



was sent to pre-licensure RN programs. The survey was used to collect information regarding each school's curriculum, their use of simulation, the facilities they used and how they substituted simulation for clinical hours and if they did so.

At the end of the survey, respondents were invited to be considered for participation in the bigger National Simulation Study by passing along their contact information to the study manager. Then, a group of school's respondents said they are interested.

Out of that, 10 schools were selected for the National Simulation Study from those programs. And we ended up with five ADN and five BSN programs participating. And the programs were geographically diverse and in solid standing academically, which we thought was important.

And also, from the pre-study, we knew roughly what the sizes of the curriculum was, how many training hours there were, so there was also sort of in the median ground of, I think it was 600 to 800 hours or something similar was, like, this is how many clinical hours were at each of these programs, so that we were in the middle ground of clinical hours and making sure that there were no really extreme outliers academically that could confound what we were studying.

And within each program, students were randomly assigned to one of three groups. Traditional clinical experience with no or minimal simulation used, 25% simulation experiences in place of traditional clinical experiences and 50% simulation experiences in place of traditional clinical experiences.

The students were tracked throughout their two-year course of study and were followed as new graduates in their first six months of their initial clinical practice. Students were assessed on clinic competency and nursing knowledge and they rated how well their learning needs were met in both the clinical and simulation environments.

Over 600 students completed the study requirements at the time of graduation in 2013. At the end of the study, there were no statistically significant differences in clinical competency as assessed by the clinical preceptors and instructors, no significant differences in comprehensive nursing knowledge assessments and there were no statistically significant difference in NCLEX pass rates among the three study groups.

In 2014, prior to the release of the results from the National Simulation Study, we at NCSBN, and this was led by Jennifer, this was Jennifer Hayden's idea, so this brings the conference full course, because we had the keynote address from Jennifer at the start and feel this is following up with an idea that Jennifer had that she wanted to track, what was the state of regulation now and what would it look like in the future.

So, and she asked two questions. She sent out a survey to all the boards of nursing and asked two specific questions. How many jurisdictions currently have regulations regarding the use of simulated clinical experiences? And what percentage of clinical-experience hours may be replace by simulation? And what we found at the time is that the majority of jurisdictions at that time, in 2014, did not have specific written regulation regarding the use of simulation hours and that a number of jurisdictions did not mention simulation in their regulations and did not specify a maximum percentage of clinical-experience hours that could be replaced by simulation.



2014, the numbers of specific, those with specific regulations was 21. And by 2022, that had climbed to 41 had specific regulations regarding the use of simulation.

So, that was an increase from 35% of the states to over two-thirds of the state. And that's for RNs. And then, question two for RNs. What percentage of clinical-experience hours may be replaced by simulation? And as you can see, in, you know, that would, for many states, that was not regulated back in 2014, and for five states, five states didn't allow it at all in 2014.

And by 2022, only one state didn't allow it at all. And rather, as you look in 2014, one state had a maximum of 50% used and by 2022, that number was 23.

So, that clearly reflects the impact of the regulations there. And then, I'm going to show you likewise graphs for the LPNs. And for the LPNs, as you can see in 2014, 20 states had specific regulations and that climbed to 36 states in 2022.

So, that went from 33.9% to 62%, almost once again, from about one-third to two-thirds. And then, a lot of states, originally around 40, were not regulated. That dropped down to a lower number. And we had a few states that didn't allow it at all and now that number is zero as far as LPNs. And the ones that originally nobody had the maximum time allowed to 50%, now that's up to 22.

- [Woman 1] Hi. I apologize already for asking my questions because I annoyed Brendan yesterday. So, thank you because for me, this is very timely.

I shared with Brendan we have some issues in New Jersey about simulation. So, I'm here at every one of the simulation. So, my first...so thank you. The second is were all of the schools that you studied, did they all have 600 or more hours of simulation?

- I believe so.

- Of clinical?

- Of clinical. Yeah. I believe...for some reason, it got edited out of the report, but there was a range. And the range was somewhere around 200 hours and I think the low level was 600. I could be wrong. I want to say it was 600 to...and if it wasn't, it was something like 570 to 779 or something. It was something in

- ...literally looking at practice acts and seeing what is allowed. And even, one thing I wanted to mention, you know, you saw in Nicole's presentation where she was talking about some of this stuff, some of the slides she had up there, that's what was actually being done. And, like, I've been told, a little birdie named Nancy Spector told me that, like, even though the states can do 50%, it's not like all of the schools or all the states are up to 50% right now, even though it's allowed.

We're strictly dealing with what do the regulations now allow compared to what was allowed back then. That's what this study focuses on.

- Thank you. And Jennifer would be proud. Thank you.

- [Man] Just to add to that comment that you shared with Nancy too, even in the pre-licensure study that I presented yesterday, even in the most extreme of conditions, during, like, the peak COVID periods, what we saw in a very large geographically diverse, like, set of programs, was that programs weren't making maximum use of simulation.

Oftentimes, like, the 75th percentile was, like, 30%. So, they were using it at high thresholds, but they weren't going up to the permissible limit. So, even in those extreme conditions, we weren't seeing essentially a full-fledge push towards simulation, which I think actually dovetails with Nancy's annual report data the other day too, so.

- I see somebody else climbing up.

- [Sharon] Hi. Sharon Sweeney Fee with Western Governors University. A lot of great studies on simulation and the use, and you know there's a large majority of the states that have put a regulation in. Is NCSBN thinking about creating model rules for simulation because it's all over the place of not only how much it can do but who can do it, what courses it's done in and every state has a little bit different detail for schools to meet.

And so, it gets pretty confusing and I think it would really help if we go deeper than just do you have regs, but what are those regs and do we have a standard that we could recommend?

- [Woman 3] That's an excellent question because we actually do have model regulations that are in our model practice act. When we put out the guidelines for simulation, we did so in conjunction with model language. And it could be adopted by the states.

And I think that's what most states have used for their regulations.

- One of the things that I wanted to mention too, and this follows up with a conversation I did have with Barbara the other day, which is one of the things that we looked at right at the end of our study, Richard and I, is we looked at what were the quality control measures or parameters under which these states were essentially kind of spelling out the permissible use of simulation in education.

We did find that many of the states, most of the states, did an excellent job in putting in that quality context. And then, in the end of the manuscript, what we really tried to emphasize was that when you're thinking about changing the nurse practice act or when you're thinking about updating the rules or the regulations regarding permitted simulation use and pre-licensure nursing education, it's absolutely imperative that you remember that context. That it's not just up to 50%.

It's up to 50% within specific quality controls.

- Guidelines.

- So, we were careful to mention that. We did look at kind of the review with an eye towards that quality piece as well. We saw it present in the vast majority of cases. But, in the event that we didn't, and for those boards, obviously there are many jurisdictions that have yet to spell that out in rules and regulations, in the event that you go down that route, we would highly recommend that you review the guidelines, you download the guidelines and you look at those models.

- [Judy] Good morning. Judy [inaudible] from Massachusetts and I tapped Brendan last night with my question and it was my question for Nancy today. The guidelines that you're referring to, are those the ones that have the more recent ones with the quality indicators and the document that comes from that?

Or because frequently we're hearing guidelines and I know the quality indicators are very valuable, because it does speak to all sorts of different kinds of things. But, I'm hearing high-fidelity and then quality indicators uses the term, high quality. And just curious about best practices for implementation.

- [inaudible] in there.

- So that's another good question. They are separate. So, and let me just explain the process that we go through when we develop guidelines. So, we don't just look at the study and say, "Okay, this study tells us this so therefore, let's make up guidelines." We bring together the top experts in the country on the subject that we want to develop guidelines for. And they're a mixed group of individuals, from educators, to legal experts and all of that.

And we don't only look at our research, but we look at the entire body of research together and say, "What is this telling us?" And so, these guidelines are separate from the quality indicators in Nancy's study, which were developed in the same way.

But these are separate. They're in a separate journal article that was published in the journal. And they also include the quality indicators for simulation, exactly what Richard said. And those quality indicators were put into the model language.

- [Laurie] Hi. I'm Laurie Hillson from Massachusetts. I just have a question about the guidelines as far as ratios, one to one, one to two, one to three and also is the 50% across the program or in each course, each nursing course?

- Well, 50% is a maximum.

- But, like, in the accrediting bodies, [inaudible 00:26:14.153] and it's 50% in the program versus could you do a whole med-surg course 100% or is it in each course?

- It's for each course.

- Each course. Yeah.

- And you had another question.

- And then about the ratios.

- Oh. We did, for the study, was one to one.

- One to one. One to one. Okay. I think time is just about up. If you have anymore questions, you can come up, ask us. But thank you very much, appreciate it.