

Oct. 28, 2022

National Nursing Education Annual Report: 2020–2021 Aggregate Data

Nancy Spector, PhD, RN, FAAN

Josephine Silvestre, MSN, RN

Qiana McIntosh, MBA

Nicole Kaminski-Ozturk, PhD, PMP

Introduction

In the fall of 2020, NCSBN launched the Annual Report Program (ARP) for nursing regulatory bodies (NRBs) in the U.S. In this program, NCSBN collects the nursing education Annual Report data that most NRBs require. The goals of this new program are two-fold. First, NCSBN is assisting the NRBs with this time-consuming data collection. Secondly, NCSBN is creating the first-ever nursing education database for the nursing community. The ARP team has developed evidence-based core questions that are asked of all participating NRBs, thereby collecting consistent data that can be compared nationally.

Besides demographic data, all the questions are based on the quality indicators and warning signs reported in NCSBN Regulatory Guidelines (Spector et al., 2020). Each NRB also has the opportunity to submit their own additional questions (AQs). NCSBN then cleans, verifies and analyzes the data for each NRB. The NRBs receive a final report of their state's data, with asterisks by those programs that don't fully meet certain key evidence-based quality indicators. Armed with the Annual Report data, the NRBs and programs can work together to identify needed improvements *before* NCLEX® Examination pass rates and other outcomes fall below standards. NCLEX pass rates are lagging indicators, meaning that they don't begin to fall until other key quality indicators have not been met.

Annually, NCSBN will disseminate a report of the aggregate data, which the NRBs can compare to their programs' data. Additionally, each participating program receives a report of their data before they submit their survey, so they can compare their findings to the other programs in the ARP. This is a win-win situation for NRBs and nursing programs. This is the first report of aggregate data from the 2020-2021 year.

Background

The core questions in the Annual Report surveys are all based on the robust research study NCSBN conducted from 2018-2020 (Spector et al., 2020). In 2017 NCSBN's Board of Directors charged a committee, which included NCSBN's membership and representatives from the American Association of Colleges of Nursing (AACN) and the National League for Nursing (NLN), with providing the NRBs with evidence-based and legally defensible quality indicators of nursing education programs that they could use when approving their nursing education programs.

After completing an integrative literature review, using a recognized method of rating the evidence, the committee concluded that there currently is not robust evidence on nursing education quality indicators and warning signs. Therefore, NCSBN's Research team embarked on a two-year journey to provide NRBs with nursing program quality indicators. This comprehensive, mixed-methods study was published in 2020, and it consisted of four national studies (see [Figure 1](#)): an integrative literature review; a national Delphi study with educators, regulators and those who practice with new graduates; a five-year quantitative study of NRB Annual Report data; and a five-year qualitative study of NRB site visit documents.

Figure 1. Summary of Research Supporting Evidence-Based Approval



Data from 2020-21 Participating NRBs

There were 20 NRBs participating in 2020-21. Because of the pandemic many NRBs and their nursing programs were overwhelmed, and some wanted to delay their participation. In Mississippi the licensed practical/vocational nurse (LPN/VN) programs are approved by the NRB, while the registered nurse (RN) programs are approved by the Mississippi Institutions of Higher Learning. Since NCSBN sent out two separate surveys in that state and provided separate reports, they were counted as two NRBs. Data were collected on diploma, LPN/VN, associate degree, baccalaureate degree, accelerated bachelor of science in nursing (BSN) and master's entry programs. Of the 20 NRBs participating, there were:

- 843 nursing programs;
- 112,147 students enrolled in their programs;
- 8,263 full-time faculty;
- 3,104 part-time faculty; and
- 7,768 clinical adjunct faculty.

The results of the 16 COVID-19 questions will be reported elsewhere.

See [Table 1](#) for the program demographics. The majority of diploma, bachelor's, accelerated BSN (ABSN) and master's entry programs are urban, while the majority of LPN/VN and associate's programs are rural. Many programs are publicly owned, though 51% of bachelor's programs are private not-for-profit. It is also noteworthy that 10% of the associate's programs are private for-profit programs. While the majority of programs provide in-person learning, ABSN programs report that 60.9% are hybrid, though the number of ABSN programs is low. The vast majority of programs offer simulation. Most of the nursing programs in this database do not provide English as a second language (ESL) support services for their students. With an increasing focus on diversity in nursing, adding an ESL program for their students should be a consideration. A majority of the nursing program directors do not also have administrative authority over allied health programs. With the exception of LPN/VN and ABSN programs, most programs have an assistant/associate director, and a vast majority have dedicated administrative support. Most of the programs provide orientation and mentoring of new faculty, as well as orientation of part-time and adjunct clinical faculty.

Table 1. Program Demographics						
	LPN/VN	Diploma	Associate's	Bachelor's	Accelerated BSN	Master's Entry
N	275	7	326	208	23	4
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Geographic Location						
Urban	84 (30.5%)	3 (42.9%)	98 (30.1%)	84 (40.4%)	16 (69.6%)	2 (50.0%)
Suburban	53 (19.3%)	2 (28.6%)	69 (21.2%)	52 (25.0%)	5 (21.7%)	2 (50.0%)
Rural	135 (49.1%)	2 (28.6%)	150 (46.0%)	68 (32.7%)	1 (4.3%)	0 (0.0%)
Other	3 (1.1%)	0 (0.0%)	9 (2.8%)	4 (1.9%)	1 (4.3%)	0 (0.0%)
Institutional Ownership						
Public	243 (88.4%)	2 (28.6%)	269 (82.5%)	85 (40.9%)	9 (39.1%)	2 (50.0%)
Private, Not-for-Profit	10 (3.6%)	2 (28.6%)	24 (7.4%)	106 (51.0%)	7 (30.4%)	2 (50.0%)
Private, For-Profit	22 (8.0%)	3 (42.9%)	33 (10.1%)	17 (8.2%)	7 (30.4%)	0 (0.0%)
Learning Modalities						
In-Person Only	189 (68.7%)	5 (71.4%)	178 (54.6%)	106 (51.0%)	9 (39.1%)	3 (75.0%)
Online Only	0 (0.0%)	0 (0.0%)	2 (0.6%)	2 (1.0%)	0 (0.0%)	0 (0.0%)
Hybrid	86 (31.3%)	2 (28.6%)	146 (44.8%)	100 (48.1%)	14 (60.9%)	1 (25.0%)
ESL Services						
Yes	126 (45.8%)	2 (28.6%)	157 (48.2%)	89 (42.8%)	7 (30.4%)	1 (25.0%)
No	149 (54.2%)	5 (71.4%)	169 (51.8%)	119 (57.2%)	16 (69.6%)	3 (75.0%)
Simulated Clinical Experience Offered						
Yes	244 (88.7%)	7 (100.0%)	311 (95.4%)	203 (97.6%)	23 (100.0%)	4 (100.0%)
No	31 (11.3%)	0 (0.0%)	15 (4.6%)	5 (2.4%)	0 (0.0%)	0 (0.0%)
Director Has Administrative Responsibility for Allied Health						
Yes	85 (30.9%)	1 (14.3%)	77 (23.6%)	12 (5.8%)	1 (4.3%)	0 (0.0%)
No	190 (69.1%)	6 (85.7%)	249 (76.4%)	196 (94.2%)	22 (95.7%)	4 (100.0%)
Program Has Assistant/Associate Director						
Yes	49 (17.8%)	4 (57.1%)	80 (24.5%)	91 (43.8%)	7 (30.4%)	2 (50.0%)
No	226 (82.2%)	3 (42.9%)	246 (75.5%)	117 (56.3%)	16 (69.6%)	2 (50.0%)

Table 1. Program Demographics						
	LPN/VN	Diploma	Associate's	Bachelor's	Accelerated BSN	Master's Entry
N	275	7	326	208	23	4
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Director Has Dedicated Administrative Support						
Yes	236 (85.8%)	7 (100.0%)	295 (90.5%)	185 (88.9%)	18 (78.3%)	4 (100.0%)
No	39 (14.2%)	0 (0.0%)	31 (9.5%)	23 (11.1%)	5 (21.7%)	0 (0.0%)
Formal Orientation for New Adjunct Clinical Faculty						
Yes	241 (87.6%)	6 (85.7%)	288 (88.3%)	192 (92.3%)	22 (95.7%)	3 (75.0%)
No	34 (12.4%)	1 (14.3%)	38 (11.7%)	16 (7.7%)	1 (4.3%)	1 (25.0%)
Formal Orientation for New Full-Time Faculty						
Yes	265 (96.4%)	7 (100.0%)	318 (97.5%)	202 (97.1%)	22 (95.7%)	4 (100.0%)
No	10 (3.6%)	0 (0.0%)	8 (2.5%)	6 (2.9%)	1 (4.3%)	0 (0.0%)
Formal Orientation for New Part-Time Faculty						
Yes	233 (84.7%)	7 (100.0%)	274 (84.0%)	183 (88.0%)	20 (87.0%)	4 (100.0%)
No	42 (15.3%)	0 (0.0%)	52 (16.0%)	25 (12.0%)	3 (13.0%)	0 (0.0%)
Formal Mentoring for New Full-Time Faculty						
Yes	244 (88.7%)	7 (100.0%)	310 (95.1%)	192 (92.3%)	20 (87.0%)	4 (100.0%)
No	31 (11.3%)	0 (0.0%)	16 (4.9%)	16 (7.7%)	3 (13.0%)	0 (0.0%)

The number of clinical hours has been discussed in the literature, though at this time there are no evidence supporting a minimum number of clinical hours. Currently, in the U.S. only 13 NRBs require specific numbers of clinical hours (NCSBN, 2021). In this database, the mean number of hours across all programs (LPN/VN; diploma; associate's; bachelor's; and master's entry) was:

- 472.97 for direct care clinical experiences;
- 69.62 for simulation;
- 115.72 for skills labs.
- 658.31 for total clinical hours (direct care, simulation and skills labs)

See [Table 2](#) for the distribution of hours among the program types.

Table 2. Breakdown of Program Hours by Program Type						
	LPN/VN	Diploma	Associate's	Bachelor's	Accelerated BSN	Master's Entry
N	275	7	326	208	23	4
Direct Patient Care Hours						
Mean	386.3	530.21	437.61	625.64	578.85	665
SD	±169.14	±303.9	±173.05	±202.57	±192.3	±200.32
Simulation Hours						
Mean	54.63	35	69.9	85.66	113.91	50
SD	±63.74	±37.92	±85.45	±69.52	±109.5	±28.19
Skills Lab Hours						
Mean	124.27	113.64	110.12	112.13	119.46	153.75
SD	±126.24	±68.34	±78.04	±63.76	±67.61	±123.37

It should be noted that the survey question asked for typical (or pre-pandemic) hours as the pandemic

adversely affected direct patient care clinical hours because practice facilities closed their doors to student nurses (NCSBN, 2022). Additionally, it also impacted simulation and skills lab hours because of social distancing requirements in many states.

Direct care clinical hours have been decreasing over the years. See [Table 3](#) for 2010 and 2017 data from an NCSBN national sample (Smiley, 2019), as compared to 2020-21 data from the Annual Report database. One answer could be that programs are using more simulation to replace direct care clinical hours. The evidence supports replacing up to 50% of clinical experiences with simulation, if nationally adopted simulation guidelines are followed (Hayden et al., 2014; NCSBN, 2016). However, looking at the mean number of simulation hours, both among all programs and for individual program types, the simulation hours are also relatively low. Indeed, Hungerford et al. (2019) found that, when comparing nursing education program clinical hours among the U.S., Australia, New Zealand and the U.K., the U.S. has the lowest number of clinical hours in RN prelicensure programs¹. This trend of clinical hours (skills labs, simulation and direct care hours) bears watching in the future.

	2010 (median hours)	2017 (median hours)	2020-21 (mean hours)
Master's Entry	770	780	665
Bachelor's	765	712	625.64
Associate's	628	573	437.61
Diploma	720	683	530.21
LPN/VN	(data not collected)	565	386.3

Based on NCSBN's 2020 study of nursing education quality indicators (Spector et al., 2020), we have identified eight key quality indicators for nursing programs. NRBs and nursing programs can use these key indicators when evaluating programs so that changes can be made before the programs fall below standards. Please see [Table 4](#) for a comparison of the quality indicators for each type of program. Below is a summary of the key quality indicators that were reported in the 2020-21 Annual Report Surveys:

1. The majority of associate's, bachelor's, ABSN and master's entry programs are nationally nursing accredited. LPN/VN and diploma programs need further work in this area.
2. The vast majority of the programs have full approval status at their NRB.
3. Many of the programs experienced major organizational changes during the year being surveyed, which have been linked to poorer outcomes. Some of these changes would include new director or assistant/associate director, staff or faculty layoff, change in university/college leadership, collapsing programs, economic efficiencies, etc. Our research suggests that this lack of upper administrative support has led to poorer outcomes.
4. Programs with three or more directors in five years have been linked to poorer outcomes.
5. All of the programs had at least 50% direct care clinical experiences, which were linked to better outcomes.
6. At least 35% full-time faculty in a nursing program is linked to better outcomes. 26.3% of the programs in the database had less than 35% full-time faculty, which could lead to poorer outcomes.

¹ Australia mandates 800 hours; New Zealand mandates 1100 hours; the United Kingdom mandates 2300 hours.

7. While our study did not find graduation rates to be a quality indicator, the national nursing accreditors, the U.S. Department of Education (USDE) and many NRBs use it as an outcome. The accreditors and USDE cite 70% graduation rate, or above, as meeting their requirements. As can be seen, many in this database did not reach this level.
8. Lastly, programs younger than seven years have been linked to poorer outcomes and might need more frequent oversight. While the vast majority of programs in this sample are long-standing, there were some categories with more than 10% of the programs being new.

Table 4. Key Quality Indicators							
	LPN/VN	Diploma	Associate's	Bachelor's	Accelerated BSN	Master's Entry	Grand Total
N	275	7	326	208	23	4	843
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Accreditation Status							
Yes	47 (17.1%)	3 (42.9%)	236 (72.4%)	201 (96.6%)	23 (100.0%)	4 (100.0%)	514 (61.0%)
No	228 (82.9%)	4 (57.1%)	90 (27.6%)	7 (3.4%)	0 (0.0%)	0 (0.0%)	329 (39.0%)
Programs' Approval Status							
Fully Approved	261 (94.9%)	6 (85.7%)	291 (89.3%)	191 (91.8%)	22 (95.7%)	4 (100.0%)	775 (91.9%)
Not Approved/ Conditional/ Probationary or Warning Status	14 (5.1%)	1 (14.3%)	35 (10.7%)	17 (8.2%)	1 (4.3%)	0 (0.0%)	68 (8.1%)
Experienced Major Organizational Changes							
Yes	140 (50.9%)	4 (57.1%)	155 (47.5%)	113 (54.3%)	18 (78.3%)	4 (100.0%)	434 (51.5%)
No	135 (49.1%)	3 (42.9%)	171 (52.5%)	95 (45.7%)	5 (21.7%)	0 (0.0%)	409 (48.5%)
Director Turnover							
Less than or Equal to Three Directors over the Past Five Years	257 (93.5%)	6 (85.7%)	293 (89.9%)	193 (92.8%)	18 (78.3%)	4 (100.0%)	771 (91.5%)
More than Three Directors over the Past Five Years	18 (6.5%)	1 (14.3%)	33 (10.1%)	15 (7.2%)	5 (21.7%)	0 (0.0%)	72 (8.5%)
Less Than 50% Direct Care Clinical Experience							
Greater than 50% Direct Care Clinical Experience	247 (89.9%)	7 (100.0%)	304 (93.3%)	204 (98.1%)	21 (91.3%)	4 (100.0%)	787 (93.4%)
Less than 50% Direct Care Clinical Experience	28 (10.2%)	0 (0.0%)	22 (6.7%)	4 (1.9%)	2 (8.7%)	0 (0.0%)	56 (6.6%)

Table 4. Key Quality Indicators							
	LPN/VN	Diploma	Associate's	Bachelor's	Accelerated BSN	Master's Entry	Grand Total
N	275	7	326	208	23	4	843
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Less Than 35% Full-Time Faculty							
Greater than 35% Full-Time Faculty	218 (79.3%)	4 (57.1%)	239 (73.3%)	146 (70.2%)	12 (52.2%)	2 (50.0%)	621 (73.7%)
Less than 35% Full-Time Faculty	57 (20.7%)	3 (42.9%)	87 (26.7%)	62 (29.8%)	11 (47.8%)	2 (50.0%)	222 (26.3%)
Less Than 70% Graduation Rate							
Greater than or Equal to 70% Graduation Rate	134 (48.7%)	1 (14.3%)	200 (61.3%)	137 (65.9%)	15 (65.2%)	3 (75.0%)	490 (58.1%)
Less than 70% Graduation Rate	141 (51.3%)	6 (85.7%)	126 (38.7%)	71 (34.1%)	8 (34.8%)	1 (25.0%)	353 (41.9%)
Programs Established Before 2016/After 2015							
Before 2016	260 (94.5%)	7 (100.0%)	296 (90.8%)	182 (87.5%)	19 (82.6%)	3 (75.0%)	767(91.0%)
After 2015	15 (5.5%)	0 (0.0%)	30 (9.2%)	26 (12.5%)	4 (17.4%)	1 (25.0%)	76 (9.0%)

There were other quality indicators that emerged from the Spector et al. (2020) study that would provide some direction to NRBs and nursing programs when evaluating programs. Program changes could be made, based on the evidence (see [Table 5](#)).

In this category, most LPN/VN programs and all other nursing programs provide disability support services to their students. Most programs provide services for students in low socioeconomic classes. Remediation is provided for students who need support in most programs, though 15% do not. Fewer than 80% of the programs have a formal remediation process for students who report errors or near misses in their clinical experiences, which may be an area programs could focus more on, making sure to encourage a just culture in the nursing program. It is not surprising that only 22% of simulation faculty are certified and 4.9% of simulation centers are accredited since these opportunities are relatively new to nursing education. However, this may be a focus in the future for nursing education.

Table 5. Other Quality Indicators							
	LPN/VN	Diploma	Associate's	Bachelor's	Accelerated BSN	Master's Entry	Grand Total
N	275	7	326	208	23	4	843
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Disability Support Services							
Yes	270 (98.2%)	7 (100.0%)	326 (100.0%)	208 (100.0%)	23 (100.0%)	4 (100.0%)	838 (99.4%)
No	5 (1.8%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	5 (0.6%)
Services for Low Socioeconomic Class Students							
Yes	253 (92.0%)	6 (85.7%)	312 (95.7%)	195 (93.8%)	19 (82.6%)	4 (100.0%)	789 (93.6%)
No	22 (8.0%)	1 (14.3%)	14 (4.3%)	13 (6.3%)	4 (17.4%)	0 (0.0%)	54 (6.4%)

Table 5. Other Quality Indicators							
	LPN/VN	Diploma	Associate's	Bachelor's	Accelerated BSN	Master's Entry	Grand Total
N	275	7	326	208	23	4	843
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Formal Remediation Process for Students Needing Academic Support							
Yes	234 (85.1%)	6 (85.7%)	275 (84.4%)	178 (85.6%)	20 (87.0%)	4 (100.0%)	717 (85.1%)
No	41 (14.9%)	1 (14.3%)	51 (15.6%)	30 (14.4%)	3 (13.0%)	0 (0.0%)	126 (14.9%)
Formal Remediation Process for Students Committing Errors/Near Misses							
Yes	220 (80.0%)	4 (57.1%)	257 (78.8%)	165 (79.3%)	20 (87.0%)	4 (100.0%)	670 (79.5%)
No	55 (20.0%)	3 (42.9%)	69 (21.2%)	43 (20.7%)	3 (13.0%)	0 (0.0%)	173 (20.5%)
Certified Simulation Faculty							
Yes	33 (12.0%)	2 (28.6%)	71 (21.8%)	71 (34.1%)	11 (47.8%)	3 (75.0%)	191 (22.7%)
No	211 (76.7%)	5 (71.4%)	240 (73.6%)	132 (63.5%)	12 (52.2%)	1 (25.0%)	601 (71.3%)
Does not offer simulated clinical experience	31 (11.3%)	0 (0.0%)	15 (4.6%)	5 (2.4%)	0 (0.0%)	0 (0.0%)	51 (6.0%)
Accredited Simulation Lab							
Yes	9 (3.3%)	0 (0.0%)	13 (4.0%)	15 (7.2%)	3 (13.0%)	1 (25.0%)	41 (4.9%)
No	235 (85.5%)	7 (100.0%)	298 (91.4%)	188 (90.4%)	20 (87.0%)	3 (100.0%)	751 (89.1%)
Does not offer simulated clinical experience	31 (11.3%)	0 (0.0%)	15 (4.6%)	5 (2.4%)	0 (0.0%)	0 (0.0%)	51 (6.0%)

Conclusion

In the 2020-21 Annual Report Program, we collected core data from 843 nursing programs, based on quality indicators and warning signs identified in a national, four-part study (Spector et al., 2020). Nursing programs and NRBs can use these aggregate data to evaluate their programs, make recommendations for improvement, and compare their results to programs from across the nation. As more states join this program (we have 30 participating states in 2021-22), our data will be even more robust. It is our goal to eventually have all states and territories participating in this national nursing education database.

Some of the areas where improvement is needed were identified as:

- More time is needed in clinical experiences (skills labs, simulation and direct care clinical experiences);
- Increasing director turnover is a concern;
- More simulation faculty should become certified and simulation centers should become accredited;
- Increased resources for students with ESL are needed;
- LPN/VN programs should be accredited at a higher level;
- At least 35% of faculty should be full time;
- Graduation rates should increase;
- Higher administrative support of nursing programs should increase.

As we continue to build this nursing education database, programs will be able to compare their results from year to year to identify the results of improvements they have made. This database is a major contribution to nursing education and we are grateful to the NRBs and nursing programs that have participated.

References

- Hayden, J.K., Smiley, R.A., Alexander, M., Kardong-Edgren, S., & Jeffries, P.R. (2014). The NCSBN national simulation study: A longitudinal, randomized, controlled study replacing clinical hours with simulation in prelicensure nursing education programs. Retrieved from https://www.ncsbn.org/public-files/JNR_Simulation_Supplement.pdf.
- Hungerford, C., Blanchard, D., Bragg, S., Coates, A., & Kim, T. (2019). An international scoping exercise examining practice experience hours completed by nursing students. *Journal of Nursing Education*, 58(1), 33-41.
- NCSBN. (2016). National Simulation Guidelines for Prelicensure Nursing Education Programs. Retrieved from <https://www.ncsbn.org/null/null/national-simulation-guidelines>.
- NCSBN. (2021). Member Board Profiles. Retrieved from https://www.ncsbn.org/public-files/2021_Education_Survey.pdf.
- NCSBN. (2022). The NCSBN Environmental Scan: Resiliency, Achievement, and Public Protection. Retrieved from <https://www.journalofnursingregulation.com/action/showPdf?pii=S2155-8256%2822%2900015-1>.
- Smiley, R.A. (2019). Survey of simulation use in prelicensure nursing programs: Changes and advancements 2010 – 2017. *Journal of Nursing Regulation*, 9(4), 48-61.
- Spector, N., Silvestre, J., Alexander, M., Martin, B., Hooper, J.I., Squires, A., & Ojemeni, M. (2020). NCSBN regulatory guidelines and evidence-based quality indicators for nursing education programs. *Journal of Nursing Regulation*, 11(2), S1-S64. https://www.ncsbn.org/Spector_NCSBN_Regulatory_Guidelines_and_Evidence_Based_Quality_Indicators_for_Nursing_education_programs.pdf