FRIDAY MORNING HUDDLE

A gathering of Oregon nursing workforce leaders together to offer timely updates and share insights from peers and stakeholders.

DATE: June 26, 2020

Nursing Education:

NCLEX Tests for New Graduates. NCSBN held a national webinar yesterday to discuss the NCLEX testing for new graduates. They have opened temporary testing sites in several places across the United States (but not in Oregon). Graduates experiencing testing delays in their state/community can travel to other states for testing. NCSBN has also submitted requests in every state to request waiver to allow them to test at full capacity (waiving distancing requirements). This request has been passed along to the Governor's office for consideration, but an answer has not yet been received. Graduates should register for the first available testing date and then check the PearsonVue scheduling site regularly for additional test dates; they can change their test date without incurring additional fees.

Licensure Post Testing. The Board of Nursing is not experiencing delays in receiving test results from PearsonVue but reminded participants there are other licensure requirements (background check, fingerprints, etc.) that can also create a delay in licensure.

Clinical Placement Updates. Several practice partners on today's call provided updates on their clinical placement capacity at this time. Kaiser Permanente has a national hold on all LPN, RN, MA clinical placements. The Portland VA is offering limited clinical placements, which require students to complete an application process. They aren't offering any clinicals in ER, CCU or surgery settings. The Board of Nursing will be discussing clinical placement availability and allowing permanent online didactic classes at the August board meeting. Individuals will be able to listen to that board meeting, but not participate in public comment. Information on connecting will be available on the board's calendar one month prior.

Workforce Diversity:

NCLEX Pass Rates. Casey Shillam with the University of Portland raised the issue of NCLEX first-time pass rates being used as a metric for evaluating/approving nursing programs in the state. She shared her organization's experience with trying to improve its pass rates and the unintended effect that had on students of color. Many students were unable to meet the educational benchmarks set by the program to improve pass rates and were dismissed from the program. Though the school is committed to improving diversity within its program, it feels the first-time NCLEX pass rate is a barrier.

Division 21 Rule Changes. The Board of Nursing is in the process of revising Division 21 and will vote on rule revisions later this year. Part of those revisions include changing the NCLEX pass rate metric. Current rules only look at the first-time pass rate. The revised rules require schools to maintain a first-time pass rate of 75% and a total pass rate (within 1 year of graduation) of 90%. The Board did say there are several states and countries that no longer use first-time pass rate as a metric, relying solely on total pass rate. The rules committee looked at removing first-time pass rate all together, but in the end decided to include it as it is still part of the model rules recommended by NCLEX. Several individuals voiced their concern about continuing to rely on first-time pass rates.

Additional Program Support. Several organizations talked about the need to implement and evaluate student access to supportive services (tutors, counseling, test prep, etc).

Resources:

Articles related to NCLEX rates and nursing education diversity initiatives are attached to this summary.

NEXT HUDDLE:
FRIDAY, JULY 10, 8 A.M.

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Analysis of Licensure Testing Patterns of RN Graduates in Oregon

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ABSTRACT

Background: First-time NCLEX pass rate (FTPR) was a measure of workforce entry developed in the 1970s and is now used in accreditation standards to assess program effectiveness. Faculty may change admission and progression policies based on FTPR, which may affect enrollment, student diversity, or costs. This study describes testing patterns of RN graduates on the NCLEX-RN in Oregon to identify other academic metrics related to licensure. **Method:** Testing patterns of graduates in Oregon ($N = 4,045$) during 2013-2015 were analyzed to determine the number of testing attempts and length of time until success. **Results:** The FTPR for testers was 88.6%. By the second attempt, 96.1% passed; by the third attempt, 98% passed. Within 90 days of eligibility, 87.6% of testers passed; within 180 days, 95.3% passed. **Conclusion:** It is recommended that second- and third-time pass rates or pass rates within 6 months be considered as academic metrics for accreditation purposes. [*J Nurs Educ.* 2018;57(11):655-661.]

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Successful entry into the nursing workforce for graduates is an outcome for prelicensure nursing programs. The National Council of State Boards of Nursing (2015, para. 2) states: "Because passing the NCLEX is usually the final step in the nurse licensure process, the number of people passing the NCLEX ('pass rate') is a good indicator of how many new nurses are entering the profession in the U.S." The first-time pass rate (FTPR) of nursing program graduates is a statistic that has been reported for many years with a consistent definition. The origin of how the NCLEX® FTPRs became a measure of undergraduate educational program quality is unclear but can be traced to a time when testing only occurred twice per year (Benefiel, 2011). At the time, it "was the only measure within a reasonable time period" to assess program effectiveness given that a first-time failure on the licensure examination would considerably delay entry into the workforce (Bernier, Helfert, Teich, & Viterito, 2005, p. 39). The FTPR is currently used in national accreditation standards (Accreditation Commission for Education in Nursing, 2017; Commission on Collegiate Nursing Education, 2013; National League for Nursing, 2016), as well as by state boards of nursing to assess program ability to prepare entry-level nurses.

Graduates today have multiple opportunities to test throughout the year. With the ease of today's computerized registration and testing, it is feasible for candidates to fail and retest and still enter the workforce within a reasonable amount of time. Because individual variation, such as readiness for testing, testing anxiety, and illness on the day of testing, influences testing outcome (Eddy & Epeneter, 2002; McFarquhar, 2014), is the FTPR still an appropriate metric to assess program quality and ability to prepare entry-level nurses? Recently, concerns have been raised about reliance on an outdated singular performance measure as an indicator of academic program quality and the influence that reliance on FTPR may have on stringent admission and progression policies that affect fulfillment of a school's mission and nursing workforce diversity (Giddens, 2009; Noone, 2017; O'Lynn, 2017; Taylor, Loftin, & Reyes, 2014).

The purpose of this study is to describe testing patterns of new graduates on the NCLEX-RN in Oregon to identify other

TABLE 1

Comparison of RN Licensure Pass Rates Accreditation Standards

Accrediting Body	Licensure Pass Rates Criteria
Commission on Collegiate Nursing Education (2013)	The NCLEX-RN® pass rate for each campus/site and track is provided for each of the 3 most recent calendar years. "The NCLEX-RN pass rate for each campus/site and track is 80% or higher for first-time takers for the most recent calendar year. However, if the NCLEX-RN pass rate for any campus/site and track is less than 80% for first-time takers for the most recent calendar year, (1) the pass rate for that campus/site or track is 80% or higher for all takers (first-time and repeat) for the most recent calendar year, (2) the pass rate for that campus/site or track is 80% or higher for first-time takers when the annual pass rates for the 3 most recent calendar years are averaged, or (3) the pass rate for that campus/site or track is 80% or higher for all takers (first-time and repeat) when the annual pass rates for the 3 most recent calendar years are averaged" (p. 20).
National League for Nursing Commission for Nursing Education Accreditation (2016)	"The program achieves a minimum graduate licensure pass rate of 80% among first-time takers, averaged over the most recent 3-year calendar time period, for each prelicensure program (practical/vocational, diploma, associate, and bachelor's), producing graduates eligible to seek licensure" (p. 10).
Accreditation Commission for Education in Nursing (2017)	"The program's most recent annual licensure examination pass rate will be at least 80% for all first-time test-takers during the same 12-month period" (p. 6).

potential licensure metrics related to educational program outcomes and entry of graduates into the nursing workforce. A retrospective analysis of new RN graduates' testing patterns in Oregon who graduated during the period from January 1, 2013, through December 31, 2015, identified patterns of numbers of testing attempts and length of time until successful licensure. This analysis provides an increased understanding of testing patterns of new graduates to inform the selection of a metric at the entry-level point that can be used as an indicator of the adequacy of the prelicensure educational programs to prepare their graduates for nursing practice.

BACKGROUND

Currently, FTPRs are used as an outcome measure linked to educational quality by state and national nursing accrediting bodies. An 80% FTPR is the benchmark identified by the Commission on Collegiate Nursing Education (2013), the National League for Nursing Commission for Nursing Education Accreditation (National League for Nursing, 2016), and the Accreditation Commission for Education in Nursing (2017), although criteria varies by accrediting body (**Table 1**). State boards of nursing may have different FTPR benchmarks. Failure to achieve or maintain state or national benchmarks of FTPRs requires a programmatic plan and response. In Oregon, failure of one of the following is cause for a survey site visit:

- A first-attempt pass rate of 60% or higher on the licensing examination over a 1-year period.
- A first-attempt pass rate of 70% or higher over two consecutive 1-year periods.
- A 2-year pass rate of 85% or higher over 3 consecutive years (Oregon State Board of Nursing, 2016).

Consequences to the nursing program of not meeting FTPR benchmarks include conditional accreditation status or loss of accreditation.

Nursing programs who do not achieve state board or national accrediting agency pass rate benchmarks may be asked to complete a self-study and remediation plan to bring an FTPR up to a benchmark. Adherence to state and national benchmarks for FTPR and monitoring by those agencies if benchmarks are not met require resource utilization by both nursing programs to address program review and the accrediting agencies to monitor resolution of concerns. Although all nursing programs need to be diligent in program evaluation activities, the focus of this effort may be linked too strongly for FTPRs at, near, or below benchmarks, with subsequent changes to the curriculum (i.e., additional courses or commercial standardized tests) that may not be supported by other evidence. Taylor et al. (2014) reported their experience of being placed on conditional status by state boards of nursing for FTPRs below accreditation standard. This drop in FTPRs occurred after increasing their enrollment in response to workforce needs. Follow up on graduates indicated passing on the second attempt with entry into the workforce. Despite this, admission and progression policies changes required by the state boards of nursing were instituted that decreased enrollment.

A variety of interventions to increase pass rates appear in the literature and include revising admission standards, curriculum review, changes in grading policies, standardized testing for admission or progression, additional coursework, faculty

development, study skills, and stress management techniques (Carr, 2011; Pennington & Spurlock, 2010; Serembus, 2016). Pennington and Spurlock (2010), in a systematic review of remediation interventions to increase pass rates, identified that a variety of interventions were used to increase pass rates in the studies reviewed. However, there was a general lack of clarity about which interventions were of benefit and which were not. Although there are implications and cost to the graduate who fails upon the first attempt, such as additional costs of testing and a delay in entering the workforce, the costs of curricular changes must be considered by programs as well, especially when costs may be borne by the students.

Faculty may decide to implement programmatic changes to admission and progression policies based on FTPRs, which may impact student diversity or pose additional costs to the program or student through the implementation of standardized testing to assess the likelihood of graduates being successful on their first attempt on the licensure examination (Taylor et al., 2014). Giddens (2009), in an editorial aimed at rethinking FTPRs as the "gold standard," cited the concern that as admission and progression policies are implemented in attempts to improve FTPRs, there is a risk of limiting access to diverse students who may struggle with standardized testing and the NCLEX because of linguistic issues. Eighty-eight schools of nursing in Texas were required by the Texas Board of Nursing to complete a self-study report during the years 2013-2015 due to low FTPRs. A common intervention identified in this analysis was raising admission standards, which was interpreted as accepting students with a higher grade point average or scores on standardized tests (Hooper & Ayers, 2017). Revision of admission policies is a remediation strategy identified by the Illinois Board of Nursing for schools of nursing who need to improve their FTPRs (Libner & Kubala, 2017). Of concern in selecting FTPRs as an outcome measure and then interventions based on predictors of FTPR success is the potential to develop admission policies with an increased emphasis on educational metrics, rather than a holistic review of academic metrics, individual experience, and individual attributes. This could further disadvantage admission of diverse students (O'Lynn, 2017; Taylor et al., 2014).

Additional responses to improve FTPRs may include implementation of remediation or progression policies, including use of standardized testing throughout the curriculum, adoption of high-stakes testing, or use of a single test for progression or graduation (Davenport, 2007; Stonecypher, Young, Langford, Symes, & Willson, 2015). Commercial standardized tests may be implemented throughout the curriculum with the costs of these tests often being borne by the student. Schroeder (2013) detailed implementation of a comprehensive testing policy including implementation of commercial standardized tests and progression policies throughout the program of study and reported a significant increase in NCLEX FTPRs from 89% before implementation to 97% after. It is interesting to note that the author reported an 89% FTPR before implementation of this rigorous set of initiatives, which exceeded both state (FTPR of 75% for the state of Colorado) and national benchmarks (80%) at baseline. It is unclear, if both state and national benchmarks are being met, what the rationale is for a comprehensive set of interventions. Although standardized testing has been demonstrated in limited studies to be effective in raising FTPRs (Carr, 2011), a systematic review of remediation interventions to increase FTPRs (Pennington and Spurlock, 2010) identified most studies of poor quality with limited generalizability.

Student variation in testing performance influences FTPRs and may be a variable independent of educational program quality. This has been demonstrated in multiple reports. Woo, Wendt, and Liu (2009) analyzed national registered and practical nursing licensure testing patterns over a 2-year period from 2006-2008 and determined that there was a significant decline in pass rates as lag time increased from eligibility to test to the actual test date. In a qualitative study of 19 graduates (10 who passed and nine who did not pass on the first attempt), Eddy and Epeneter (2002) were able to differentiate patterns of preparation for testing, readiness for testing, and stress management during the test. Those who failed on the first attempt more often reported feeling unready to test and described difficulties managing stress and distractions during the test. McFarquhar (2014), in a qualitative study of 18 graduates who failed the NCLEX, also reported perceptions of inadequate preparation and distractions that participants contributed to failure.

There have been recommendations to report and evaluate first- and second-attempt pass rates (Bernier et al., 2005; Giddens, 2009; Taylor et al., 2014) or pass rates within 1 year of graduation (Taylor et al., 2014). Bernier et al. (2005) questioned the use of FTPRs as the gold standard and cited concerns about FTPRs for use in smaller size programs, where the difference of one additional failure may have a large influence on the percent-based calculation of the FTPR. They also pointed out that national data only report FTPRs and repeat testing rates for testers in a calendar year without inclusion of when the tester graduated, the number of attempts, or time frame of success from graduation (National Council of State Boards of Nursing, 2015). Woo et al. (2009), in their national analysis of repeat testing, identified that successful testing declined upon repeat testing but did not identify the number of attempts associated with success.

The Canadian Council of Registered Nurse Regulators (2017), which recently adopted the NCLEX-RN, in addition to reporting FTPRs, also reported an ultimate pass rate, which is the percentage of testers taking the examination in the calendar year they graduated and who passed within a maximum of three attempts. This is in contrast to the United States, in which national data report only FTPRs and repeat testing rates for the year in which someone tested, regardless of their graduation date (National Council of State Boards of Nursing, 2015). **Table 2** demonstrates a comparison of data collected by National Council of State Boards of Nursing and Canadian Council of Registered Nurse Regulators for the year 2015. The Canadian Council of Registered Nurse Regulators data provide clear information, especially when presented at a state and program level, of successful entry into the workforce within a given time frame from graduation. Most recently, Spector, Hooper, Silvestre, and Qian (2018) identified licensure pass rates as a common outcome measure that along with graduate and employment rates are metrics that "are only supported by opinion and not by high-level evidence" (p. 28). They recommend more evidence in identifying outcome metrics. The National Council of State

TABLE 2

Comparison of NCLEX-RN® Selected Results in United States and Canada for 2015

United States	Definition	Canada	Definition
Total = 229,459	The number of candidates taking the examination and seeking U.S. licensure in 2015.	Total = 9,048	The number of graduates in 2015 who took the examination in Canada.
First-time = 166,523 (81.78%)	The number is the number of first-time testers who took the exam in 2015 and the percentage is the percentage of candidates passing the examination on the first attempt regardless of graduation date.	First attempt pass rate = 6,306 (69.7%)	Percentage of graduates in 2015 who passed the examination on the first attempt.
Repeat = 62,936 (38.36%)	The number is the number of repeat testers who took the examination in 2015 and the percentage is the percentage of candidates passing the examination on a repeat attempt regardless of graduation date.	Ultimate pass rate in 2015 = 7,605 (84.1%)	Percentage of testers who graduated and took the examination in 2015 and passed within a maximum of three attempts.

Sources. Canadian Council of Registered Nurse Regulators (2017); National Council of State Boards of Nursing (2015).

Boards of Nursing is currently convening a Nursing Education Outcomes and Metrics Committee to recommend robust outcome measures (Spector, 2017).

METHOD

A retrospective, descriptive design was used for this study. New RN graduates' testing patterns in Oregon were analyzed to identify patterns of numbers of testing attempts and length of time until successful licensure. Assessing length of time until successful entry into the workforce is relevant given that the original measure of the FTPR was developed at a time when a failure meant a wait time of months to retest. The specific aims of this study were to:

- Evaluate the number of testing attempts on the NCLEX-RN until success for all new graduates in Oregon who graduated in the time period of January 1, 2013, through December 31, 2015. These will be reported in aggregate and according to nursing program (anonymized) attended.
- Evaluate the length of time until successful completion of the NCLEX-RN from eligibility to test for all new graduates in Oregon who took their first attempt during the period from January 1, 2013, through December 31, 2015. These will be reported at 3-, 6-, and 12-month intervals from eligibility to test and categorized in aggregate and according to nursing program (anonymized) attended.

Institutional review board approval by Oregon Health & Science University was received for this study.

Data records from the Oregon State Board of Nursing included individual test reports linked to the nursing program attended and educational first-time pass rates by nursing program for each of the 3 years. New graduates who were new candidates during this time period were identified, linked to a nursing program, and coded for anonymity. Follow-up on testing patterns occurred until December 31, 2016, to measure 1 year out from the end of first attempt period of study. All data were reported at the aggregate level and for each year, as well as by nursing program. Comparisons of these data with initial FTPRs reported by nursing program were made. Nursing program pass rates were calculated for second and third attempts, and successful attempts at 3-, and 6-, and 12-month intervals. Nursing program pass rates were identified as at risk if the annual FTPR was 85% or lower as either for faculty intervention or a review by the board of nursing would trigger interventions to improve FTPRs.

RESULTS

There were 4,045 graduates in Oregon who were first-time testers during this 3-year period: 1,340 in 2013, 1,383 in 2014, and 1,322 in 2015. The FTPR for all testers in the 3-year period was 88.6% (n = 3,583). The annual FTPR was 88.1% (n = 1,181) in 2013, 89.6% (n = 1,239) in 2014, and 88% (n = 1,163) in 2015. For all years, 96.1% (n = 3,887) of testers passed by the second try; 98% (n = 3,964) passed by the third try. 87.6% (n = 3,545) of testers passed within 90 days of eligibility; 95.3% (n = 3,854) of testers passed with 180 days. **Table 3** provides the total and annual aggregate results of number of attempts and duration until success.

A total of 80 measures of annual nursing program pass rates over the 3-year period reflected 26 nursing programs in 2013 and 2014 and 28 nursing programs in 2015. Wide variation of FTPRs existed, with 17 of the 80 (21.3%) measures falling below 85%. However, 76 (95%) of the 80 measures had nursing program pass rates on second attempt above 90% and 78 measures (97.5%) had an annual nursing programs pass rate above 90% on the third attempt. There was more variation in pass rates within 90 days of eligibility, with only 46 measures (57.5%)

reporting that 90% or above of graduates passed within 90 days. This variability decreased at testing within 180 days of eligibility, with 75 (93.8%) of the 80 measures reporting 90% or more of graduates passed at that point. **Table 4** provides a distribution of annual nursing program pass rates.

Of the 80 measures of annual nursing programs pass rates over the 3-year period, 18 measures had FTPRs of 85% or lower and were identified as at risk. Of the 18 at-risk measures, 14 (77.8%) had a second-time pass rate above 90% and 16 (88.9%) had a third-time pass rate above 90%. **Table 5** provides annual pass rates for selected nursing programs identified as at risk. There was a wider variability in pass rates within 90 days for these 18 annual nursing program rates, with only one program achieving a pass rate above 90% within 90 days. However, by 180 days, 13 (72.2%) had pass rates exceeding 90%.

TABLE 3

Aggregate Results: Number of Attempts and Duration Until Success

Measure	Total	2013	2014	2015
Number of testers	4,045	1,340	1,383	1,322
First-time pass rate	3,583 (88.6%)	1,181 (88.1%)	1,239 (89.6%)	1,163 (88%)
Pass rate by second attempt	3,887 (96.1%)	1,290 (96.2%)	1,335 (96.5%)	1,262 (95.5%)
Pass rate by third attempt	3,964 (98%)	1,319 (98.4%)	1,356 (98%)	1,289 (97.5%)
Pass within 90 days	3,545 (87.6%)	1,170 (87.3%)	1,234 (89.2%)	1,141 (86.3%)
Pass within 180 days	3,854 (95.3%)	1,272 (94.9%)	1,325 (95.8%)	1,257 (95.1%)
Pass within 365 days	3,959 (97.6%)	1,307 (97.5%)	1,354 (97.9%)	1,298 (98.2%)

TABLE 4

Distribution of Annual Nursing Program Pass Rates (*N* = 80)

Nursing Program Pass Rate	First-Time Pass Rate	Pass Rate by Second Attempt	Pass Rate by Third Attempt	Pass Rate Within 90 Days	Pass Rate Within 180 Days
65% to 69%	0 (0%)	0 (0%)	0 (0%)	3 (3.8%)	0 (0%)
70% to 74%	3 (3.8%)	0 (0%)	0 (0%)	3 (3.8%)	0 (0%)
75% to 79%	4 (5%)	0 (0%)	0 (0%)	5 (6.3%)	0 (0%)
80% to 84%	10 (12.5%)	1 (1.3%)	0 (0%)	10 (12.5%)	2 (2.5%)
85% to 89%	19 (23.8%)	5 (6.3%)	2 (2.5%)	13 (16.3%)	3 (3.8%)
90% to 94%	21 (26.3%)	18 (22.5%)	5 (6.3%)	23 (28.8%)	26 (32.5%)
95% to 100%	23 (28.8%)	56 (70%)	73 (91.3%)	23 (28.8%)	49 (61.3%)

DISCUSSION

This study had several limitations. The data reports from the board of nursing only included the graduation month and year, not the specific graduation day. Graduation dates were based on the end of the academic calendar for the specific nursing program either identified by the website or contacting the nursing program for the information. This may have influenced the findings of duration until success. The data reports for graduation date and nursing program attended are based on candidate report on the application for licensure. Although efforts were made to correct any known errors, some graduates could have been attributed to the wrong nursing program, affecting the calculation of individual nursing program pass rate results.

In addition, this study was limited to one state, although the findings in this study are reflected in the Canadian national data presented in **Table 2**. Although this study informed testing patterns of Oregon candidates and has the potential to engage a national dialogue to consider measures other than the FTPR as an outcome measure for educational programs, it is recommended that this study be replicated in other states to track testing patterns. Oregon is a small state and there may be less impact to smaller states or states with smaller numbers of nursing programs to consider a different academic metric. However, even in smaller states, the impact or cost to the individual student or program can be considerable, resulting from implementation plans to correct FTPRs. In the study by Hooper and Ayers (2017), 61 of the 88 schools in Texas required to submit a plan during to FTPRs in the period 2013-2015 were RN programs. An analysis of these schools' second-time pass rates or pass rates within 6 months in determining a need for a plan would be revealing and a contribution to understanding the evidence of FTPRs as an academic metric.

First-time pass rates, as well as when graduates first test, are influenced by tester variability; this was especially true for pass rates within 90 days of eligibility, which demonstrated a wider variability influenced by when graduates decide to test. In this study, over 95% of those who tested during the observed 3-year period passed the NLCEX-RN within 180 days of graduation. This finding, coupled with the ability to retest as soon as 45 days, provides support that there are other reasonable measures of entry into the workforce than the FTPR and support the advocacy positions presented in earlier nursing literature to consider outcome measures other than the FTPR. For all years, 96.1% of testers passed by the second try. The overwhelming majority of at-risk schools as identified by lower FTPRs had strong aggregate pass rates upon second attempt. It is recommended that second- and third-time pass rates within a year or

TABLE 5

Annual Pass Rate Data for Selected At-Risk Nursing Programs

Nursing Program	Cohort Size	First-Time Pass Rate (%)	Pass Rate by Second Attempt (%)	Pass Rate by Third Attempt (%)	Pass Rate Within 90 Days (%)	Pass Rate Within 180 Days (%)
1	237	81.43	94.94	97.47	83.97	95.36
2	20	75	90	95	80	95
3	29	75.86	89.66	100	72.41	93.10
4	170	81.76	92.94	96.47	80	90
5	35	82.86	91.43	97.22	82.86	91.43
6	16	81.25	100	100	93.75	93.75
7	21	80.95	95.24	100	80.95	85.71
8	20	85	95	100	80	100
9	37	78.38	89.19	97.30	72.97	89.19
10	190	82.11	93.68	95.79	82.63	93.16
11	13	84.62	92.31	92.31	84.62	92.31
12	102	81.37	92.16	95.10	79.41	92.16
13	18	72.22	88.89	88.89	77.77	83.33
14	47	80.85	95.74	97.87	65.96	91.49
15	190	78.42	92.63	98.42	75.79	91.58
16	196	81.12	93.87	97.45	84.18	93.37
17	71	73.24	83.10	88.73	73.24	81.69
18	19	73.68	89.47	94.73	68.42	84.21

pass rates within 6 months be considered as academic metrics for program outcome measures and for accreditation purposes. It is strongly recommended that nursing programs and state and national accrediting bodies assess pass rates upon second attempt before initiating admission, enrollment, or progression policy changes. Further understanding of patterns of successful licensure testing and readiness to enter the workforce will assist in selecting reasonable, evidence-based measures to inform curricular and program policies and maximize resource utilization and expenses for nursing students, nursing programs, and regulatory agencies. As nurse educators, we expect our graduates to use the best evidence and outcome measures available in clinical practice situations. It is time to reconsider whether FTPRs are the best outcome measure of academic quality of prelicensure nursing programs.

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Nursing workforce diversity: Promising educational practices

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ABSTRACT

Background: Nursing workforce diversity is a national priority for providing culturally competent care and contributing to improved health equity. While nurses from underrepresented populations are increasing in the nursing workforce, the distribution of nurses in the United States is still not representative of the population.
Purpose: The purpose of this paper is to describe the current state of workforce diversity in Western states and identify promising practices from programs located in Arizona, California, Colorado, and Oregon that are focused on improving nursing workforce diversity.
Methods: Four innovative programs to address nursing workforce diversity are presented. Each project has unique situations and approaches to improving admission, retention, and graduation of students underrepresented in nursing. Similar approaches each project used include holistic admission review, academic and student support, financial support, and mentoring.
Conclusions: These projects contribute to knowledge development related to improving nursing workforce diversity for other colleges, universities, and states to consider. Improving nursing workforce diversity is a priority issue that could lead, through collective impact, to resolving health inequities nationally.

Introduction

There has been a national focus on improving nursing workforce diversity as a key strategy to resolve health inequities and to further advance our profession as one that contributes to social justice, is nondiscriminatory, and reflective of the communities we serve. The Institute of Medicine (now Academy of Medicine) (2010) report *Future of Nursing: Leading Change, Advancing Health* developed several recommendations for changes in nursing education, practice, and research, one of which was to make workforce diversity a priority. While minority nurses are increasing in the nursing workforce, the distribution of nurses in the United States (U.S.) is still not representative of the population. The Western states have the largest representation of Hispanic and American Indian nurses and although progress has been made towards increasing workforce diversity, theses states continue to have the largest gaps in Hispanic nurse representation in the workforce (Xue & Brewer, 2014). Young, Bakewell-Sachs, and Sarna's (2017) assessment of the current state of education, practice and research in the Western states also recommended prioritizing policy efforts to improve workforce diversity that could lead to improved health equity in our Western states. The National Advisory Council for Nursing Education and Practice (2013) recommended dissemination of best practices to improve nursing workforce diversity. The purpose of this paper is to describe the current state of workforce diversity in Western states and identify promising practices from four innovative programs located in Arizona, California, Colorado, and Oregon that are focused on improving nursing workforce diversity. All four programs have been funded through the Health Resources Services Administration (HRSA) Nursing Workforce Diversity (NWD) grant structure from 2017 to 2021.

Current state of nursing workforce diversity

There are state and national sources of nursing workforce data that can provide information on the diversity of the current workforce. Zangaro, Streeter, and Li (2018) evaluated trends from the American Communities Survey of minority (race and ethnicity other than non-

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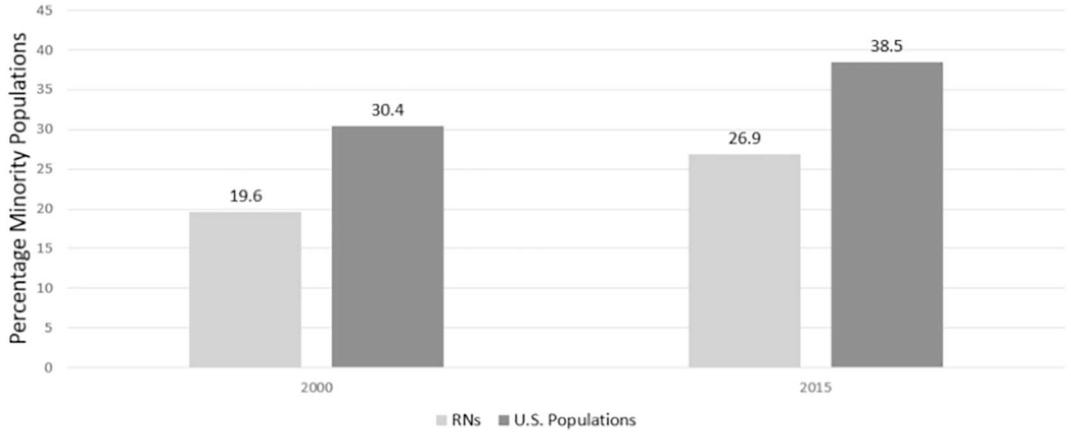

Fig. 1. HRSA health workforce data 2000 and 2015: registered nurse (RN) and population percentage minority populations (Zangaro et al., 2018).

Hispanic white) nursing demographics in comparison to the U.S. population from 2000 to 2015. Although growth in the minority registered nurse (RN) workforce has lagged in comparison to U.S. minority population, the proportion of growth for the minority RN workforce rose 38% over these 15 years from 19.6% to 26.9% compared to a 27% proportion of growth for U.S. minority populations from 30.4% to 38.5% (see Fig. 1).

However, growth slowed between 2015 and 2017. The National Nursing Workforce Survey is a biennial nursing workforce survey by the National Council of State Boards of Nursing and The National Forum of State Nursing Workforce Centers and is based on a sample of active nursing licensees (Smiley et al., 2018). Comparisons across racial/ethnic groups demonstrate that from 2015 to 2017 the RN workforce has seen little to modest change (Fig. 2).

Additional data sources identify demographic trends related to new graduates entering the workforce. The American Association of Colleges of Nursing (2018) provides annual diversity data for nursing graduates by baccalaureate (BSN) and graduate degree and Fig. 3 demonstrates growth in both BSN and graduate minority diversity in the decade from 2008 through 2017.

The Campaign for Action (2019) monitors progress of the Academy of Medicine recommendations and provides dashboard data comparing the racial and ethnic composition of the general population with pre-licensure nursing graduates from 2011 and 2017. Data are available for all states and evaluating your state data dashboard can be particularly useful to focus diversity efforts to achieve parity with the state population. Table 1 provides the data comparison for Arizona, California, Colorado and Oregon, the four western states that comprise the focus of this paper.

Description of projects

The four projects illustrated in this paper each represent a unique approach to improving workforce diversity. The programs have similar features including financial support for diverse nursing students, academic and student support, mentoring, and a focus on implementing holistic review admission processes as supported by the National Advisory Council for Nursing Education and Practice (2013). Each program consulted with a healthcare professional organization to facilitate implementation of holistic review, a crucial strategy to increasing nursing workforce diversity. Holistic admission review includes assessing the applicant's experiences and attributes in addition to academic metrics to identify applicants' potential contribution to the profession of nursing (Wros & Noone, 2018). Each program was at a different point on the continuum of implementing a holistic review process and consulted with the American Association of Colleges of Nursing (2019) or the National League for Nursing (2017) to further their journey. Since diverse nursing students may be impacted by social determinants of education (SDE) or additional barriers related to admission, retention and progression (Graham, Phillips, Newman, & Atz, 2016), each program developed promising practices to support student recruitment, admission, retention and success (Gates, 2018). Each program, in addition, developed a sustainability plan to transition best practices developed into the fabric of the organization after the grant period ended.

Each of these programs exist in a public university or nursing organization within an increasingly diverse state and evolved out of the institution's commitment to diversity, health equity, and public accountability. Active support and commitment to diversity initiatives,

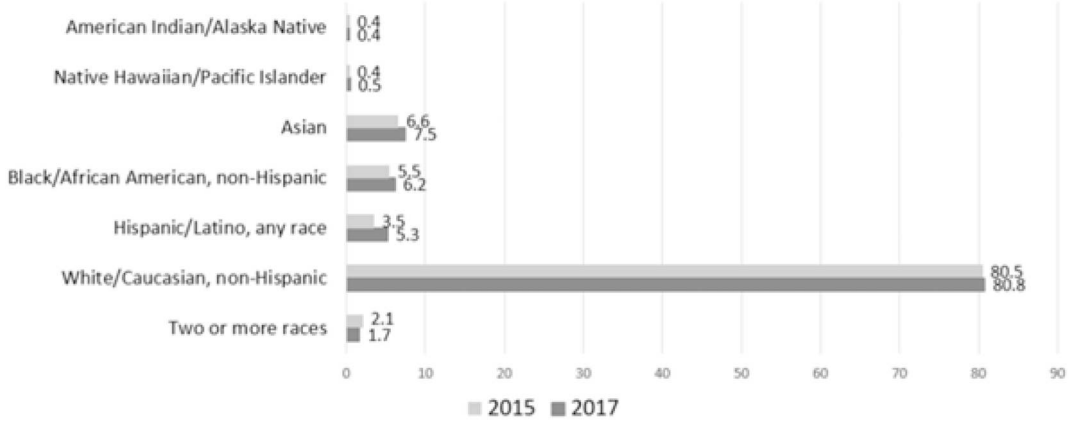

Fig. 2. Racial and ethnic distribution of RN workforce 2015 and 2017* (Smiley et al., 2018).
*Data cells do not add up to 100% because of missing responses. Weighted sample calculations were used.

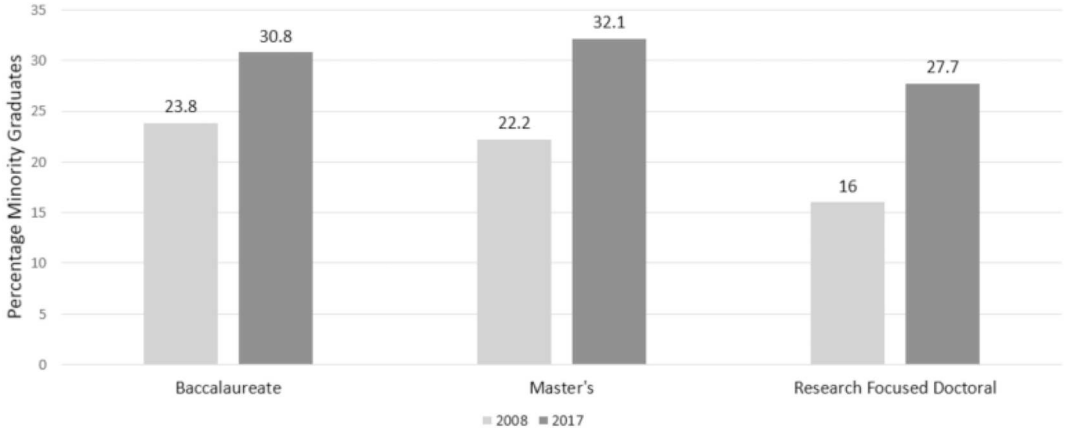

Fig. 3. Percentage minority graduates from generic baccalaureate, master's and research focused doctoral programs 2008 and 2017 (AACN, 2018).

such as these projects, include having institutional commitment and academic nurse leader championing. Ongoing faculty development, student/faculty dialogue and disseminating successful outcomes are key to maintaining buy-in.

The first project, the *Arizona Nursing Inclusive Excellence* (ANIE) program reduces barriers to undergraduate and graduate education for underrepresented students in the dominant cultures in Arizona: American Indian, Hispanic, rural, and border residents through an academic enrichment program that includes summer intensives, a writing skills improvement program, faculty and peer mentoring, and a student self-care and resiliency program. The second project, *Enrichment Markers of Better Relationships, Academics, & Cultural Enhancement* (EMBRACE) describes a program for undergraduate and graduate students who reflect the underserved communities in which graduates practice in California and describes the promising practice of a nurse coach who makes rounds to classes to provide support for students and structured seminars on time management and study skills. The third project presents a collaborative of a state nursing workforce center and six rural and urban associate degree (ADN) and BSN programs in Colorado and focuses on the promising practice of a mentoring institute to prepare nursing mentors for nursing students from these 6 schools of nursing. The fourth project, *Advancing Health Equity through Student Empowerment & Professional Success* (HealthE STEPS), presents promising practices to implement a multi-campus undergraduate initiative to improve workforce diversity and discusses mentorship, career planning, case management and deployment of holistic admission strategies through partner schools throughout Oregon.

Table 1
Comparison of registered nurses (RN) graduates from 2011 and 2017 in comparison to state population in Arizona, California, Colorado and Oregon.

	Arizona				California			
	2011		2017		2011		2017	
	Nursing school graduates	General population	Nursing school graduates	General population	Nursing school graduates	General population	Nursing school graduates	General population
White	62.9%	57.5%	57.8%	54.9%	37.2%	39.8%	35.4%	37.2%
Hispanic	12.2%	29.9%	22.4%	31.4%	18.0%	38.0%	24.3%	39.1%
Asian	4.0%	2.8%	4.7%	3.5%	26.1%	13.2%	25.4%	14.5%
American Indian or Alaskan Native	1.5%	4.0%	1.6%	4.0%	0.7%	0.4%	0.5%	0.4%
Black or African American	3.3%	3.8%	4.6%	4.3%	1.4%	2.5%	3.9%	2.7%
Native Hawaiian or other Pacific Islander	0.2%	0.2%	0.7%	0.2%	0.9%	0.4%	1.2%	0.4%
Two or more races	0.9%	1.8%	3.5%	2.0%	4.7%	5.8%	4.5%	5.6%

	Colorado				Oregon			
	2011		2017		2011		2017	
	Nursing school graduates	General population	Nursing school graduates	General population	Nursing school graduates	General population	Nursing school graduates	General population
White	73.6%	69.8%	73.1%	68.3%	76.7%	78.2%	71.9%	75.8%
Hispanic	9.8%	20.8%	12.0%	21.5%	4.2%	12.0%	8.3%	13.1%
Asian	3.1%	2.8%	3.8%	3.2%	5.2%	3.8%	6.0%	4.5%
American Indian or Alaskan Native	2.6%	3.8%	2.7%	4.0%	1.4%	1.1%	0.6%	1.1%
Black or African American	1.0%	0.6%	0.6%	0.6%	0.6%	1.7%	1.3%	1.9%
Native Hawaiian or other Pacific Islander	0.2%	0.1%	0.2%	0.1%	0.5%	0.3%	0.4%	0.4%
Two or more races	0.4%	2.0%	2.4%	2.3%	1.8%	2.8%	6.7%	3.2%

Table 2
2015 Arizona state population, RN, and UACON demographics comparison (Tabor et al., 2015; The U.S. Census Bureau, 2015).

Race	State population	Arizona RNs	UACON
Hispanic	30.7%	6.2%	10.2%
American Indian/Alaska Native	5.3%	1.1%	0.7%
Black/African American	4.8%	2.4%	4.7%
Native Hawaiian/Pacific Islander	0.3%	< 0.1%	0.1%
Asian	3.4%	4.8%	5.7%
2 or more races	3.4%	0.1%	0.2%

Arizona Nursing Inclusive Excellence (ANIE)

State nursing workforce diversity statistics

In 2015, multiple factors converged to create a critical need for the University of Arizona's College of Nursing (UACON) program to address a growing shortage of nurses from backgrounds consistent with the dominant racial, ethnic, geographical, and cultural populations of Arizona. State demographics indicated that while Arizona's Hispanic population comprised 30.7% of the state's population in 2015 and American Indians comprise 5.3% of the population (Tabor et al., 2015), the Arizona's nursing workforce did not equally represent those socio-demographic characteristics.

Program description

The UACON's 2015 total student population further complicated these trends, graduating a significantly disproportionate number of nurses from Arizona's dominant cultures across all programs (Table 2). In addition, students from underrepresented minorities (URM) struggled to complete UACON's programs with a much lower retention rate than students from other backgrounds (28–44% vs 90%).

Given these sobering statistics and the UACON's land-grant mission to improve health equity and the overall health of Arizona's population, the strategic plan/call to action by the university and academic health sciences center to improve diversity and inclusion across the health disciplines, the faculty and administrative team clearly recognized the to address the retention and graduation rates of students representative of the state's dominant cultures but underrepresented in nursing – Hispanic, American Indian, rural, and border populations – by reducing the socioeconomic, academic, and environmental barriers to nursing education. While program-specific barriers were identified for each of UACON's programs (pre-licensure, RN-MS, DNP, and PhD), the lack of shared social identity and the experience of being able to see yourself within others in your social/student group (Adams & Bell, 2016) was identified consistently by student and alumni surveys across all graduate and undergraduate programs, providing the foundation for the Arizona Nursing Inclusive Excellence (ANIE) program's support structures and processes.

ANIE provides funding support for 49 students annually. Four cohorts of students were created – Voyagers (pre-nursing undergraduates, n = 15/year), Vanguards (BSN, n = 24/year), RN-Career Advancement and Transition (CAT) Scholars (AD/BS to MS program, n = 6/year), and Pinnacle Scholars (DNP and PhD, n = 4 year) – each with their own set of academic enrichment programming. These cohort groups provide a place where students "fit in" with nursing students who come from similar backgrounds, receive social/emotional support from peers, and have role models from advanced program cohorts. Through these shared experiences, students report an emerging confidence, strength, and commitment. Funding supports scholarships, tutoring, the summer intensive workshops and coaches.

Each student cohort receives academic enrichment programming that includes intensive writing support offered by a PhD-prepared Academic Writing Coach. A developmental and strengths-based approach is used to address writing competencies that progressively scaffold writing outcomes. BSN students advance from grammar/formatting basics (freshman year) through idea formation/generation (sophomore year) to literature analysis (junior year), to synthesis (senior year) in a set of ongoing workshops and small group and individual mentoring sessions. Strategies for graduate students are more individually tailored, moving students gradually through a set of exercises that are designed to transition their focus from patient care documentation to scientific and expository writing. Finally, the writing coach works with faculty to (a) clarify writing competencies/expectations across all of our programs, (b) create scoring rubrics that focus on substance rather than format, (c) standardize feedback methods that reinforce writing excellence, and (d) identify writing risk assessment methods that will improve early intervention strategies across all students.

Table 3
ANIE academic enrichment programming elements.

Social determinant of education	Interventions (program code)
Educational opportunity	High school summer programs (Vo) Peer mentoring (Vo, Va, C, P) STEM tutoring (Vo) Writing skills development (Vo, Va, C, P) Summer intensive (Vo, Va, C, P) Mock interview prep (Vo) Pass through admissions (Vo) Concept mapping and critical thinking (C) Conceptual analysis and synthesis (P)
Economic stability	Scholarships (Vo, Va, C, P) Exam preparation (Va, P) Financial literacy/debt management workshops (Vo, Va, C, P) Food pantry (Vo, Va) Emergency loans (Vo, Va, C, P)
Socioeconomic opportunity	Professional role development (Vo, Va, C, P) Role advancement and transition mentoring (C, P) Professional/alumni mentoring (Vo, Va, C, P) Career counseling (Va, C, P) Lifeskill development (Vo, Va, C, P) Intrusive advising (Vo, Va, P) Leadership skills development (Va)
Social inclusion	Unconscious bias training for students, faculty and staff Faculty development to improve inclusivity Biweekly meetings and cohort development (Vo) Monthly meetings and cohort development (Va, C, P) Campus culture survey Participation in on-campus student and faculty organizations (Vo, Va, faculty) Consultation with internal and external partners
Health equity	Summer intensive clinical experiences in medically underserved communities (Va) Cultural immersion experiences (Va) Clinical placements in medically underserved communities (P)

Key: Vo = Voyager Program, Va = Vanguard Program, C = RN CAT Program, P = Pinnacle Program.

Additional academic enrichment opportunities are outlined in Table 3. Faculty/staff teams provide ongoing mentoring to improve life skill development, student/academic success skills, role development/clarification, and professional skill development. An Academic Success Coach, a psychiatric/mental health nurse practitioner, works with students to reduce stress and improve wellbeing through regular sessions that build self-care skills to improve resilience.

All cohorts are required to attend a Summer Intensive Experience, which prepares students to meet the challenges of the upcoming year of coursework and consolidate the teaching/learning of the previous academic year. The Voyager and Vanguard cohorts participate in an 8-

week, 40 h/week Summer Intensive each year of their undergraduate education. This experience allows time and attention to build competencies in STEM content areas and improve writing skills. Students also expand clinical competencies, critical reasoning and clinical decision-making skills through sets of coordinated and integrated activities that are designed to increase confidence, speed, and precision necessary to be successful. During their first summer, students build math and science skills, basic critical thinking and reasoning, and interpersonal verbal and written communication skills and interacting with faculty mentors, professional staff, and patients and families. During year 2, advanced communication skills are introduced that include coaching/teaching and motivational interviewing. Students practice these skills in simulation as well as in clinical settings. Students prepare to move into their BSN coursework by learning basic patient care skills, beginning clinical reasoning, math for meds, and pathophysiology reviews. During year 3, students prepare for their advanced/high acuity coursework using a weekly, progressive patient simulation exercise that focuses on team communication, interprofessional role development, and advanced clinical decision-making. Students also build primary care skills by working in tribal community settings. CAT and Pinnacle Summer Intensives (one summer weekend) advance scientific/professional writing skills, prepare for career transition, and develop leadership potential. The Pinnacle summer intensive also engages doctoral students in a reflective exercise that explores the purpose/meaning of their own educational journey and the decision to pursue a doctoral degree that they use as a basis of self-care throughout the duration of the program.

A key component of the undergraduate ANIE program is the pass-through/guaranteed admissions process for the Voyager pre-nursing students for all students successfully completing the two years of preparatory work. Pass-through admission for the duration of the four-year grant period allowed the faculty/administrative teams to not only pilot holistic admissions criteria but to develop, refine, and then tailor our academic enrichment programs to ultimately improve workforce diversity.

Outcomes and sustainability

To date, pass-through admission for has been offered to 100% of the Voyager students with all students continuing to move successfully through the BSN program. Our first “complete” cohort of Voyager students (n = 5) continue to excel in their coursework and is set to graduate with their BSNs in May 2020. Current retention in ANIE is 97.6% with a graduation rate of 98.8% in the first two years of the grant. To date, our BSN program graduates have a 93% first-time NCLEX pass rate and DNP graduates have a 100% APRN certification rate consistent with UACON norms.

Sustainability planning include systematically infusing intrusive advising across the entry programs, stepped up advising/monitoring in graduate programs, and ongoing support of a student success center in the Office of Student and Community Engagement that builds in successful programming strategies. In addition, identifying donors to sustain the scholarship programs and developing a tuition model for summer intensive that would be eligible for scholarship/loan federal aid for selected students are additional sustainability strategies currently underway.

California: Enrichment Markers of Better Relationships, Academic, and Cultural Enhancement (EMBRACE)

State nursing workforce diversity statistics

California is a diverse state with a majority minority population as seen in Table 1. Forty-eight percent of employed RNs in California are of minority background, with a race or ethnicity other than non-Hispanic white (California Health Care Foundation, 2017). However, there is a sizable underrepresentation of Hispanic nurses in the workforce at 7% of the RN workforce in 2017 as compared to 39.1% of the California general population.

Program description

California State University, Fullerton School of Nursing (CSUF-SON) is located in Southern California (CA) and has approximately 1100 students enrolled in multiple undergraduate and graduate programs, including a prelicensure BSN, a BSN completion program for nurses with an Associate's Degree (ADN-BSN), four master's programs and a DNP program (through the Southern CA CSU DNP Consortium). The CSUF-SON students are diverse in ethnicity and background and many are first generation college students and URM. The diversity of CSUF-SON nursing students mirrored the findings of the California graduating RN population seen in Table 1 with an underrepresentation of Hispanic students in comparison to the state population. CSUF-SON students are affected by SDE from surrounding poverty-stricken, educationally disadvantaged communities that may influence persistence to graduation (Fiebig, Braid, Ross, Tom, & Prinzo, 2010), especially in the ADN-BSN group. There are multiple demands of nursing education, including clinical rotations, rigorous coursework, in addition to the personal demands that contribute to student stress, anxiety, and life balance issues (Barbosa et al., 2013). Intrinsic factors such as self-efficacy, resilience, and emotional intelligence foster psychological well-being along with the external factors of support from family, friends, and faculty (Khallad & Jabr, 2016; Schaub, Luck, & Dossey, 2012). Students without family or peer support are at higher risk and may present with increased stress and decreased coping behaviors (Khallad & Jabr, 2016). The overarching goals of the EMBRACE project are to prepare a more culturally competent professional nursing workforce to care for the diverse populations in our local communities and to foster recruitment and retention of URM students. Evidence-based strategies based on these concepts, adaptations of successful models that support practicing nurses, and Tinto's theory of student retention (Tinto, 2012) were utilized for this project (see Table 4). In Tinto's theory, successful elements for student retention include providing consistent student expectations and feedback so students know what to do to succeed, academic and social student support, and involvement with peers and faculty to enhance a sense of belonging. Funding supports scholarships, an academic support team including an academic coach and writing tutors, psychosocial support through the nurse coach and diversity support team, and educational symposia on cultural competency. In the first two years of the grant, 116 nursing students have received financial support.

Strategies to facilitate development of cultural competency include enhancing students' awareness of vulnerable populations and cultural

Table 4
EMBRACE promising practices and interventions for each social determinant of education.

Social determinant of education	Interventions
Social inclusion	Mentoring for students Nurse coach Career coach Diversity support team Cultural learning activities in the curriculum Cultural training for faculty and staff – Diversity and Inclusion Symposium Participation in leadership opportunities
Educational opportunity	Learning support (Academic coach) Writing tutors Holistic admissions Consultation with external partners
Socioeconomic opportunity	Scholarships Nurse coach resource referral

humility. Examples of learning activities include participation in an annual SON Poverty Simulation event, interprofessional education (IPE), and community engagement (e.g. clinics in the park, health fairs, rural clinical placements, and working in the University's Center for Healthy Neighborhoods located in a low socioeconomic neighborhood). Cultural competency training for faculty and staff was also initiated to better support students. A Diversity and Inclusion symposium was offered for students, faculty and alumni after year one of the grant with 180 attendees.

Holistic admission processes have been developed and are being implemented this current academic cycle. In addition to the strategies of holistic admissions and financial support, strategies to enhance recruitment and retention of URM students included academic resources, psychological resources and leadership opportunities. Academic resources consist of an Academic Coach, a Writing specialist, and a Career Coach, which provide support for study skills, time management, writing, and career planning. A partnership with Osher Lifelong Learning yielded volunteer writing tutors and a Career Coach for the SON. Psychosocial resources include a Nurse Coach, the Diversity Support Team, and peer mentors. Persistence to leadership opportunities in CSUF-SON were encouraged, such as shared governance, involvement in the Nursing Student Association (NSA) and Sigma Theta Tau.

One of the most promising and popular resources is the Nurse Coach. The coach, a doctorally prepared faculty member with a background in mental health and wellness, uses a holistic approach of incorporating the student's experience while providing support. The Nurse Coach role was selected as a strategy and although information regarding the use of this role in academia was limited, nurse coach support in health care organizations has been found effective in mediating stress and anxiety among nurses through use of various strategies, such as mindfulness (Barbosa et al., 2013; Dossey, 2015; Schaub et al., 2012). The Nurse Coach "rounds" daily to check in with students on campus in addition to meeting with student referrals that occur through faculty or self-referral. Meetings occur individually or in small groups and the Nurse Coach is also accessible to online learners via Zoom meetings. A variety of strategies are employed to assist students to achieve life balance, including mindfulness, meditation, exercise, nutrition, and sleep hygiene (Barbosa et al., 2013). The coach also assists students to navigate university and community resources to address food insecurity, financial concerns, and family situations; refers to counseling; and provides consultation with faculty related to high-risk students.

Outcomes and sustainability

In the two years since project inception, over five hundred students have participated in one or more of the EMBRACE resources. The nurse coach has had over 200 student encounters since implementing this role. Student resource satisfaction survey results from 2018 revealed 4.8/5 (Likert Scale) satisfaction with nurse coach support. The EMBRACE project has afforded an innovative role of nurse coach to help students find ways to cope with the stressors inherent to the nursing school experience. Persistence to graduation in the undergraduate program since grant award for pre-licensure students is 90% and for the RN-BSN (the largest program with 725 students) is 85% with a decrease in attrition from 32% to 15%.

In regards to sustainability of the strategies that have been implemented thus far, the EMBRACE team along with the SON leadership is collaborating with the university's Human Resources, Diversity and Inclusion division to assist the SON to provide ongoing diversity support and annual educational symposia. The SON is also communicating with the college/university leadership on how the nurse coach role can be continued through service units as part of faculty assignment. Recommendations will be made and brought to the faculty prior to the end of this academic year (Year 3 of the grant) along with supportive data so these essential academic (academic coach, writing specialist and tutors) and psychosocial student resources (nurse coach, diversity support), as well as the holistic admissions processes can be maintained without interruption.

Colorado Center for Nursing Excellence: a statewide six institution nursing student diversity collaborative

State nursing workforce statistics

According to the most recent US Census data (U.S. Census Bureau, 2018), Colorado's population is 31.4% ethnically and racially diverse with the largest diverse population being Hispanic at 21.3%. The Colorado State Demography Office (2018) forecasted that by 2050, 48% of its population will be ethnically and racially diverse. Colorado's current diverse nursing workforce falls short of these statistics with approximately 6% of the nursing workforce being Hispanic (Colorado Center for Nursing Excellence, 2017). This demonstrates a clear gap that needs to be addressed. Table 1 demonstrates a growth in Colorado minority nurse graduates from 2011 through 2017, although a gap in Hispanic new nurse graduates to population persists.

Program description

Recognizing the need to take action, the Colorado Center for Nursing Excellence (Center) used a statewide approach to address the diversity nursing workforce shortage. The Center partnered with six nursing programs/schools across the state, three BSN and three (ADN) programs from both rural and urban areas, reaching across a 250-mile span. Two schools are private and four are public, all varying in size. Two schools are designated as Hispanic Serving Institutions. Participation from schools was garnered fairly easily once stakeholders realized the project aligned with their institutional mission and goal to increase their overall diversity enrollment.

Similar to other projects described, the Center's NWD project has multiple components to ensure the success of diverse nursing students. The project addresses SDE, including mentoring, academic success program for students, resource navigation, cultural competence training and holistic admissions (see Table 5). Funding supports student stipends for educational expenses, resource navigation and services for SDE, emergency funds for SDE not covered by resource partners, student tutoring, holistic admissions training and cultural competence assessment and training. A total of 40 undergraduate students are enrolled annually (120 students to date). The first component of this project is a robust mentoring program that addresses both mentor and student needs. Clinical nurses of all specialty areas and various cultural

Table 5
Colorado Center for Nursing Excellence: promising practices and interventions for each social determinant of education.

Social determinant of education	Interventions
Social inclusion	Mentoring for students Coaching for mentors Peer student networking group Intercultural competency assessment Intercultural competency training Consultation with external partners
Educational opportunity	Academic Success Course Individual academic tutoring Holistic admissions Consultation with external partners
Socioeconomic opportunity	Monthly stipends Emergency funds Financial counseling Resource navigation Consultation with non-profit social service organizations

backgrounds are trained to be effective mentors in an intensive two-day workshop followed by eight sessions of group coaching over eight months. Coaching promotes the development of a peer support network to help address any challenges mentors may face with their students and allows mentors to celebrate successes together. Coaching keeps mentors engaged and motivated as they build student mentoring relationships and it reinforces skills learned. Mentors work with students for a total of one year. One-third of trained mentors return year after year for consecutive mentoring assignments.

In addition to mentoring, student academic and non-academic needs are addressed using other resources. First, a one-day Academic Success Course is required of all enrolled. The curriculum was developed based on needs identified by partner schools. During this course, students learn about the project's purpose and expectations, the value of the mentoring program, and receive multiple tips for success. Students build a peer networking group, encourage one another and share resources throughout the year. Students participate in a designated social media platform with 71% of the students actively engaged, building friendships and support systems lasting after the completion of the program. Second, individual academic tutoring is available to all students and the need for tutoring is assessed by their mentors. The Center coordinates appropriate tutors to address academic challenges. Third, students receive monthly stipend funds to help with educational expenses. Lastly, the center partners with two non-profit organizations, WorkLife Partnership and Catholic Charities of Pueblo, who provide resource navigation related to SDE. The resource navigator works one-on-one with students to assess their non-academic needs, identify barriers, provide access to community resources, financial coaching and other services based on student needs with a goal of increasing student retention rates. Examples of services provided include: 1) financial counseling, 2) child care, 3) food pantry, 4) housing search, 5) supportive services, 6) clothes/supplies, 7) rental assistance, 8) transportation assistance, 9) utility resources, 10) legal assistance/referrals, 11) employment services, 12) lifeline phone assistance, 13) Supplemental Nutrition Assistance Program (SNAP), and 14) cooking classes.

Another component of the Center's project is to educate partner schools about holistic admissions. Schools are encouraged to review and revise admissions processes from a holistic approach to increase diversity enrollment. Activities to support this change include annual educational workshops, biannual webinars, and regular coaching with deans, directors, and other admissions stakeholders. Partner schools are in various stages of this change and all are successfully implementing holistic admissions.

The final component to the Colorado project focuses on intercultural competence training. Annual training workshops have been conducted by the Spring Institute for Intercultural Learning to heighten awareness and learning around cultural concepts such as implicit bias, privilege, and health equity to assist educational institutions develop culturally sensitive and inclusive environments. Additionally, the Center provides intercultural competence development for nursing faculty through a series of assessments and coaching using the Intercultural Development Inventory (IDI®) assessment tools (IDI, 2019).

Outcomes and sustainability

All components of the Colorado NWD project work synergistically to ensure student success and institutional change with a goal of improving the nursing workforce diversity gap. Attrition rate since inception of this grant is 9%. One-third of the attrition rate was related to illness, death in the family or challenges with SDE. Two-thirds were simply attributed to academic challenges. Although 9% attrition is higher than hoped, many students have commented that grant services contribute their success to this program. To date, a total of 27 students have received resource navigator services for SDE. Ninety-five percent of students reported a significant decrease in stress that allowed them to focus on school. Of those who have graduated, there has been a 100% NCLEX-RN pass rate (91% response rate).

Each nursing program has created sustainability with holistic admissions implementation and are currently working on sustainable action plans to build culturally inclusive educational environments. The Center has trained over 120 mentors who can continue mentoring.

Oregon: Advancing Health Equity through Student Empowerment and Professional Success (HealthE STEPS)

State nursing workforce diversity statistics

Oregon is experiencing a gap in nursing workforce diversity where almost 12% of the population is Hispanic compared to 3.4% of RNs (Oregon Center for Nursing, 2017). Improving nursing workforce diversity requires schools of nursing to expand their efforts to enroll, retain, and graduate nurses from underrepresented populations.

Program description

Oregon Health & Science University School of Nursing is the only statewide public BSN nursing program with five campuses throughout the state. The HealthE STEPS (Advancing Health Equity through Student Empowerment and Professional Success) 2.0 Statewide program is grounded in an evidence-based model and employs best practices to addressing the SDE which prevent disadvantaged students from entering and graduating from nursing programs. The HealthE STEPS model focuses on the determinants of educational opportunity, economic stability, socioeconomic opportunity, social inclusion, and health equity. The initial HealthE STEPS program was based on an effective nursing diversity program where a comprehensive approach was utilized to attract and support students to thrive in a nursing education program (Wros & May, 2013) and was successfully launched on two of the five campuses in 2013–2016 (Noone, Wros, Najjar, Cortez, & Magdaleno, 2016). HealthE STEPS 2.0 implemented the project in 2017 on all campuses. The most promising practices identified in this model include bilingual staff called diversity coordinators, case management with individualized academic coaching, and the scholarship outreach program. The funding model includes salary support for diversity and faculty coordinators on each campus, student scholarships and stipend support for NCLEX and graduate certification materials, and financial support for student, faculty, and staff training on topics related to diversity, including unconscious bias training and consultations on holistic admission review. HealthE STEPS 2.0 utilized these best practices with a focus on improving financial, academic, and social support for retention of disadvantaged students. This was done by using various strategies and interventions to addressing the five SDE and barriers to students' success (Table 6). HealthE STEPS has enrolled 38–40 undergraduate scholars each year across the five campuses and a total of 12 graduate students (4 in 2018.and 8 in 2019) since the HealthE STEPS 2.0 was launched in 2017. However, many of the interventions developed, such as Mock Interviews and workshops on nursing application, financial literacy, and scholarship applications, benefit all students.

Interventions developed and implemented to maximize retention and promote economic stability and socioeconomic opportunity included case management and mentorship. Diversity coordinators with the help of faculty coordinators case manage students to provide early intervention and referral to academic support services. The mentorship program utilizes an evidence-based model in which each student is assigned a mentor. Students meet with their mentor on a monthly basis. The mentors support students in academic socialization and career planning. Other strategies to help with career planning include the Transitions to Practice and Graduate School Exploration Workshops. The prelicensure Transitions to Practice workshop occurs before graduation and is designed to address the socialization factors influencing new graduate nurses' understanding of and preparation for the real world of nursing while the Graduate School Exploration Workshop was

Table 6
HealthE STEPS 2.0 promising practices and interventions for each social determinant of education.

Social determinant of education	Interventions
Educational opportunity	Pre-college career exploration activities Recruitment fliers and videos Nursing application site workshops Mock interviews and interview guide Holistic admissions Writing support Test-taking strategies workshops Peer tutoring Consultation with internal and external partners
Economic stability	Scholarships Stipends for exam preparation Scholarships application workshops Financial literacy and debt management workshops Case management
Socioeconomic opportunity	Mentoring Career planning Professional development opportunities Graduate school exploration workshops and webinars Pre-licensure transition to Practice workshops
Social Inclusion	Unconscious bias training for students, faculty and staff Campus culture survey Consultation with internal and external partners
Health equity	Multicultural curriculum and faculty development Clinical placements in medically underserved communities Tracking employment in medically underserved communities Consultation with internal and external partners

developed to introduce URM nursing students to graduate school opportunities. Students meet with graduate program directors and URM graduate students to explore different advance practice and doctoral career options. Students choosing to continue on to graduate school are mentored through the application process by faculty coordinators and program staff. The Graduate School Exploration Workshop had 12 underrepresented students from all campuses in attendance in June of 2018 and 19 in June of 2019.

Other best practices employed by the HealthE STEPS 2.0 program to address the social determinants of Social Inclusion and Health Equity include unconscious bias training and multicultural curriculum development. Our program collaborated with the University's Center for Diversity and Inclusion (CDI) to implement unconscious bias training for faculty and staff. The role of the Inclusion Ambassador is to help ensure that diversity, inclusion, and equity are a part of the work culture in all work groups, units, or departments. Additional collaboration with the CDI included cohosting trainings for all faculty and staff at the School of Nursing on incorporating concepts of a multicultural curriculum in teaching activities, microaggressions, and strategies on fostering an equitable environment for all students.

Another strategy employed to address the social determinant of Health Equity was to increase the number of students working in medically underserved communities (MUCs). This was done by expanding the number of MUC clinical partners and increasing clinical placements in those sites.

Outcomes and sustainability plans

Data collected since implementation of the program has shown improvement in several different areas for the SON, university campus sites, and scholars. Outcomes noted across the School of Nursing have demonstrated an increase in URM student enrollment in the BS pre-licensure programs from 12% in 2011 to 22% in 2019 with first–year retention rates in the years 2015–2019 of 97–100% for URM students across all pre-licensure programs and graduation rates over 95% for our traditional BSN URM students and 100% for our accelerated students. The number of Hispanic students graduated annually from all pre-licensure programs on the five campuses increased from 38 in 2011 to 106 graduates in 2018.

Employment data from the undergraduate class of 2018 shows 82% of the graduates from the pre-licensure program working in MUCs, 13% are in graduate programs and 5% are working in non-MUCs. All HealthE Steps scholars who graduated in 2018 are employed and working in MUCs in the state of Oregon.

Sustainability of this program includes transitioning many of the interventions identified and developed into the structure of the SON. For example, nursing application workshops, mock interviews, and holistic admissions are in place to support nursing applicants. Workshops for financial debt management, writing support, and scholarship application are all embedded into the support provided to nursing students as they enter the program. Multicultural curriculum changes, unconscious bias trainings and clinical placements in MUCs are being integrated into the curriculum. Plans include transitioning the financial support for the diversity and faculty coordinator role into SON budget after the grant period ends.

Summary

The exemplars described in this paper contribute to knowledge development related to improving nursing workforce diversity for other colleges, universities, and states to consider. Each project adapted evidence-based best practices to its own unique situation to address social and academic barriers to higher education for diverse student populations. These exemplars provide a roadmap for other schools of nursing to consider as they develop programs to address shared and unique challenges facing students. While the literature provides several strategies that these programs adopted, including financial support and academic tutoring, several novel approaches were developed including writing support, mentoring, coaching and preparation for role transition. Alumni and professional associations provided support in some programs as did upper-class/cross-cohort peers from within the diversity initiatives. Faculty development related to diversity and inclusion initiatives was also a key strategy.

In conclusion, recommended best practices include:

- Monitor national, state and school nursing workforce diversity data.
- Support middle and high school career exploration activities for youth underrepresented in nursing.
- Explore resources available through nursing education professional organizations to support holistic admissions and diversity and inclusion efforts (American Association of Colleges of Nursing, 2019; National League for Nursing, 2017).
- Use early assessment and intervention advising and approaches.
- Provide academic and non-academic student support resources for success.
- Provide diversity and inclusivity training to faculty and staff training.
- Provide faculty development that enhances a health equity, multicultural framework.

Increasing nursing workforce diversity is a social responsibility needed to address health inequities. Although progress has been made in diversifying the workforce, nursing education is not keeping up with the demands of a diverse population. Building on the Academy of Medicine's recommendations, these four programs developed and implemented strategies to increase admission, retention and graduation

rates of URM students. Further work is needed in evaluation and research to develop guidelines for widespread implementation of diversity efforts. Nurses and nurse leaders must create a culture and climate where diversity efforts are easily embraced and adopted.

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