and the likelihood of having an NP as usual source of care provider.

In addition, we were not able to test the hypothesis of mediation and the moderation effects among state scope-of-practice regulations, NP supply, and NPs as a usual source of care provider. Third, state scope-of-practice regulation was broadly classified into three groups, which did not take into consideration nuanced provision of state-level legislation.

For example, some states with full scope-of-practice regulation require NPs to fulfill a certain number of hours of post-licensure practice with physician collaboration or mentoring before they are granted the full scope of practice and the prescriptive authority.

Implications of the study. Improving access to care is a top priority in the national and state healthcare agenda. It also is a major goal in guiding legislative and regulatory agencies regarding changes in the scope of practice of healthcare professions.

Our study provides empirical evidence on the link between full scope-of-practice regulation and increased care provided by NPs. Particularly, this increase benefit adults who were on public health insurance, uninsured, and those residing in non-metropolitan areas. Such information can assist state legislators and stakeholders in their decision-making concerning whether or not to expand NP scope-of-practice regulation.

Finally, I'd like to acknowledge the funding from the National Council State Boards of Nursing for this study and our research team. In addition, the data analysis in this study was conducted at the Centre for Financing, Access and Cost Trends Data Center.

The results and conclusions in this study are those of the authors and do not indicate concurrence by the AHRQ or the U.S. Department of Health and Human Services. Thank you. Thank you for your attention, it was my great pleasure to speaking at the NCSBN Scientific Symposia.

So, I saw one question asking about whether the PPT available. Yeah, I hope the National Council State Boards of Nursing would make my presentation PPT available to all the participants.

So, I'm also happy to send you a copy of the presentation. So, I can be reached at Ying, my first name, and underscore, last name, @urmc.rochester.edu. Yeah, so please send me an email, and then I will be happy to send you a copy of my presentation.

Also, as an update, this work was published in the Journal of Nursing Regulation in October 2020. So, if you'd like to learn more details about this work, you can read the paper. Yeah, so I see there are two questions.

I haven't seen the second one. So, I'm waiting. There might be a delay. Okay, so there are more questions. So, I have a little bit trouble seeing from my side. Okay, so now I see it.

Okay, so I will answer the question. It might not be in order. So, okay, I will see, the first question is from Cassie Scott. "Did you see the recently released quantitative survey done by AONL, ANA, and Johnson & Johnson show that only 57% of physicians surveyed, though allowing nurses to practice to limit of their license, will be beneficial in underserved community to improve healthcare disparity? Thoughts on that?"

Yeah, so that is...we have to provide empirical evidence to demonstrate the value of NPs' work. So, that was our motivation for this work. So, we will continue to build on the evidence of this work and further along, you know, all the future work. And so, that we hope with more evidence available, we will promote evidence-based policymaking to change and expand NP scope of practice.

So, as you know, or probably know that recently, California passed the legislation to allow NP to have full scope of practice effective in 2023. That is a very exciting step.

So, we hope that more and more states would follow the steps of California and to expand the scope of practice for NPs. So, I see another question coming from Mary Hines. "So, I'm an NP in Colorado that owns her own business, and I am the primary care provider of a large panel of children. One of the concern I have is that it is not only regulation that controls practice, but the lack of preparation of NPs to practice in solo roles and advocating for changes in SOP. Do you think you would find the same result in family and pediatric practice?"

Yeah, so I think this is not, you know, surprising to me that, I think, right now, there's more and more education program to address this issue. That is to better prepare NP to practice in, you know, variety shows, including, you know, solo practice.

So, that's why you see there's growing programs to have NP residency so that we hope that can fill that gap. Okay, a question from Melissa Charlie. "For your analysis, did you consider adding the state-level data expanded Medicaid or not?"

Okay, so yeah, so we have a state-level data, but we didn't including expanding Medicaid or not. But however, we included insurance status. So, which I think the Medicaid expansion was already reflected in the patient's individual-level health insurance status.

Okay, so, yeah, so just one quick last question there, because we are running out of time, so from Michelle Buck. "Did you have any data of impact of employer restriction to full scope of practice in state which grant full scope-of-practice authority?"

That is excellent question. So unfortunately, in our data, we did not, you know, have data to control for that. We are aware that there are, you know, a variety of organization-level practice. So, which can, you know, be different from state regulation. Thank you.

Thank you for all your questions. For the questions that I didn't have time to answer, so please send me an email, I'll be happy to answer your questions. Thank you again.