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National Nursing Education Database: 2021–2022 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, which is the first national program to collect annual education data from all nursing programs in participating U.S. nursing regulatory bodies (NRBs). This program is based on NCSBN's studies of quality indicators of nursing programs (Spector et al., 2020), where NCSBN's Annual Report team collects demographic data and evidence-based quality indicators of nursing programs for the NRBs. Most NRBs require nursing education annual data as part of their approval process of nursing programs.

Each nursing program in participating states/jurisdictions receives a report of their metrics and each participating NRB receives a report of all their programs' metrics, including how their programs are meeting the quality indicators. Annually NCSBN will disseminate a report of the aggregate data so that programs and NRBs can benchmark the program metrics. The NRBs and nursing programs can then work together to identify needed improvements – *before* NCLEX® Exam pass rates and other outcomes fall. It is important to remember that NCLEX pass rates are lagging indicators, meaning that they don't begin to fall until other key quality indicators have not been met (Spector et al., 2020).

Participating NRBs

While 20 U.S. NRBs participated in NCSBN's Annual Report Program in 2020–21 (NCSBN, 2023), 23 NRBs participated in 2021–2022. Table 1 illustrates how the participating jurisdictions in 2020–2021 compared to those in 2021–2022. A goal of the Annual Report Program is that all NRBs will participate, thus providing us with the first national nursing education database of all U.S. nursing programs.

Table 1. Participants in 2020–21 and 2021–22

	2020–2021	2021–2022
Participating NRBs	20	23
Number of Programs	843	972
Enrolled Students	112,147	124,912
Full-time Faculty	8,263	9,653
Part-time Faculty	3,104	4,402
Clinical Adjunct Faculty – Employed by Program	7,296	8,822
Clinical Adjunct Faculty – Not Employed by Program	472	837

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Results

Table 2 illustrates program demographics. Similar to the 2020–2021 data, there are only five diploma programs and seven master's entry programs in this sample, which limits generalizations across those populations. As can be seen from Table 2, the majority of the bachelor's and accelerated bachelor's programs are urban, while the majority of licensed practical/vocational nurse (LPN/VN) and associate's programs are rural. These findings compare to the 2020–2021 data. The majority of LPN/VN, associate's and bachelor's programs are publicly owned, though 44.4% of the bachelor's programs are private not-for-profit, as are a majority of the master's entry programs. Of note, 24.1% of the 29 accelerated BSN programs are private for–profit programs. Of the LPN/VN programs and associate's programs, 12.4% and 12%, respectively, are private for–profit programs. These findings related to private for-profit programs are similar to those from 2020–2021. Regarding learning modalities, only 20.7% of the accelerated Bachelor of Science in Nursing (BSN) programs are in–person only, though the majority of the other program types are in-person-only (range from 56.8% to 80%). This compares to the 2020–2021 data, though the accelerated BSN programs had more in-person-only learning in 2020–2021 (39.1%). Similar to 2020–2021 data, online-only learning is present in associate's and accelerated BSN programs to a very limited extent and not at all in the other programs. Of the six program types evaluated, between 20% and 75.9% had some hybrid component. The literature often cites hybrid or blended education, when well implemented, to be beneficial in higher education (Müller & Mildenberger, 2021). Similar to 2020–2021 data most nursing program directors do not have administrative authority over allied health. In this 2021–2022 sample, most programs do not have an assistant/associate director, which is similar to the 2020–2021 data. However, nearly all the programs have dedicated administrative support for assisting with day-to-day activities of the nursing program. In accordance with 2020–2021 data, most programs implement formal orientation for adjunct faculty, full-time faculty and part-time faculty, as well as mentoring of full-time faculty. It should be noted, however, that while definitions of orientation and mentoring are provided, these data are self-reported.

Table 2. Program Demographics

	LPN/VN	Diploma	Associate's	Bachelor's	Accelerated BSN	Master's Entry
N	330	5	367	234	29	7
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Geographic Location						
Urban	90 (27.3%)	2 (40.0%)	109 (29.7%)	106 (45.3%)	19 (65.5%)	2 (28.6.0%)
Suburban	75 (22.7%)	2 (40.0%)	75 (20.4%)	57 (24.4%)	10 (34.5%)	4 (57.1%)
Rural	161 (48.8%)	1 (20.0%)	174 (47.4%)	65 (27.8%)	0 (0.0%)	1 (14.3%)
Other	4 (1.2%)	0 (0.0%)	9 (2.5%)	6 (2.6%)	0 (0.0%)	0 (0.0%)
Institutional Ownership						
Public	279 (84.5%)	2 (40.0%)	299 (81.5%)	107 (45.7%)	11 (37.9%)	3 (42.9%)
Private, Not-for-Profit	10 (3.0%)	2 (40.0%)	24 (6.5%)	104 (44.4%)	11 (37.9%)	4 (57.1%)
Private, For-Profit	41 (12.4%)	1 (20.0%)	44 (12.0%)	23 (9.8%)	7 (24.1%)	0 (0.0%)
Learning Modalities						
In-Person Only	250 (75.8%)	4 (80.0%)	209 (56.9%)	133 (56.8%)	6 (20.7%)	4 (57.1%)
Online Only	0 (0.0%)	0 (0.0%)	3 (0.8%)	0 (0.0%)	1 (3.4%)	0 (0.0%)
Hybrid	80 (24.2%)	1 (20.0%)	155 (42.2%)	101 (43.2%)	22 (75.9%)	3 (42.9%)
Simulated Clinical Experience Offered						
Yes	273 (82.7%)	5 (100.0%)	354 (96.5%)	226 (96.6%)	29 (100.0%)	7 (100.0%)
No	57 (17.3%)	0 (0.0%)	13 (3.5%)	8 (3.4%)	0 (0.0%)	0 (0.0%)

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Table 2. Program Demographics						
	LPN/VN	Diploma	Associate's	Bachelor's	Accelerated BSN	Master's Entry
N	330	5	367	234	29	7
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Director Has Administrative Responsibility for Allied Health						
Yes	93 (28.2%)	1 (20.0%)	91 (24.8%)	22 (9.4%)	1 (3.4%)	0 (0.0%)
No	237 (71.8%)	4 (80.0%)	276 (75.2%)	212 (90.6%)	28 (96.6%)	7 (100.0%)
Program Has Assistant/Associate Director						
Yes	76 (23.0%)	2 (40.0%)	102 (27.8%)	98 (41.9%)	15 (51.7%)	3 (42.9%)
No	254 (77.0%)	3 (60.0%)	265 (72.2%)	136 (58.1%)	14 (48.3%)	4 (57.1%)
Director Has Dedicated Administrative Support						
Yes	274 (83.0%)	5 (100.0%)	336 (91.6%)	210 (89.7%)	23 (79.3%)	6 (85.7%)
No	56 (17.0%)	0 (0.0%)	31 (8.4%)	24 (10.3%)	6 (20.7%)	1 (14.3%)
Formal Orientation for New Adjunct Clinical Faculty						
Yes	279 (84.5%)	4 (80.0%)	341 (92.9%)	213 (91.0%)	28 (96.6%)	6 (85.7%)
No	51 (15.5%)	1 (20.0%)	26 (7.1%)	21 (9.0%)	1 (3.4%)	1 (14.3%)
Formal Orientation for New Full-Time Faculty						
Yes	317 (96.1%)	5 (100.0%)	361 (98.4%)	232 (99.1%)	29 (100.0%)	7 (100.0%)
No	13 (3.9%)	0 (0.0%)	6 (1.6%)	2 (0.9%)	0 (0.0%)	0 (0.0%)
Formal Orientation for New Part-Time Faculty						
Yes	275 (83.3%)	5 (100.0%)	328 (89.4%)	203 (86.8%)	25 (86.2%)	6 (85.7%)
No	55 (16.7%)	0 (0.0%)	39 (10.6%)	31 (13.2%)	4 (13.8%)	1 (14.3%)
Formal Mentoring for New Full-Time Faculty						
Yes	293 (88.8%)	5 (100.0%)	353 (96.2%)	217 (92.7%)	27 (93.1%)	7 (100.0%)
No	37 (11.2%)	0 (0.0%)	14 (3.8%)	17 (7.3%)	2 (6.9%)	0 (0.0%)

Table 3 illustrates the clinical hours (direct care, simulation and skills lab[1]) across the six program types, while Table 4 reports on the trend of direct care clinical hours (those hours where students take care of actual patients) in the U.S. between 2010 and 2022. While the mean of direct care clinical hours for bachelor's and Accelerated Bachelor of Science in Nursing (ABSN) programs decreased slightly from 2020-2021, the rest of the programs' direct care hours increased slightly. Nearly all programs have simulation (Table 2), though as can be seen in Table 3, the number of simulation hours being used is low (range: 46.96 to 93.31 hours). According to NCSBN's Member Board Profiles (NCSBN, 2022), 35 (61%) of the U.S. NRBs allow up to 50% of the clinical hours[2] to be replaced by simulation, as long as accepted simulation guidelines are used. Therefore, in most states and U.S. jurisdictions regulation is not a barrier to programs using simulation (NCSBN, 2022). Interestingly, all of the six program types use more skills lab hours than simulation hours.

1. Direct patient care, simulation, and skills lab are all defined in the survey.

2. 7 NRBs (12%) allow up to 25%; 1 (2%) NRB allows more than 75%; 1 (2%) NRB allows up to 30%; 2 (4%) NRBs allow no simulation to replace clinical experiences; and in 11 (19%) NRBs simulation is not addressed in the statute or rules.

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Table 3. Breakdown of Program Hours by Program Type

	LPN/VN	Diploma	Associate's	Bachelor's	Accelerated BSN	Master's Entry
N	330	5	367	234	29	7
Direct Patient Care Hours						
Mean	406.13	612.00	445.43	610.29	552.85	736.57
SD	±181.68	±392.98	±299.58	±240.2	±156.75	±155.14
Simulation Hours						
Mean	46.96	56.30	67.44	83.26	93.31	59.57
SD	±43.73	±32.75	±57.45	±62.29	±63.3	±26.92
Skills Lab Hours						
Mean	110.86	99.30	105.05	112.03	108.14	104.14
SD	±63.54	±59.20	±78.59	±69.71	±69.41	±56.73

Table 4 reports on the trend of direct care clinical experience hours from 2010 through 2022. The 2010 and 2017 data on direct care clinical experience hours were obtained in national studies by NCSBN (Smiley, 2019), while the 2020–2021 and 2021–2022 data are from the aggregate Annual Report data, from participating NRBs, for those years (NCSBN, 2023). As is apparent in Table 4, direct care clinical hours have decreased in U.S. nursing programs since 2010. When comparing direct care clinical hours across English speaking countries, Hungerford (2019) found in a scoping review exercise that the U.S. lags behind Australia, New Zealand and the United Kingdom[3]. The pandemic could be a reason for decreasing hours in 2020–2021 and 2021–2022, so we will see if this downward trend reverses with the 2022–2023 data. While direct care clinical hours are pivotal to positive outcomes in nursing education (Spector et al., 2020), at this time we do not have evidence on the specific numbers of clinical experience hours students should have. This is an important indicator to monitor.

Table 4. Trend of Direct Care Clinical Hours from 2010–2022

	2010 (median hours)	2017 (median hours)	2020-21 (mean hours)	2021-22 (mean hours)
Master's Entry	770	780	665	736.57
Bachelor's	765	712	625.64	610.29
Associate's	628	573	437.61	445.43
Diploma	720	683	530.21	612.00
LPN/VN	(data not collected)	565	386.3	406.13

NCSBN's mixed-methods, national study of nursing education, followed by an analysis of the data by researchers, educators, attorneys and regulators, determined the key quality indicators of nursing education programs (Spector et al., 2020). It is crucial for nursing education programs and NRBs to identify any quality indicators that have not been met so that programs can be proactive in making improvements before their outcomes are adversely impacted. Therefore, the Annual Reports that the NRBs and nursing programs receive have a summary of the eight key quality indicators that need to be met. Table 5 illustrates the percentage of the 972 nursing programs, across program types, in the 2021–2022 Annual Report program that met, or did not meet, the quality indicators. Nursing programs can present these national data to their administrators to convince them that more resources and/or funding are needed so they will meet national standards.

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

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Compared to the 2020–2021 Annual Report aggregate data for programs meeting quality indicators (NCSBN, 2023), the 2021–2022 data are similar. For example, LPN/VN programs continue to lag behind other nursing programs for national nursing accreditation. The literature suggests that national nursing accreditation leads to better program outcomes (Spector et al., 2020). Another trend identified was that many programs experienced major organizational changes. Some of these changes include new director or assistant/associate director, staff or faculty layoff, changes in institutional leadership, collapsing programs, economic efficiencies which often lead to layoffs or cutting programs, etc. The research suggests that this lack of upper administrative support is associated with poorer outcomes (Spector et al., 2020). There were 26.4% (similar to the percentage in 2020–2021) of the programs in this database that had less than 35% full-time faculty, which is a major quality indicator and can lead to poorer outcomes (Spector et al., 2020). In the 2021–2022 database, we found that on-time graduation rates of 70% (used by the U.S. national nursing accreditors and the U.S. Department of Education) are not being met by programs. While graduation rates were not identified as a quality indicator in the NCSBN study (Spector et al., 2020), that may be because not all NRBs had been consistently collecting those data. However, we are now consistently collecting those data and will be statistically analyzing if on-time graduation rates are associated with better program outcomes. Indeed, 45.4% of the programs in the 2021–2022 database have less than 70% graduation rates.

Table 5. Key Quality Indicators Across Nursing Program Types

	LPN/VN	Diploma	Associate's	Bachelor's	Accelerated BSN	Master's Entry	Grand Total
N	330	5	367	234	29	7	972
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Accreditation Status							
Yes	42 (12.7%)	3 (60.0%)	283 (77.1%)	227 (97.0%)	29 (100.0%)	7 (100.0%)	591 (60.8%)
No	288 (87.3%)	2 (40.0%)	84 (22.9%)	7 (3.0%)	0 (0.0%)	0 (0.0%)	381 (39.2%)
Programs' Approval Status							
Fully Approved	303 (91.8%)	4 (80.0%)	326 (88.8%)	216 (92.3%)	26 (89.7%)	6 (85.7%)	881 (90.6%)
Not Approved/Conditional/ Probationary or Warning Status	27 (8.2%)	1 (20.0%)	41 (11.2%)	18 (7.7%)	3 (10.3%)	1 (14.3%)	91 (9.4%)
Experienced Major Organizational Changes							
Yes	144 (43.6%)	3 (60.0%)	166 (45.2%)	131 (56.0%)	21 (72.4%)	5 (71.4%)	470 (48.4%)
No	186 (56.4%)	2 (40.0%)	201 (54.8%)	103 (44.0%)	8 (27.6%)	2 (28.6%)	502 (51.6%)
Director Turnover							
Less than or Equal to Three Directors over the Past Five Years	308 (93.3%)	5 (100.0%)	328 (89.4%)	213 (91.0%)	23 (79.3%)	7 (100.0%)	884 (90.9%)
More than Three Directors over the Past Five Years	22 (6.7%)	0 (0.0%)	39 (10.6%)	21 (9.0%)	6 (20.7%)	0 (0.0%)	88 (9.1%)
Less Than 50% Direct Care Clinical Experience							
Greater than 50% Direct Care Clinical Experience	309 (93.6%)	5 (100.0%)	343 (93.5%)	226 (96.6%)	29 (100.0%)	7 (100.0%)	919 (94.5%)
Less than 50% Direct Care Clinical Experience	21 (6.4%)	0 (0.0%)	24 (6.5%)	8 (3.4%)	0 (0.0%)	0 (0.0%)	53 (5.5%)
Less Than 35% Full-Time Faculty							
Greater than 35% Full-Time Faculty	266 (80.6%)	3 (60.0%)	265 (72.2%)	163 (69.6%)	13 (44.8%)	5 (71.4%)	715 (73.6%)
Less than 35% Full-Time Faculty	64 (19.4%)	2 (40.0%)	102 (27.8%)	71 (30.3%)	16 (55.2%)	2 (28.6%)	257 (26.4%)

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Table 5. Key Quality Indicators Across Nursing Program Types

	LPN/VN	Diploma	Associate's	Bachelor's	Accelerated BSN	Master's Entry	Grand Total
N	330	5	367	234	29	7	972
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Less Than 70% Graduation Rate							
Greater than or Equal to 70% Graduation Rate	150 (45.5%)	0 (0.0%)	199 (54.2%)	159 (67.9%)	18 (62.1%)	5 (71.4%)	531 (54.6%)
Less than 70% Graduation Rate	180 (54.5%)	5 (100.0%)	168 (45.8%)	75 (32.1%)	11 (37.9%)	2 (28.6%)	441 (45.4%)
Programs Established 2017 or Before 2017/After 2017							
2017 or before	313 (94.9%)	5 (100.0%)	330 (89.9%)	209 (89.3%)	23 (79.3%)	3 (42.9%)	883 (90.8%)
After 2017	17 (5.1%)	0 (0.0%)	37 (10.1%)	25 (10.7%)	6 (20.7%)	4 (57.1%)	89 (9.2%)

Besides the key quality indicators, other quality indicators were identified by the NCSBN mixed-methods study (Spector et al., 2020) and these are highlighted in Table 6. While most programs provide disability support services, services for students with low socioeconomic statuses and formal remediation for students needing academic support, English as a second language (ESL) services/resources are missing in many nursing programs. While there is slight improvement from the 2020–2021 data, the majority of programs are not offering resources in ESL. Promoting more diversity in nursing education has become a major focus and providing these students with ESL resources has been shown to enhance outcomes (Sailsman, 2021; Spector et al., 2020). Therefore, nurse educators need to be more proactive with advocating for their ESL students, and the administrators should pay attention to this quality indicator. Of all the programs in the 2021–2022 database, 81.8% have remediation in place for students making errors or near misses in their clinical experiences, which means that 18.2% do not. These data are similar to 2020–2021 data, and this remains an area where improvements should be made. Similar to the 2020–2021 data, though even a little lower, only 4.1% of the simulation labs are accredited and 19.3% of simulation faculty are certified. With the advances being seen in simulation, this is an area where programs should focus in the future.

Table 6. Other Quality Indicators

	LPN/VN	Diploma	Associate's	Bachelor's	Accelerated BSN	Master's Entry	Grand Total
N	330	5	367	234	29	7	972
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Disability Support Services							
Yes	322 (97.6%)	5 (100.0%)	365 (99.5%)	233 (99.6%)	29 (100.0%)	7 (100.0%)	961 (98.9%)
No	8 (2.4%)	0 (0.0%)	2 (0.5%)	1 (0.4%)	0 (0.0%)	0 (0.0%)	11 (1.1%)
ESL Services							
Yes	124 (37.6%)	2 (40.0%)	186 (50.7%)	99 (42.3%)	10 (34.5%)	4 (57.1%)	425 (43.7%)
No	206 (62.4%)	3 (60.0%)	181 (49.3%)	135 (57.7%)	19 (65.5%)	3 (42.9%)	547 (56.3%)
Services for Low Socioeconomic Class Students							
Yes	305 (92.4%)	4 (80.0%)	349 (95.1%)	214 (91.5%)	24 (82.8%)	6 (85.7%)	902 (92.8%)
No	25 (7.6%)	1 (20.0%)	18 (4.9%)	20 (8.5%)	5 (17.2%)	1 (14.3%)	70 (7.2%)
Formal Remediation Process for Students Needing Academic Support							
Yes	273 (82.7%)	4 (80.0%)	313 (85.3%)	198 (84.6%)	28 (96.6%)	6 (85.7%)	822 (84.6%)
No	57 (17.3%)	1 (20.0%)	54 (14.7%)	36 (15.4%)	1 (3.4%)	1 (14.3%)	150 (15.4%)

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Table 6. 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 Committing Errors/Near Misses							
Yes	263 (79.7%)	3 (60.0%)	309 (84.2%)	188 (80.3%)	26 (89.7%)	6 (85.7%)	795 (81.8%)
No	67 (20.3%)	2 (40.0%)	58 (15.8%)	46 (19.7%)	3 (10.3%)	1 (14.3%)	177 (18.2%)
Certified Simulation Faculty							
Yes	29 (8.8%)	2 (40.0%)	70 (19.1%)	70 (29.9%)	13 (44.8%)	4 (57.1%)	188 (19.3%)
No	244 (73.9%)	3 (60.0%)	284 (77.4%)	155 (66.2%)	16 (55.2%)	3 (42.9%)	705 (72.5%)
Does not offer simulated clinical experience	57 (17.3%)	0 (0.0%)	13 (3.5%)	9 (3.8%)	0 (0.0%)	0 (0.0%)	79 (8.1%)
Accredited Simulation Lab							
Yes	7 (2.1%)	0 (0.0%)	10 (2.7%)	14 (6.0%)	8 (27.6%)	1 (14.3%)	40 (4.1%)
No	266 (80.6%)	5 (100.0%)	344 (93.7%)	211 (90.2%)	21 (72.4%)	6 (85.7%)	853 (87.8%)
Does not offer simulated clinical experience	57 (17.3%)	0 (0.0%)	13 (3.5%)	9 (3.8%)	0 (0.0%)	0 (0.0%)	79 (8.1%)

Conclusion

This 2021-2022 national report of 972 nursing education programs is provided for NRBs and nursing programs to benchmark nursing education metrics to these evidence-based quality indicators. Nurse regulators can work with nursing programs to identify deficiencies so that nursing programs can make improvements *before* outcomes (such as NCLEX pass rates) are adversely affected. These 2021–2022 data illustrate the nursing education trends:

- Clinical experience hours have decreased since 2010, though there has been a slight improvement since 2020–2021;
- More than 50% of the nursing programs have no resources and programs for ESL students;
- LPN/VN programs lag behind other nursing programs for being nationally nursing accredited;
- More than a quarter of all nursing programs have less than 35% of their faculty being full-time;
- Many nursing programs do not have a 70% on-time graduation rate;
- Higher administration is often not supportive of nursing education; and
- A majority of simulation labs are not accredited. Similarly a majority of simulation faculty are not certified.

More states are joining this Annual Report Program every year and our goal is for all NRBs to participate in the program. This database is a major contribution to nursing education and we are grateful to the NRBs and nursing programs that have participated.

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