An Overview of California’s Nursing Workforce

Joanne Spetz, PhD, FAAN
Director, Philip R. Lee Institute for Health Policy Studies (IHPS)
Professor, IHPS & Healthforce Center
University of California, San Francisco

Ross Lallian
Health Workforce Development Research and Evaluation Chief
Department of Health Care Access and Information

September 2022
Why Nursing Workforce Development Matters

• Education capacity
  • Forward planning for nursing education needed to ensure adequate supply in the long-term
  • Significant regional variation in education capacity

• Retention and advancement
  • Nurse burnout and turnover undermine stability and capacity of the workforce
  • Need for career ladders and advancement opportunities

• Job opportunities and equity
  • Equity in health care services is linked to workforce diversity
  • We need a diverse pipeline to achieve workforce diversity that matches our state’s population
Outline

• Defining the nursing workforce

• Demographics of California’s nurses

• Employment of California’s nurses

• California’s nursing pipeline

• Conclusions and Recommendations
Defining the Nursing Workforce
The Nursing Workforce

• Registered Nurses (RNs)
  • Licensed professional who provides hands-on care in different healthcare and community settings
  • Associate, bachelor’s, or master’s degree, and pass the NCLEX-RN exam

• Advanced Practice Registered Nurses (APRNs): RNs with advanced education & knowledge
  • Nurse-midwife (NM or CNM if nationally certified)
  • Clinical nurse specialist (CNS)
  • Nurse practitioner (NP)
  • Nurse anesthetist (NA or CRNA if nationally certified)

• Licensed Vocational Nurses (LVNs)
  • 12-18 months of education and pass the NCLEX-PN exam
  • Scope of practice is more limited: Cannot assess patients or create nursing care plan, cannot administer some medications (e.g., “IV push”)

• Certified Nursing Assistants (CNAs)
  • 60 hours of classroom instruction & 100 hours of supervised training, plus pass the National Nurse Aide Assessment Program (NNAAP) exam
  • Provides basic patient care directed at the safety, comfort, personal hygiene, and protection of elderly, disabled, or injured individuals
Demographics of California’s Nurses
Availability of Data

• Substantial amount of data available about RNs and APRNs

• Limited data on LVNs

• Very limited data on CNAs
Licensees include non-residents

- LVNs: 132,737 licenses on 9/1/2022
  - 124,792 with California addresses (94%)
- RNs: 466,874 licenses on 3/18/2022
  - 389,597 with California addresses (83.4%)
  - Note: increase of 20,000 RNs between 3/18 and 5/11/22
  - Data reflect large pool of traveling RNs
- NPs: 29,699 on 5/11/22
  - 27,121 with California addresses (91.3%)
- NMs: 1,368 on 5/11/22
  - 1,235 with California addresses (90.3%)
  - 582 of those with CA addresses were also NPs (47.1%)
- CNAs: 128,327 on 7/1/22
  - 126,475 with California addresses (98.5%)
## Actively Licensed Nurses per 100K Population by Region, 2022

<table>
<thead>
<tr>
<th>Region</th>
<th>CNA</th>
<th>LVN</th>
<th>RN</th>
<th>NP</th>
<th>NM</th>
<th>CNS</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Coast</td>
<td>346.6</td>
<td>170.7</td>
<td>955.9</td>
<td>57.5</td>
<td>4.0</td>
<td>5.4</td>
<td>3.1</td>
</tr>
<tr>
<td>Greater Bay Area</td>
<td>321.5</td>
<td>176.8</td>
<td>1072.3</td>
<td>82.5</td>
<td>5.1</td>
<td>13.0</td>
<td>5.6</td>
</tr>
<tr>
<td>Inland Empire</td>
<td>367.0</td>
<td>371.9</td>
<td>965.7</td>
<td>58.7</td>
<td>1.5</td>
<td>4.5</td>
<td>5.3</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>429.9</td>
<td>293.2</td>
<td>922.6</td>
<td>69.0</td>
<td>2.1</td>
<td>5.8</td>
<td>5.1</td>
</tr>
<tr>
<td>Northern &amp; Sierra</td>
<td>390.8</td>
<td>239.6</td>
<td>950.8</td>
<td>66.9</td>
<td>5.5</td>
<td>3.0</td>
<td>4.0</td>
</tr>
<tr>
<td>Orange</td>
<td>272.5</td>
<td>213.2</td>
<td>1020.9</td>
<td>83.7</td>
<td>3.0</td>
<td>6.1</td>
<td>6.1</td>
</tr>
<tr>
<td>Sacramento Area</td>
<td>286.1</td>
<td>194.3</td>
<td>1201.1</td>
<td>69.2</td>
<td>3.3</td>
<td>6.5</td>
<td>9.1</td>
</tr>
<tr>
<td>San Diego Area</td>
<td>415.9</td>
<td>195.9</td>
<td>1064.9</td>
<td>82.8</td>
<td>4.4</td>
<td>12.3</td>
<td>6.1</td>
</tr>
<tr>
<td>San Joaquin Valley</td>
<td>432.0</td>
<td>247.8</td>
<td>868.5</td>
<td>56.5</td>
<td>1.7</td>
<td>3.5</td>
<td>4.4</td>
</tr>
<tr>
<td>California</td>
<td>372.8</td>
<td>259.5</td>
<td>991.3</td>
<td>70.7</td>
<td>3.2</td>
<td>7.4</td>
<td>5.8</td>
</tr>
</tbody>
</table>

**Source:** Department of Consumer Affairs, Public Information Licensee Lists
Nursing Workforce: Age Distribution

Age Distribution of California Nurses (2022)

Source: Department of Consumer Affairs Licensure Data
Nursing Workforce: Race/Ethnicity

Race/Ethnicity of California Nurses (2022)

Source: Department of Consumer Affairs Healing Arts Survey
(response rate: 71-85%)
Languages spoken by California RNs, 2020

Source: Chu & Spetz, California Board of Registered Nursing 2020 Survey of RNs (in press)
Employment of California’s Nurses
Percentage of California-resident RNs employed in nursing, by age group, 2006-2022

Source: Spetz, Chu, & Blash, Forecasts of the RN Workforce in California, 2022.
Employment settings of California-resident RNs, 2020

- Hospital, inpatient or ED, 52.2%
- Hospital, other department, 11.0%
- Skilled nursing / rehab / extended care, 3.8%
- Ambulatory care (office, surgery center), 6.4%
- Home health agency, 5.0%
- Public/community health agency, 3.8%
- Academic nursing program, 1.1%
- Forensic setting, 1.6%
- Dialysis, 1.4%
- Mental health / substance use, 1.7%
- Case management / disease mng, 2.1%
- Other, 9.9%

Source: Chu & Spetz, California Board of Registered Nursing 2020 Survey of RNs (in press)
Percentage of California-resident RNs who plan to retire or leave nursing in next two years, 2018-2022

Source: Spetz, Chu, & Blash, Forecasts of the RN Workforce in California, 2022.
LVN Employment Settings, 2019

- Ambulatory Care, 35%
- Nursing/residential care, 36%
- Hospitals, 15%
- Government, 6%
- Support services, 2%
- Social assistance, 2%
- Other, 4%

Source: California Health Care Foundation Almanac Quick Reference Guide, March 2021
CNA Employment Settings

- Nursing care facilities, 49.7%
- Hospitals, 23.7%
- Community care facility for the elderly, 7.5%
- Employment services, 3.4%
- Government, 1.9%

Source: California Employment Development Department, Occupation Guide, downloaded September 2022
Other nurse employment data

<table>
<thead>
<tr>
<th>Nurse Type</th>
<th># Licensed / Certified with CA addresses, 2022</th>
<th>EDD estimate: # Employed 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>LVNs</td>
<td>124,792</td>
<td>72,400</td>
</tr>
<tr>
<td>NPs</td>
<td>27,121</td>
<td>17,300</td>
</tr>
<tr>
<td>NMbs</td>
<td>1,235</td>
<td>1,200</td>
</tr>
<tr>
<td>CRNAs</td>
<td>2,260</td>
<td>2,000</td>
</tr>
<tr>
<td>Nursing Assistants</td>
<td>128,327</td>
<td>97,300</td>
</tr>
<tr>
<td>Home health &amp; personal care aides</td>
<td>128,327</td>
<td>97,300</td>
</tr>
</tbody>
</table>

California’s nursing pipeline
## Nursing Education Pathways

<table>
<thead>
<tr>
<th>Type of nurse</th>
<th>Education options</th>
<th>Number &amp; types of approved programs</th>
<th># Grads</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certified Nursing Assistant</td>
<td>60 hours of classroom &amp; 100 hours of supervised training</td>
<td>434 freestanding 115 facility-based</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>40 hours of instruction if already a certified HHA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Licensed Vocational Nurse</td>
<td>1,530 hours of training</td>
<td>148 in 2022</td>
<td>4,993 in 2019</td>
</tr>
<tr>
<td></td>
<td></td>
<td>16 in adult education (11%) 80 in private schools (54%) 4 in regional occupational centers (3%) 48 in community colleges (32%)</td>
<td></td>
</tr>
<tr>
<td>Registered Nurse</td>
<td>Associate, bachelor’s, or master’s from approved program</td>
<td>92 AD programs (78 public) 43 BSN programs (19 public) 12 Entry-master’s programs (5 public)</td>
<td>12,304 in 2020-21</td>
</tr>
<tr>
<td>Nurse Practitioner</td>
<td>Master’s Degree or Doctor of Nursing Practice (DNP)</td>
<td>31 schools (15 private)</td>
<td>1,558 in 2020-21</td>
</tr>
<tr>
<td>Nurse Midwife</td>
<td>Master’s Degree or DNP</td>
<td>3 schools (all public)</td>
<td>33 in 2020-21</td>
</tr>
<tr>
<td>Nurse Anesthetist</td>
<td>Doctor of Nursing Practice</td>
<td>5 schools (all private)</td>
<td>27 in 2020-21</td>
</tr>
<tr>
<td>Clinical Nurse Specialist</td>
<td>Master’s Degree</td>
<td>11 schools in California (meet requirements; no official approval for CNS programs)</td>
<td>60 in 2020-21</td>
</tr>
</tbody>
</table>

Source: California Department of Public Health; California BVNPT; California BRN
## Types of Specialization of NP Education Programs

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Number of Schools</th>
<th>Percent of Grads 2020-21</th>
<th>Geographic Locations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Primary Care</td>
<td>29</td>
<td>68.9%</td>
<td>Fresno, LA region, Inland Empire, San Diego, SF Bay Area, Bakersfield, Davis, Stanislaus</td>
</tr>
<tr>
<td>Psych-Mental Health</td>
<td>13</td>
<td>8.7%</td>
<td>Fresno, LA region, Inland Empire, SF Bay Area</td>
</tr>
<tr>
<td>Pediatric Primary Care</td>
<td>6</td>
<td>1.1%</td>
<td>LA region, Inland Empire, SF Bay Area</td>
</tr>
<tr>
<td>Adult-Gero Primary Care</td>
<td>7</td>
<td>5.8%</td>
<td>LA region, Inland Empire, San Diego, SF Bay Area</td>
</tr>
<tr>
<td>Women’s Health</td>
<td>3</td>
<td>1.1%</td>
<td>LA region, SF Bay Area</td>
</tr>
<tr>
<td>Acute Care – Adult/Gero</td>
<td>6</td>
<td>5.8%</td>
<td>LA region, Inland Empire, SF Bay Area</td>
</tr>
<tr>
<td>Acute Care – Pediatric</td>
<td>3</td>
<td>0.7%</td>
<td>LA region, Inland Empire, SF Bay Area</td>
</tr>
</tbody>
</table>

Source: California BRN Annual Schools Report 2020-21
Graduates of Nursing Education Programs by Race/Ethnicity, 2019

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Asian</th>
<th>Black</th>
<th>Latino/a</th>
<th>Native American</th>
<th>Hawaiian/Pacific Islander</th>
<th>Filipino</th>
<th>White</th>
<th>Two or More/Other</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Licensed Vocational Nurse (2019)</td>
<td>25%</td>
<td>9%</td>
<td>38%</td>
<td>&lt;1%</td>
<td>2%</td>
<td></td>
<td>18%</td>
<td>2%</td>
<td>4%</td>
</tr>
<tr>
<td>Registered Nurse (2021)</td>
<td>22%</td>
<td>4%</td>
<td>23%</td>
<td>&lt;1%</td>
<td>6%</td>
<td></td>
<td>25%</td>
<td>5%</td>
<td>15%</td>
</tr>
<tr>
<td>Nurse Practitioner (2021)</td>
<td>29%</td>
<td>13%</td>
<td>16%</td>
<td>&lt;1%</td>
<td>3%</td>
<td>5%</td>
<td>30%</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>CNM (2021)</td>
<td>40%</td>
<td>13%</td>
<td>7%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>37%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>CRNA (2021)</td>
<td>35%</td>
<td>8%</td>
<td>15%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>42%</td>
<td>0%</td>
<td></td>
</tr>
</tbody>
</table>

Source: Integrated Postsecondary Education Data System; BRN Annual Schools Report, 2020-2021
Qualified applications accepted and not accepted to RN programs

Source: California BRN Annual Schools Report 2020-21
Percent of RN Education Spaces Filled

Source: California BRN Annual Schools Report 2020-21
New RN Student Enrollments and Graduations

Source: California BRN Annual Schools Report 2020-21
Projected RN Program Enrollments

Source: California BRN Annual Schools Report 2020-21
Forecasts of future demand & supply
Perceptions of employers: Overall labor market, 2010-2018

<table>
<thead>
<tr>
<th>Year</th>
<th>High demand</th>
<th>Moderate demand</th>
<th>Demand in balance</th>
<th>Demand less than supply</th>
<th>Demand much less than supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>41.3%</td>
<td>43.8%</td>
<td>8.3%</td>
<td>6.6%</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>37.9%</td>
<td>49.7%</td>
<td>8.3%</td>
<td>4.1%</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>34.3%</td>
<td>55.2%</td>
<td>7.6%</td>
<td>2.9%</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>40.1%</td>
<td>46.9%</td>
<td>6.8%</td>
<td>5.6%</td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>18.4%</td>
<td>49.0%</td>
<td>13.1%</td>
<td>12.6%</td>
<td>6.8%</td>
</tr>
<tr>
<td>2013</td>
<td>8.6%</td>
<td>32.3%</td>
<td>18.7%</td>
<td>26.8%</td>
<td>13.6%</td>
</tr>
<tr>
<td>2012</td>
<td>5.5%</td>
<td>45.2%</td>
<td>19.8%</td>
<td>17.1%</td>
<td>12.4%</td>
</tr>
<tr>
<td>2011</td>
<td>4.7%</td>
<td>43.9%</td>
<td>6.8%</td>
<td>23.6%</td>
<td>20.9%</td>
</tr>
<tr>
<td>2010</td>
<td>5.3%</td>
<td>30.9%</td>
<td>11.8%</td>
<td>27.0%</td>
<td>25.0%</td>
</tr>
</tbody>
</table>

- **High demand**: difficult to fill open positions
- **Moderate demand**: some difficulty filling open positions
- **Demand in balance**: supply available
- **Demand less than supply available**: demand is less than supply available
- **Demand much less than supply available**: demand is much less than supply available

Source: Chu, Spetz, & Bates, 2019, Survey of Nurse Employers Fall 2018
Differences across BRN regions: Experienced RNs

Source: Chu, Spetz, & Bates, 2019, Survey of Nurse Employers Fall 2018
Differences across BRN regions: New Grad RNs

Source: Chu, Spetz, & Bates, 2019, Survey of Nurse Employers Fall 2018
Projected RN Supply and Demand, 2022-2037, Full-time Equivalent Employment

Source: Spetz, Chu, & Blash, Forecasts of the RN Workforce in California, 2022.
RN supply and demand projections across regions, 2035 (regions defined by BRN)

Source: Spetz, Regional Forecasts of the RN Workforce in California, 2018.
## Other nursing employment projections

<table>
<thead>
<tr>
<th></th>
<th># Employed 2020</th>
<th>Projected Employment 2030</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>LVNs</td>
<td>72,400</td>
<td>83,500</td>
<td>15.3%</td>
</tr>
<tr>
<td>NPs</td>
<td>17,300</td>
<td>26,900</td>
<td>55.5%</td>
</tr>
<tr>
<td>NMls</td>
<td>1,200</td>
<td>1,400</td>
<td>16.7%</td>
</tr>
<tr>
<td>CRNAs</td>
<td>2,000</td>
<td>2,400</td>
<td>20.0%</td>
</tr>
<tr>
<td>Nursing Assistants</td>
<td>97,300</td>
<td>110,000</td>
<td>13.1%</td>
</tr>
<tr>
<td>Home health &amp; personal care aides</td>
<td>766,000</td>
<td>985,800</td>
<td>28.7%</td>
</tr>
</tbody>
</table>

Conclusions and Recommendations
Conclusions

• Notable variation in supply of nurses across regions of California
• Education capacity varies across the state – less capacity in Central Valley

• LVN workforce has more people of color than other licensed nurses
• Latino/a are under-represented among RNs and APRNs

• RN education programs have had declining enrollments during the pandemic
• Faster retirement rates for older RNs
• Shortages projected through 2030, and then supply should catch up

• Existing sources of data are not sufficient to fully assess California’s nursing workforce, apart from RNs
Recommendations: Data Needs

• Develop data system for certified health professionals (CNAs & HHAs)
• Improve data on the LVN workforce – leverage the new survey data
• Maintain detailed RN surveys
  • This is the largest group of nurses and important to all healthcare sectors
• Consider adding regular APRN surveys
  • Particularly for NPs and NMs
Recommendations

• K-12 pipeline
  • Educate counselors about the pathways into nursing
  • Incorporate LVN and CNA training into vocational programs

• Pre-licensure education
  • RN education programs have some unused capacity
    • Regional variation is important
    • Be thoughtful about where to expand RN programs
  • LVN education capacity is not well-understood
  • Adapt to increasing roles of licensed nurses in community settings

• Leverage diversity of LVN (and presumably CNA) workforces to create more diverse pipelines into RN and APRN education
Recommendations

• Expand APRN education capacity in regions with the greatest shortfalls
  • APRNs are important to filling primary care and behavioral health shortages, particularly in rural and inner-city regions, but education isn’t in these places

• Improve new graduate transition into practice
  • This is a crucial period to keep nurses in the profession
  • Significant stress on system with precipitous retirements of experienced RNs
  • Creates a bottleneck that limits clinical placements for pre-licensure students

• Identify strategies to bring “retired” nurses back for specific roles
  • Mentors to support new grad onboarding
  • Clinical faculty
Questions?
Comments?