Primary Care Survey and Focus Groups: Synthesis of Findings

Supplemental Report to Increasing Primary Care Capacity Through Academic Preparation and Effective Utilization of Registered Nurses in Team-Based Delivery

PREPARED BY

Judith G. Berg, MS, RN, FACHE
Former President and Chief Executive Officer

Carolyn Orlowski, MSN, RN
Program Director

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HealthImpact
663 13th Street, Suite 300
Oakland, CA 94612
www.healthimpact.org

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Contents

A copy of the summary report, *Increasing Primary Care Capacity Through Academic Preparation and Effective Utilization of Registered Nurses in Team-Based Delivery*, is available at **www.healthimpact.org**.

Introduction

A statewide survey was conducted in California between July and October in 2018, inviting participation from primary care site leaders in various types of health care organizations, registered nurses (RNs) working in primary care settings, and academic leaders of RN pre-licensure nursing programs. The survey was designed to obtain information about the current primary care RN workforce, including the utilization of RNs and their roles, consider the academic preparation and readiness of nursing students for RN roles in primary care, and explore strategies and recommendations to support preparation of the future nursing workforce in these practice settings.

Purpose and Objectives

The survey was part of an 18-month, grant-funded project conducted by HealthImpact with the support of the California Health Care Foundation (CHCF). The aim of the overall project was to identify the knowledge, skills, and attributes needed by RNs working in various roles in primary care settings; to determine gaps in existing professional role development as perceived by RNs, their employers, and academic nursing programs; and to make recommendations regarding how pre-licensure education, transition-to-practice programs, certification programs, and continuing education can better prepare RNs for enhanced roles in primary care settings. The focus of this effort was on RNs in nursing roles who were not working as nurse practitioners.

Key findings from the survey provided a base of evidence to inform the overall primary care project in its efforts to further understand nursing workforce needs and challenges related to the preparation and utilization of RNs in primary care practice, contributing to the development of strategies and recommendations aimed to improve and expand the capacity and capability of California's primary care nursing workforce.

Methodology

Survey Development

The survey was designed to obtain information from various types of health care organizations providing primary care services, by engaging primary care site leaders and RNs working in primary care practice to participate, and also by inviting RN pre-licensure programs in academic institutions to respond. Survey development included the following:

- A systematic review of the literature provided an evidence base and framework identifying key dimensions to be included in the survey. Central themes included primary care practice models; RN roles in ambulatory care settings and primary care specifically; evidence of the need, opportunity, and business case for expanding the utilization of RNs in primary care; challenges related to the development of RNs in this area of specialty practice; team-based practice models, including the unique scope of RN practice; and processes, functions, and roles supporting the full scope of RN practice in primary care settings, which is important to advancing health outcomes.

- Development of three separate survey instruments, one for each of these target groups:
  - *Primary Care Organization Survey* to be completed by primary care site leaders, this consisted of 36 questions, and would take an estimated 24 minutes to complete.
  - *RN Survey* to be completed by RNs working in primary care settings, this consisted of 36 questions, and would take an estimated 30 minutes to complete.
  - *RN Pre-licensure Program Survey* to be completed by academic nursing program leaders, this consisted of 28 questions, and would take an estimated 20 minutes to complete.

- Design of survey questions to obtain information about current practices, experiences, and perspectives unique to each stakeholder group, as well as a set of core questions structured across two or all three of the groups where applicable, to compare similarities and differences.
- Collaboration with a project advisory team comprising leaders representing different types of academic pre-licensure nursing programs, primary care practice sites, and organizations with specific expertise in primary care. The advisory team guided the identification of current issues to be addressed, recommended the type of information to be obtained, including survey questions to be included, and proposed key organizations and contacts to be invited to participate in the survey. (See Appendix C, page 37)
- A final review of survey questions by experts in primary care nursing practice, including testing and feedback of the survey instruments prior to finalization and dissemination.

Process and Data Collection

Invitations to participate in the primary care survey addressed from HealthImpact and the California Health Care Foundation were disseminated by email the week of June 4, 2018, to administrative leaders in organizations and health care systems that provided primary care services. The invitation informed them about the purpose and scope of the overall primary care project, and requested their support in identifying and disseminating the survey invitation within their organization or health care system, to be completed by primary care site leaders and RNs. Links were provided for site leaders and RNs to directly access and complete each of their respective surveys online. (See Appendix A, page 34.)

A separate survey invitation to academic institutions was sent to deans and directors of California RN pre-licensure programs, disseminated with the support of the California Association of Colleges of Nursing (CACN) and the California Organization of Associate Degree Nursing (COADN) Directors, North and South Regions. The invitation detailed the purpose and scope of the overall primary care project, and requested their participation in the academic survey designed to address the preparation of RNs in RN pre-licensure programs for practice in primary care settings. (See Appendix A, page 34.)

Direct outreach by the project advisory team members identified key leaders and discussed the purpose and scope of the project to engage interest in and commitment to participate in the survey, and provided support to facilitate the internal dissemination of the survey to reach the intended target audiences within each organization. Following initial dissemination of the survey invitations, reminders were sent by email three to four weeks later to encourage participation, along with another copy of the survey invitation and a link to access the online questionnaires.

The anticipated timeline to engage health care organizations and nursing programs to participate in and disseminate the survey was six weeks. Various levels of review, approval, and/or steps in dissemination within some large health care systems and multisite organizations necessitated extended time for the surveys to remain open in the field (through the end of October) to support maximum returns.

During this time, interim findings were compiled and reviewed by the advisory team to inform the development and design of focus groups conducted around the state in November 2018 as part of the overall primary care project.

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The Primary Care Sample

Primary care services provided by various types of organizations encompass different practice models, types of health care providers, health care disciplines, and personnel. The survey sample intentionally included representation from diverse organizations to obtain a survey data set that could be used to examine the characteristics of primary care nurses, and to learn about the utilization of RNs, including needs, challenges, strategies, and recommendations for developing the future primary care RN workforce. Analysis of aggregate data and patterns inclusive of various roles and characteristics of RNs were conducted to provide further understanding of core functions and related RN practice issues across primary care settings in California.

To source a sample of primary care sites and RNs working in primary care to be included in the survey, a probability-based (scientific, random, or stratified) survey sample was not possible because a source database of all primary care sites and RNs in the target population was not available. Therefore, the sample survey data set was developed based on information sourced through literature, structured to include various types of organizations and primary care practice models. The survey sample was further informed by primary care experts and the project advisory team, who have diverse knowledge and experience about the range of primary care practices in California. This type of judgment sampling process identified primary care organizations whose leaders then also agreed to disseminate the survey to primary care site leaders and RNs within their health care system or network, carried out through a convenience sampling method.

The goal was to have at least 100 primary care site respondents from diverse regions of the state, with a mix of urban and rural areas, inclusive of both large and small practices, providing services to typical primary care populations and specialties: internal medicine, family medicine, pediatrics, women's health, and geriatrics. Types of organizations sourced and invited to participate in the sample survey included the following:

- Private practice (provider-owned)
- Public, government, or county clinic or health system
- Veterans Health Administration health care system
- Community hospital or health system
- University hospital or health system
- Health maintenance organization (HMO)
- Community health center
- Migrant health center
- Rural or frontier health center
- Free clinic
- Walk-in clinic
- School-based clinic
- Indian health clinic
- Business or retail store

The academic survey invited all 135 RN pre-licensure programs in California to participate in the survey, including 82 associate degree in nursing (ADN) programs, 39 bachelor of science in nursing (BSN) programs, and 14 entry-level master's (ELM) programs. Academic surveys were disseminated to deans and directors of RN pre-licensure programs, and completed by them or delegated to an academic nursing leader with overall knowledge and experience about their RN pre-licensure program(s), curriculum, nursing student learning outcomes, and faculty composition.

Primary Care Survey Respondent Demographics

Primary care surveys were received from 379 respondents, including 112 primary care site leaders, 199 primary care RNs working in these primary care settings, and 68 academic institutions providing RN pre-licensure programs. The demographic composition of responses was reviewed and compared with geographic regions of the state, types of primary care settings, academic nursing programs considering different levels of nursing degrees, and other sources in analyzing the findings.

Of the primary care sites that responded, 56.3% (63) were located in urban areas, 30.4% (34) in suburban areas, and 13.4% (15) in rural areas, representing 23 of the 58 counties in California. Counties vary in size and population, with the largest number of counties geographically concentrated around the San Francisco Bay Area and the greatest number of responses from the greater Los Angeles region, as displayed in Table 1.

Academic surveys received from 68 nursing schools represented 71 of the 135 RN pre-licensure programs, or 52.6% of all RN pre-licensure programs in California, as displayed in Table 2. Of the nursing schools responding, 44.1% (30) were located in urban areas, 39.7% (27) in suburban areas, and 16.2% (11) in rural

Table 1. Survey Respondents, by Geographic Region

	CALIFORNIA COUNTIES	PRIMARY CARE SITES	PRIMARY CARE RNS	NURSING SCHOOLS WITH RN PRE-LICENSURE PROGRAMS
North of Sacramento	Butte, Colusa, Del Norte, Glenn, Humboldt, Lake, Lassen, Mendocino, Modoc, Nevada, Plumas, Shasta, Sierra, Siskiyou, Tehama, Trinity	2	24	5
Sacramento	El Dorado, Placer, Sacramento, Sutter, Yolo, Yuba	4	6	4
San Francisco Bay Area	Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Santa Cruz, Solano, Sonoma	29	41	11
Central Valley and Sierra	Alpine, Amador, Calaveras, Fresno, Inyo, Kern, Kings, Madera, Mariposa, Merced, Mono, San Joaquin, Stanislaus, Tulare, Tuolumne	6	6	7
Central Coast	Monterey, San Benito, San Luis Obispo, Santa Barbara	1	3	3
Los Angeles	Los Angeles, Orange, Ventura	58	111	27
Inland Empire	Riverside, San Bernardino	2	0	6
Southern Border	Imperial, San Diego	10	8	5
	Totals	**112**	**199**	**68**

Table 2. Response Rates of RN Pre-licensure Programs (# responses/# programs in California)

	COMMUNITY COLLEGE	PRIVATE	CALIFORNIA STATE UNIVERSITY (CSU)	UNIVERSITY OF CALIFORNIA (UC)	TOTALS
ADN	67.2% (45/67)	26.7% (4/15)			**59.8%** (49/82)
BSN		55.0% (11/20)	23.5% (4/17)	50.0% (1/2)	**41.0%** (16/39)
ELM		37.5% (3/8)	0% (0/2)	75.0% (3/4)	**42.9%** (6/14)
Totals	**67.2%** (45/67)	**41.9%** (18/43)	**21.1%** (4/19)	**66.7%** (4/6)	**52.6%** (71/135)

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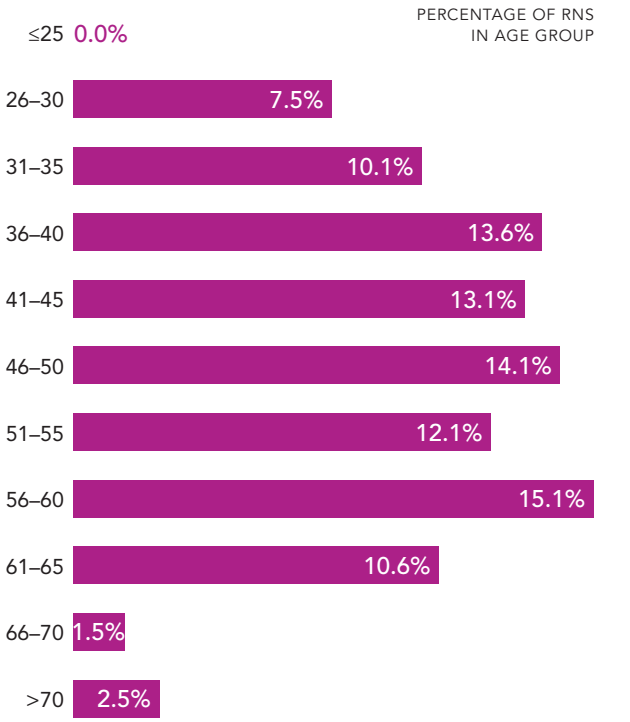
areas, geographically distributed across all regions of the state, and located in 26 of the 58 counties in California. Large universities with nursing programs are typically located in more densely populated urban or suburban areas, with community colleges also geographically distributed considering distance between colleges supporting local access.

Profile of Primary Care RN Respondents

The age distribution of primary care RNs participating in this sample survey was wide, ranging from 26 to over 70 years of age, with 58.3 % (111) of RNs reported to be 50 years old or younger, and 41.7% (83) over the age of 50 (Figure 1). This pattern differs slightly from California's overall RN nursing workforce as reported by the California Board of Registered Nursing (BRN) in the most recent biannual *Survey of Registered Nurses* (2016), which indicates that 55.9% of RNs working and residing in California are 50 years old or younger. While the age distribution of primary care RNs responding to this survey may be influenced by the sampling methodology, it is noted that the primary care RN respondent profile exhibits a slightly younger group of RNs working in primary care settings than the overall population of RNs working across the state. This pattern may be influenced by greater demand for RNs in primary care in recent years, along with more RNs choosing primary care practice, both of which trends build and strengthen the capacity of the primary care nursing workforce going forward.

Primary care RN respondents reported their total years of experience as a licensed RN, encompassing all settings and roles, as well as their years of experience in primary care specifically (Figure 2, page 6). Seventy-four percent (79.7%) of RNs reported 1 to 25 years of overall RN experience, with most of them clustered between 1 and 15 years of experience, reflecting a population at either the early or middle stages of their careers.

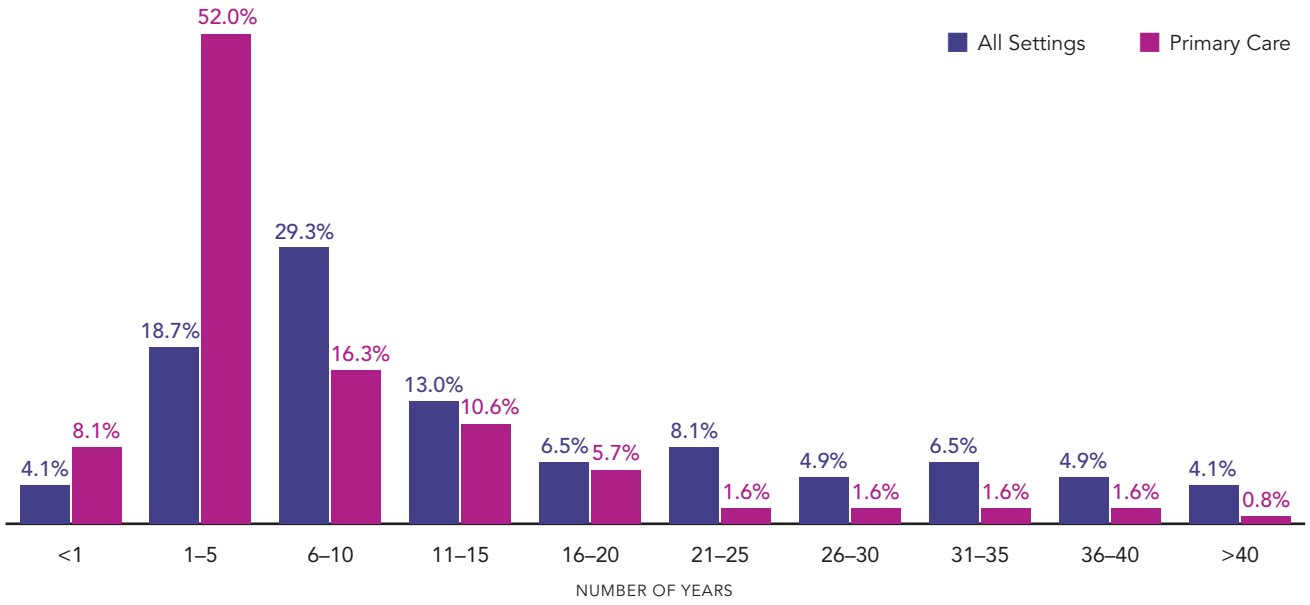
Figure 1. Age Distribution of Primary Care RNs



Note: All 199 primary care RNs responded.

This pattern becomes more evident when reviewing the years of experience RNs have in primary care specifically, with a greater number of RNs reporting less experience specific to primary care practice (Figure 2). This may indicate that more newly licensed nurses are choosing to practice in primary care earlier in their careers, along with RNs experienced in other areas choosing to change specialties and move into primary care practice, as well as primary care sites utilizing more RNs in recent years. While it is not known if the sample of RNs responding to this particular survey is reflective of the overall population of primary care RNs in California, the data suggest that the primary care nursing workforce is younger, with less RN experience, and at an earlier point in their careers compared with the overall California nursing workforce as a whole.

Figure 2. Length of RN Experience, All Settings vs. Primary Care

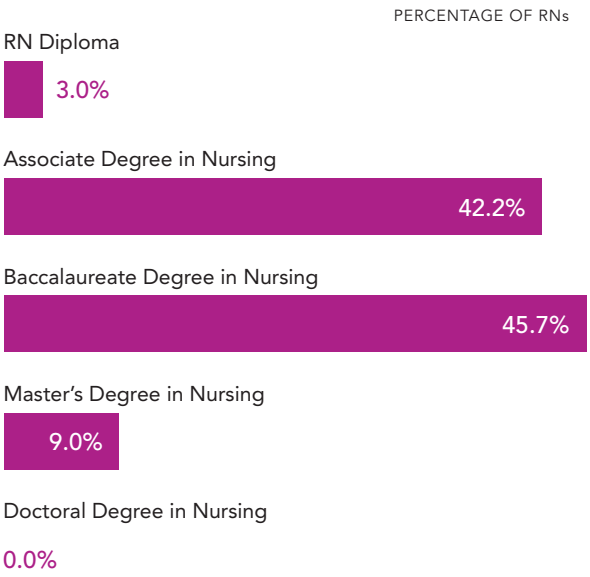


Note: 123/199 primary care RNs responded.

Type of RN Education

Primary care RNs reported their highest degree held in nursing, with 3.0% (6) holding an RN diploma, 42.2% (84) an associate degree, 45.7% (91) a baccalaureate degree, 9.0% (18) a master's degree, and none with a doctoral degree in nursing, as depicted in Figure 3. The pattern and distribution of nursing education reported in this survey indicate that a slightly greater percentage of primary care RNs in this sample have a BSN or MSN (master of science in nursing) degree compared with the overall population of RNs in California, as reported in the BRN's most recent biannual, statewide *Survey of Registered Nurses* (2016), which indicated that the highest nursing degrees held by RNs in California overall were 5.6% RN diploma, 37.8% associate degree, 48.3% baccalaureate degree, and 8.3% master's or doctoral degree. This may be influenced in part by employers seeking candidates for primary care RN positions who have specific knowledge and experience in community health and/or leadership, which are included in BSN or MSN programs, as well as greater interest by BSN- or MSN-prepared RNs to practice in primary care, arising from their academic preparation or experience in community health care settings.

Figure 3. Highest Level of Nursing Education Reported by Primary Care RNs



Note: All 199 primary care RNs responded.

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Positions Held by Primary Care RNs

Registered nurses practicing in primary care settings fill various types of roles and positions. RN respondents reported a wide range of job titles across a broad spectrum of clinical, care coordination, education, team coordination, supervision, management, and administrative roles. A total of 95 unique job titles were reported, with many very similar in name, yet job titles are not always clear indicators of specific role functions, nor of the overlap of activities and responsibilities that occurs both within and across different organizations. Actual job titles reported by RNs listed in Table 3 evidence the diverse types of positions and roles nurses fill. When an RN reported having more than one job title or a combination of jobs, each was listed separately. This pattern occurred predominantly within direct care clinical positions, indicating multiple functions or roles being carried out by some RNs. Assumptions were made in grouping job titles considered to be similar in scope into categories to facilitate initial review; however, specific functions carried out within these positions are explored in further detail and discussed later in the report (see Primary Care RN Roles: Key Functions section on page 11).

Table 3. Job Titles Reported by RNs Working in Primary Care Settings

Clinical (80 RNs)
- Registered Nurse or RN
- Staff RN
- Clinic RN
- Clinical RN
- Clinical Services RN
- Ambulatory Care RN
- Family Practice RN
- Pod RN
- Team RN
- Caregiver
- Primary Nurse
- Care Team Nurse
- RN I
- RN I Caregiver
- RN II
- Clinical RN II
- RN III Clinical
- Nurse IV
- Senior Nurse
- Triage RN
- Intake Nurse
- Back Office RN
- Urgent Care RN
- Clinical Assistance RN
- Tactical RN
- Relief RN
- Travel RN
- Resource RN

Advice-Response (45 RNs)
- Advice Nurse
- Call Center Triage Nurse
- Telephone Triage
- Phone Triage Nurse
- Patient Portal Response Nurse

Coordination — Clinical (43 RNs)
- Care Manager
- RN III Care Manager
- Nurse Care Manager
- RN Care Manager
- RN Care Coordinator
- Case Manager
- RN Case Manager
- Hospital Transition Nurse
- Transition of Care RN
- Transitional Care Manager
- Regional Vaccine Coordinator
- Population Health RN

Supervision (24 RNs)
- Supervisor
- RN Supervisor
- Supervising Clinic Nurse
- RN Clinical Supervisor
- Clinic Supervising RN
- Clinical Supervisor
- RN Clinic Supervisor
- RN Pod Supervisor
- Nurse Supervisor
- Senior Clinic Nurse Compliance
- Outpatient Nurse Supervisor
- RN Clinical Team Supervisor
- RN Back Office Supervisor
- Clinic Staff Supervisor

Coordination — Care Team (16 RNs)
- Charge Nurse
- Charge RN
- Lead RN
- Team Leader
- Care Team Panel Manager
- Clinic Coordinator
- RN Clinic Coordinator
- Service Coordinator

Education (9 RNs)
- Nurse Educator
- RN Instructor
- Nursing Instructor
- Certified Diabetes Educator
- Educator
- Clinical Staff Educator

Management (14 RNs)
- Clinic Manager
- RN Clinical Manager
- Clinical Nurse Manager
- Manager
- Assistant Nurse Manager
- Assistant Clinical Nurse Manager
- Senior Manager of Nursing
- Patient Care Manager
- Diabetes Program Manager
- Internal Auditor Clinical Operations
- Quality Improvement

Clinical — Specialty Role (11 RNs)
- Outpatient Infusion Center RN
- High Risk OB/GYN RN
- OB Resource Nurse
- Pediatric Specialty RN
- Wound Care RN
- Hospital Transition Nurse
- Transition of Care RN

Administrative (5 RNs)
- Administrator
- Administrative RN
- Director
- Director of Quality Improvement

Note: All 199 primary care RNs responded; some reported having more than one job title or a combination of jobs.

Organizational Profile

Primary care services are provided by different types of organizations, ranging from independent, provider-owned practices to those that are part of large public, community, or private health care networks, as well as primary care services provided within and across large regional, statewide, or national health care systems. The types of primary care sites responding to and completing the survey were compared with the list of types of primary care sites intended in the design of the sample survey (Table 4). Defining the respondent profile is helpful to inform the review and interpretation of findings reported. It was possible although uncommon for a primary care site leader to select more than one category where applicable.

Populations served by these primary care sites were distributed across anticipated categories of internal medicine (58), geriatrics (47), family medicine (60), pediatrics (48), and women's health (54), as displayed in Figure 4. Other categories or descriptors written in by a small number of respondents included adult medicine (5), behavioral and mental health (5), urgent care (1), sports medicine (1), HIV/infectious disease (1), homeless (1), podiatry (1), optometry (1), specialty care (1), employee health (1), osteopathic (1), and acupuncture (1).

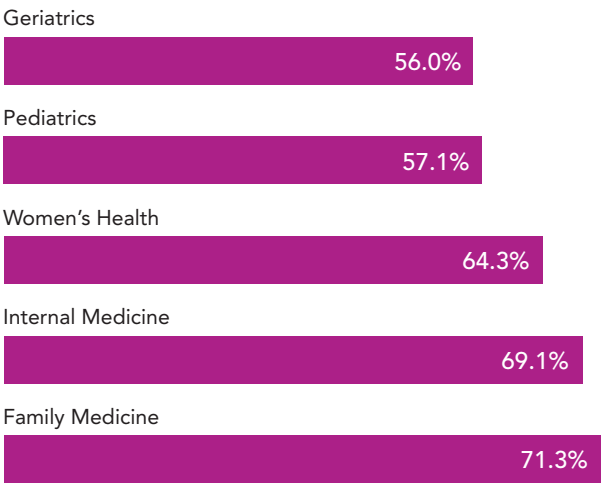
The size of primary care practices was of particular interest since this can influence and contribute to the type of primary care practice model carried out, the type and number of providers, and the utilization of various health professionals and their interprofessional team-based roles, including RNs as the central focus of this survey. The measure of primary care volume used in this survey was the average number of patient visits or appointments scheduled per day, across all types of providers and visit types. The number of appointments most frequently reported was fairly evenly distributed from a low of <50 visits up to 200 visits per day, as reported by about 72% of

Table 4. Type of Primary Care Sites Reported

	SITES RESPONDING	
	%	NUMBER
Public, government, or county clinic or health system	53.6%	45
Community health center	21.4%	18
Veterans Health Administration health care system	11.9%	10
University hospital or health system	10.7%	9
Community hospital or health system	6.0%	5
Walk-in clinic	3.6%	3
Indian health clinic	2.4%	2
School-based clinic	2.4%	2
Health maintenance organization (HMO)	1.2%	1
Business or retail store	0%	0
Free clinic	0%	0
Migrant health center	0%	0
Private practice (provider-owned)	0%	0
Rural or frontier health center	0%	0
Totals	**113.1%**	**95**

Notes: 84/112 primary care site leaders responded. Some respondents selected more than one category, which is why the sum of the percentages is >100%.

Figure 4. Type of Population Served at Primary Care Sites



Notes: 84/112 primary care site leaders responded. Respondents were able to select more than one category as applicable to their practice.

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respondents (Table 5). Large practices with daily visit volumes over 500 visits per day were reported by 11 respondents (13.3%), with comments from two of the largest sites indicating that the visit volume reported included access to multiple clinics within their location or served by their center.

In addition to patient volume, primary care sites provided information on the number and type of providers, RNs, and other health care professionals working in their settings. The size of each practice, complexity of the population, and types of services provided inform both the need for and opportunity to effectively utilize various roles and specialties working within an interprofessional health care team model. Primary care site leaders provided information on the type and number of providers in four main categories, as displayed in Table 6.

Of the 81 practice sites responding to this question, 81.5% (66) indicated utilizing one or more NP providers, with NPs comprising 30.6% of provider FTEs (full-time equivalents). Four primary care sites also specified utilizing psychiatrists as a category of MDs in addition to the general categories of providers listed in the table. Responses received from nine sites that reported utilizing more than 25 providers of any single type, in multi-clinic or large centers, were not included in the table because the specific number of FTEs was not reported.

Table 5. Primary Care Clinic Volumes

AVERAGE NUMBER OF VISITS OR APPOINTMENTS PER DAY	SITES RESPONDING %	SITES RESPONDING NUMBER
<50	15.7%	13
50–100	20.5%	17
101–150	20.5%	17
151–200	15.7%	13
201–250	7.2%	6
251–300	6.0%	5
301–350	1.2%	1
351–400	0%	0
401–450	0%	0
451–500	0%	0
>500	13.3%	11
Totals	**100%**	**83**

Note: 83/112 primary care site leaders responded.

Table 6. Type and Number of Providers

	TOTAL FTEs	PERCENTAGE
Physician (MD or DO)	533	57.6%
Nurse Practitioner (NP)	283	30.6%
Physician Assistant (PA)	90	9.7%
Certified Nurse-Midwife (CNM)	20	2.2%
Totals	**926**	**100%**

Notes: 81/112 primary care site leaders responded. *DO* is doctor of osteopathy; *FTEs* is full-time equivalents; and *MD* is doctor of medicine.

Utilization of Health Care Professionals and Allied Health Disciplines in Primary Care Settings

Primary care sites reported utilizing a wide range of health professionals, including RNs, in their settings. The type and number of each discipline are listed in Table 7. Of the 112 primary care site leaders who responded to the survey, 74% (83) provided information on the number and type of health professionals employed.

Comments received indicated that some site leaders did not have the personnel information needed or at hand when completing the survey, or opted to not answer this question; thus, information from 29 sites was not reported. The table displays the total number of FTEs reported in aggregate across the 83 sites responding, the percentage of each type of role, and the percentage of primary care sites that reported utilizing each role. Within the respondent sample, administrative leaders, managers, and supervisors comprise 724 FTEs, or 28.1% of job types in the categories requested, with several of these being RN positions. RNs in more direct care roles were reported to be another 322, or 12.5%, considering both CNS and RN positions together, which is comparable to the utilization of LVNs at 12.4 %). Direct care RN and LVN roles combined were reported to be 24.9% of the health care team. Medical assistants (MAs) are the largest single group of health professionals reported, with 16.7% of FTEs reported in aggregate across participating sites. Several primary care sites report utilizing licensed clinical social workers (LCSWs), comprising just over 4.8% of the health care team positions, providing further insight into complex social, family, and community-related needs that impact health. Considering categories of health care personnel providing direct clinical care, more than half of these primary care sites reported utilizing RNs (62.7%), LVNs (55.4%), MAs (53.0%), and LCSWs (50.6%).

Table 7. Type and Number of Health Professionals and Allied Health Disciplines

	FTEs		SITES	
	NUMBER (*N* = 2,572)	%	NUMBER (*N* = 83)	%
Administrative Leader*	155	6.0%	59	71.1%
Administrative Leader (RN)	78	3.0%	41	49.4%
Administrative Nurse Leader (RN)	132	5.1%	63	75.9%
Quality Director/Manager	53	2.1%	36	43.4%
Front Office Supervisor*	121	4.7%	53	63.9%
Clinical Supervisor (RN)	111	4.3%	47	56.6%
Clinical Supervisor*	43	1.7%	18	21.7%
Clinical Nurse Leader (RN, CNL)	31	1.2%	14	16.9%
Clinical Nurse Specialist (RN, CNS)	13	0.5%	8	9.6%
Registered Nurse (RN)	309	12.0%	52	62.7%
Licensed Vocational Nurse (LVN)	319	12.4%	46	55.4%
Medical Assistant (MA)	429	16.7%	44	53.0%
Certified Nursing Assistant (CNA)	26	1.0%	7	8.4%
Pharmacist	85	3.3%	24	28.9%
Licensed Clinical Social Worker (LCSW)	124	4.8%	42	50.6%
Counselor	20	0.8%	9	10.8%
Behavioral Health Worker	92	2.6%	25	30.1%
Dietitian or Nutritionist	67	2.6%	29	34.9%
Health Educator	75	2.9%	25	30.1%
Health Coach	67	2.6%	11	13.3%
Radiology Technician	60	2.4%	17	20.5%
Lab Technician	95	3.7%	25	30.1%
Community Health Worker or Promotora	57	2.2%	16	19.3%
Health Navigator	10	0.3%	6	7.2%

*Not an RN position.

Notes: 83/112 primary care site leaders responded. *FTEs* is full-time equivalents. Sites reporting >25 FTEs of any single discipline were not included as the specific number of FTEs was not provided.

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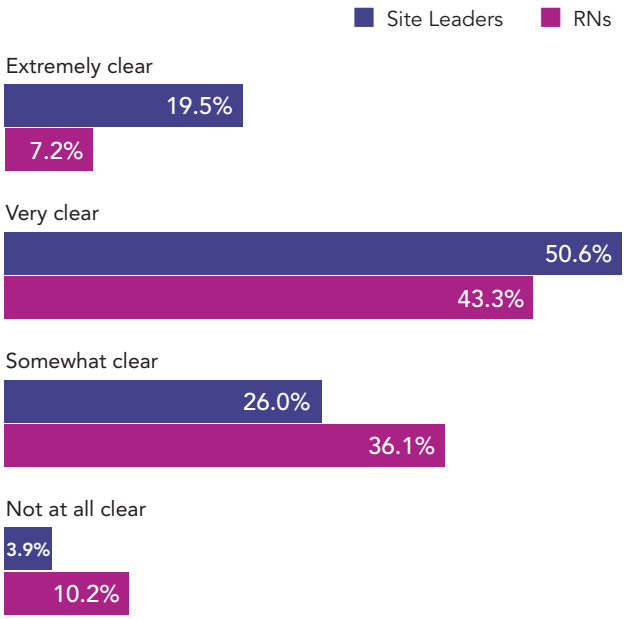
Primary Care RN Roles: Key Functions

Considering the wide range of clinical, care coordination, education, and leadership roles RNs fill, and the diversity of practice settings and patient populations within the primary care practice environment, clarity of RN roles, key functions, and expectations carried out within team environments is important. Both primary care leaders and primary care RNs were asked about the clarity of RN roles, responsibilities, and expectations within their team. Figure 5 compares aggregate responses. Overall, RNs report having less clarity in their roles than reported by primary care site leaders, with only 50.5% of RNs indicating their roles were extremely clear or very clear, compared with 70.1% of primary care site leaders who indicated RN roles were extremely clear or very clear. Given the dynamic changes in health care and the complexities involved in primary care settings, data suggest there is further opportunity to review, evaluate, modify, and clarify RN roles, key functions, and expectations.

Figure 5. Level of Clarity of RN Roles, Responsibilities, and Expectations, Site Leaders vs. RNs



Note: 104/123 RNs and 48/72 primary care site leaders responded.

RNs in Direct Care Positions

RNs in primary care settings fill diverse roles and perform a broad range of functions within their scope of practice, licensure, education, and experience. Differences in scope of responsibilities and how functions are carried out are to be expected between types of organizations that provide primary care, considering specific needs and services unique to each primary care population and setting, as well as key roles involved within interprofessional teams. To explore core functions and learn how time was spent in a typical week, RNs responding to the survey ranked and compared various functions using a five-point scale, indicating those functions never performed in their role, those on which minimal, average, or significant time was spent, and those on which the greatest amount of time was spent.

To more clearly understand the focus of time spent in carrying out specific functions performed by primary care RNs in direct care roles, responses from those RNs holding direct care positions as reported earlier in the "Clinical" category, which included 28 distinct job titles (see Table 3), are displayed in Table 8 (see page 12). While RNs in these positions report performing a broad range of functions, the greatest amount of time is spent in three primary areas: patient intake assessment and triage, patient histories and screening, and treating patients through clinical interventions and procedures carried out through provider orders using standardized procedures.

Functions in which an average amount of time was typically spent included patient/family/caregiver teaching or health promotion, coordinating care between health care settings or services, quality improvement processes, and training, developing, and/or mentoring RNs and other health team members. While the majority of RNs in these direct clinical roles reported no time spent performing administrative and management functions (including supervision and coordination of the primary care team), a small percentage of the RNs in these direct care positions in a few settings did report providing human resource functions (including hiring and performance

Table 8. Functions Performed by Primary Care RNs in Direct Care Positions, by Amount of Time

	NEVER	MINIMAL	AVERAGE	SIGNIFICANT	GREATEST
Intake assessment and triage	0.0%	17.9%	20.9%	25.4%	35.8%
Patient history/screening	2.9%	23.5%	25.0%	29.4%	19.1%
Treatment, clinical interventions, and procedures within independent RN role	4.5%	25.4%	32.8%	17.9%	19.4%
Treatment, clinical interventions, and procedures delegated to RN(s) utilizing standardized procedures with provider order	4.1%	21.9%	32.9%	24.7%	16.4%
Preparing care plans	46.9%	31.3%	12.5%	3.1%	6.3%
Patient/family/caregiver teaching, health coaching, self-care management, or health promotion activities	6.0%	29.9%	29.9%	20.9%	13.4%
Conducting telehealth visits or services	64.6%	13.8%	13.8%	1.5%	6.2%
Chronic disease management (e.g., monitoring and improving outcomes for patients with diabetes, hypertension, asthma, or COPD)	22.4%	29.9%	16.4%	19.4%	11.9%
Case management for complex patients (e.g., patients who are homeless, are substance abusers, or have multiple chronic conditions)	32.4%	37.8%	9.5%	10.8%	9.5%
Population health management support to care team	44.9%	29.0%	11.6%	5.8%	8.7%
Coordinating care for patients among or between health care services	10.3%	33.8%	33.8%	10.3%	11.8%
Participating in quality or process improvement activities related to direct care	17.1%	37.1%	24.3%	11.4%	10.0%
Participating in quality and/or process improvement activities within or between health care settings and services	33.3%	26.4%	22.2%	11.1%	6.9%
Training, developing, and/or mentoring other RNs	26.1%	30.4%	33.3%	7.2%	2.9%
Training, developing, and/or mentoring other health team members (not RNs)	20.3%	36.2%	23.2%	13.0%	7.2%
Medical office, clerical, or scheduling functions	24.3%	35.7%	24.3%	11.4%	4.3%
Supervision and coordination of primary care team (e.g., scheduling, conducting team meetings)	51.5%	29.4%	11.8%	4.4%	2.9%
Human resource functions (e.g., hiring, performance evaluation)	82.1%	13.4%	1.5%	0.0%	3.0%
Administrative functions (e.g., strategic planning, program development, budgeting and resource management)	88.2%	7.4%	1.5%	0.0%	2.9%
Business functions (e.g., marketing, business development, contracting)	92.5%	4.6%	1.5%	0.0%	1.5%
Leadership role responsible for site	41.2%	19.1%	20.6%	11.8%	7.4%

Notes: 60/80 direct care RNs responded. Percentages may not add up to exactly 100% due to rounding. *COPD* is chronic obstructive pulmonary disease.

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evaluation), program development, resource management, and primary care site leadership more typically done by RNs in leadership positions.

Challenges, Barriers, and Opportunities to Expand RN Utilization

The scope of RN practice defined by California's Nursing Practice Act is broad and includes a range of independent functions that can be carried out by licensed RNs, functions conducted as part of an interprofessional team, and interventions delegated by providers that require oversight and direction. Some of the functions carried out by RNs in primary care can be revenue generating and billed for reimbursement, or support revenue enhancement by contributing meet-performance measures related to selected health outcomes. From a list of typical primary care services that can be carried out by an RN with revenue-generating potential, primary care site leaders indicated which services they currently provided and received revenue for in their settings (Table 9). Regardless of the extent to which each of these was provided, a follow-up question explored opportunities for the adoption or further expansion of these RN role functions in their setting.

Of the 74 primary care site leaders that responded to this question, revenue-generating functions conducted by RNs ranged from a low of 17.6% of sites that reported RNs provide care for a defined panel of patients as part of an interprofessional team, to a high of 48.6% of sites that reported RNs conduct RN-only visits utilizing standardized procedures that do not require direct provider involvement. Six primary care sites submitted comments describing types of services that were being reimbursed. Examples included wound clinic, nutrition and exercise counseling for pregnant women provided through the Comprehensive Perinatal Services Program (CPSP), teaching insulin administration and glucose testing, and post-ER or hospital discharge follow-up within seven days.

Table 9. Revenue-Generating Functions Provided by Primary Care RNs

	SITES CURRENTLY REIMBURSED *N* = 74/112 SITE LEADERS	OPPORTUNITY FOR RN ROLE EXPANSION *N* = 78/112 SITE LEADERS	OPPORTUNITY FOR RN ROLE EXPANSION *N* = 51/199 RNs
Conduct RN/provider co-visits	23.0%	41.0%	46.4%
Provide care for a defined panel of patients as part of an interprofessional team	17.6%	38.5%	43.7%
Conduct RN-only visits that do not require direct provider involvement (e.g., wellness visits, immunizations)	48.6%	50.0%	52.3%
Conduct RN-only visits that require provider oversight through standardized procedures (e.g., medication refills, medication titration, chronic disease management)	45.9%	44.9%	46.4%
Provide chronic care management	31.1%	56.4%	42.4%
Provide care coordination	28.4%	53.8%	54.3%
Provide nonbailable but value-added services (e.g., RN new-patient visits, complex care management)	39.2%	39.7%	35.8%
Unknown or uncertain	25.7%	11.5%	
Not applicable; no RNs in this setting	8.1%	1.3%	

Responses also indicate further opportunity to expand RN roles and their utilization related to revenue-generating functions in each of these areas, with at least 50% of site leaders reporting scope of services related to chronic care management, care coordination, and conducting RN-only visits as key areas. RNs practicing in these primary care sites similarly reported opportunities for key functions to support revenue enhancement. The need for education and development is also evident, with 25.7% (19) of site leaders reporting either not knowing about or being uncertain if these types of services were being provided or revenue captured.

Exploring challenges to expanding the utilization of RNs and their roles was of particular interest. Primary care site leaders provided feedback through open-ended comments describing types of barriers specific to each of their settings. Responses summarized from 63/112 site leaders include the following:

- Leadership
  - Need administrative direction and commitment to hire RNs
  - Lack of infrastructure support
  - Limited information, guidelines, and support
- Personnel
  - Lack of staffing and time necessary to expand RN roles given the allocation of FTEs, current workload demands, responsibilities, and administrative tasks
  - Lack of sufficient number of RNs qualified to fill available openings
  - RN turnover
  - Limited resources to recruit
  - Noncompetitive salary
  - Staffing shortages
- Development
  - Limited resources to train, mentor, and develop RNs
  - Lack of RN oversight; supervisors and leaders are not RNs
  - RNs lack qualifications and experience in performing these functions
  - Training time needed
- RN role
  - Ability to delegate functions that can be provided by other personnel
  - Provider buy-in allowing RNs to practice more independently
  - Hesitance by providers, RNs, and other staff
  - RN reluctance to change or expand their role
  - Limitations imposed or perceived related to potential risk and quality of full RN scope
- Financial
  - Fiscal limitations and constraints with high cost of RN salary
  - Lack of budget for RN personnel
  - Lack of billing processes, systems, and related activities
  - Limited funding sources for organization to receive RN visit revenue
  - Acceptance by insurance companies
- Facilities
  - Physical space constraints for RNs to carry out expanded roles

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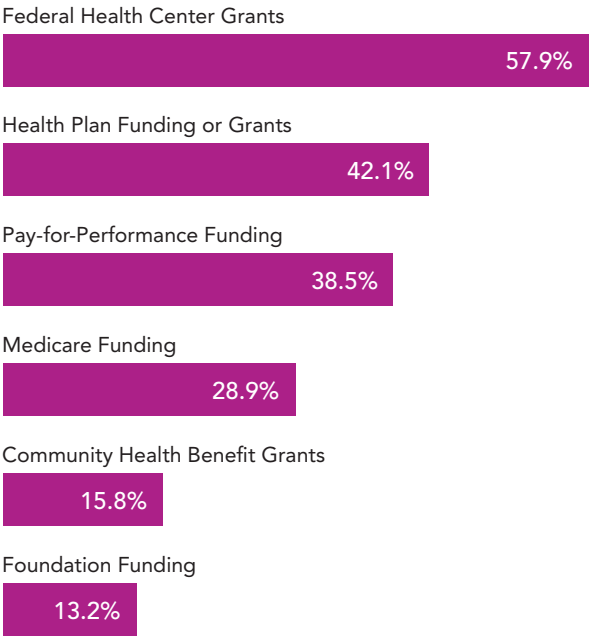
The use of defined sources of funding to support the sustainability of RN positions beyond billing and reimbursement for services was explored in further detail. Primary care sites selected from a list of typical funding categories, indicating as many as were applicable in their experience. The number of primary care sites responding to this question was limited, with responses from only 38 of the 112 sites, as displayed in Figure 6. Comments received from another 20 primary care site leaders reported sources of primary care funding to be either "none" or "unknown," indicating that there is further opportunity for some primary care sites to learn about and benefit from a range of funding options to support and augment services provided.

There is further opportunity for some primary care sites to learn about and benefit from a range of funding options to support and augment services provided.

Figure 6. Defined Sources of Primary Care Funding Used for RN Positions



Note: 38/112 primary care site leaders responded.

Knowledge, Skills, and Attributes Important to RN Practice in Primary Care

Primary care RNs rated the level of importance they attributed to various categories and descriptors of nursing knowledge, skills, and attributes (KSAs) considering their experience in primary care practice. A five-point scale was used, ranging from the highest rating of 5 for those KSAs deemed *essential* for RNs to effectively practice in primary care settings, to the lowest rating of 1 for KSAs deemed either *not important* or *not applicable*. This question was completed by 155 of the 199 RNs participating in this survey, with responses displayed in Table 10 (see page 16).

Table 10. Knowledge, Skills, and Attributes Important to RN Practice in Primary Care

	LEVEL OF IMPORTANCE*				
	5	4	3	2	1
Skills — Ability to:					
Effectively use the electronic health record and registries to communicate with the health care team and document patient care management	71.6%	22.6%	5.8%	0%	0%
Effectively select appropriate immunizations and administration intervals for patient age levels	48.4%	34.8%	10.3%	3.2%	3.2%
Ensure that patients receive US Preventive Services Task Force (USPSTF) age- and gender-appropriate health screenings and vaccines	36.1%	36.1%	15.5%	6.5%	5.8%
Effectively and accurately triage patients either telephonically or in person	70.3%	23.9%	3.9%	1.3%	0.6%
Independently conduct nursing patient visits within scope of RN practice or using clinical or patient-specific standardized procedures and protocols	57.4%	27.1%	5.8%	3.9%	5.8%
Conduct joint co-visits with primary care providers by initiating visit histories, determining potential patient needs, and effectively communicating a plan of care	38.1%	32.3%	18.1%	4.5%	7.1%
Assess patient and family knowledge and provide education to patients and their families about prevention and management of their conditions	53.9%	33.1%	9.1%	1.3%	2.6%
Use motivational interviewing and patient-centered goal setting to help patients and families attain the skills, knowledge, and confidence they need to improve their health	43.2%	35.5%	13.5%	3.9%	3.9%
Conduct medication reconciliation and promote medication adherence by assisting patients and families in identifying and overcoming adherence barriers	53.5%	27.1%	13.5%	3.9%	1.9%
Collaborate with external health care professionals and community-based organizations to coordinate care, manage care transitions to and from health care settings, provide resources, and help patients navigate the health care system	41.6%	36.4%	16.2%	3.9%	1.9%
Collaboratively manage complex patients having multiple conditions of homelessness, mental health, and/or substance abuse issues	37.4%	38.7%	16.8%	3.9%	3.2%
Function effectively in an interdisciplinary team using collaborative communication, such as one-on-one communication, huddles, and team meeting facilitation	51.3%	37.7%	8.4%	0.6%	1.9%
Interact with team members as colleagues	72.7%	20.8%	5.8%	0%	0.6%
Identify contributions to patient care that different disciplines can offer to strengthen cooperation and coordination	43.8%	39.9%	13.1%	2.0%	1.3%
Exhibit leadership by training, supervising, and mentoring team members	41.3%	38.7%	13.5%	3.2%	3.2%
Work collaboratively with team members on quality improvement processes and change projects to address system issues	45.8%	37.4%	13.5%	1.9%	1.3%

**5* is essential, *4* is very important, *3* is important, *2* is low importance, and *1* is not important or not applicable.

Notes: 155/199 primary care RNs responded.

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Table 10. Knowledge, Skills, and Attributes Important to RN Practice in Primary Care, *continued*

	LEVEL OF IMPORTANCE*				
	5	4	3	2	1
Knowledge of:					
Symptoms, causes, complications, treatment, and prevention of chronic conditions commonly managed in primary care settings (e.g., diabetes, hypertension, asthma)	74.0%	16.9%	9.1%	0%	0%
Indications and results of common laboratory tests for diagnosis and management of conditions commonly managed in primary care settings	57.4%	27.7%	12.3%	1.9%	0.6%
Indications, usage, risks, and side effects of medications used for conditions commonly managed in primary care settings	58.7%	29.7%	11.0%	0.6%	0%
Behavior change theory to assist patients and families with lifestyle change, medication adherence, and goal setting	37.4%	40.0%	16.1%	4.5%	1.9%
Social determinants of health that have the potential to impact families' and patients' self-care management (e.g., race, ethnicity, income, gender, education, housing, and access to food and resources)	42.9%	33.1%	20.8%	1.9%	1.3%
Principles of continuous quality improvement for practice improvement	36.8%	36.8%	23.2%	1.9%	1.3%
Care coordination models, methods, and systems	34.8%	29.0%	27.1%	7.1%	1.9%
Community resources and services	49.4%	33.1%	14.3%	1.9%	1.3%
Attributes — Ability to:					
Be nonjudgmental and accepting, and demonstrate supportive attitudes when interacting with patients and families of all types, including those suffering from addiction, mental health issues, or homelessness	71.6%	20.6%	7.7%	0%	0%
Exhibit confidence in the capability of patients and their families to take action to effectively manage their health	60.0%	32.3%	7.1%	0.6%	0%

*5 is essential, 4 is very important, 3 is important, 2 is low importance, and 1 is not important or not applicable.

Notes: 155/199 primary care RNs responded.

Academic Preparation of Students in RN Pre-licensure Programs for Practice in Primary Care Settings

RN Pre-licensure Programs

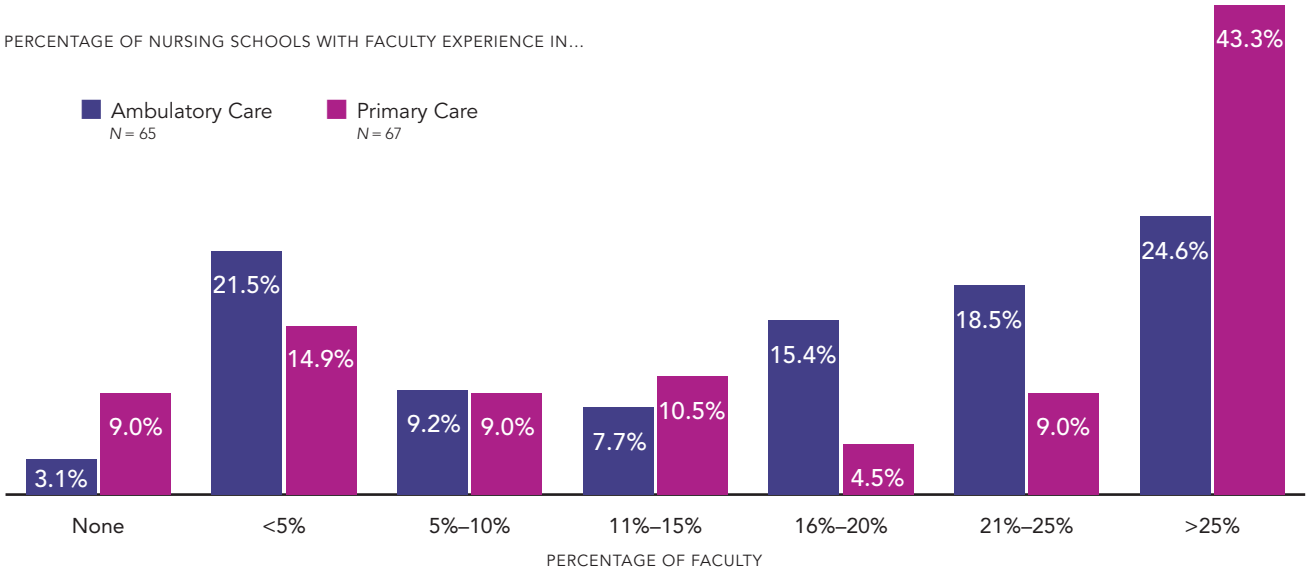
The scope of RN practice encompasses various educational pathways that prepare students for licensure as an RN in California in RN pre-licensure programs, and RN graduate programs for RNs to advance their education by attaining BSN, MSN, and doctoral degrees, including specialty programs for advanced practice roles such as nurse practitioners. As this primary care project focused on RN licensure, three types of RN pre-licensure programs were surveyed: associate degree in nursing (ADN), bachelor of science in nursing (BSN), and entry-level master's (ELM) in nursing. California no longer provides RN diploma programs, yet a few of these programs still remain in other states, and 5.6% of the RN workforce in California holds an RN diploma as their highest degree in nursing.

While each of these programs provides the RN pre-licensure nursing curriculum required by the California BRN, the focus, course content, range of clinical education experience, and types of settings used in both the BSN and ELM degree programs include further coursework and learning opportunities (beyond the pre-licensure content) specific to public health and management of populations, as well as leadership development, in preparation for diverse types of clinical and leadership roles.

Nursing Faculty

Faculty teaching in RN pre-licensure programs demonstrate sufficient knowledge, education, and experience to be approved by the BRN to teach in one or more of five specific specialty areas: medical-surgical, critical care, obstetrics, pediatrics, and mental/behavioral health. While individual faculty have varied levels of education and unique nursing practice backgrounds along with academic teaching experience, the composition of faculty teams often exhibits diverse expertise with broad collective practice experience, supporting nursing programs in strengthening the preparation of nursing students for practice in diverse settings and varied roles.

Figure 7. Nursing Faculty Experience in Ambulatory Care and Primary Care Settings



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Considering the various backgrounds, experience, and composition of faculty teaching in RN pre-licensure programs, schools reported the percentage of faculty with experience practicing or teaching in some type of ambulatory care setting, and in primary care specifically (Figure 7, page 18). Academic leaders from 63/65 RN schools, or 96.9%, reported having some faculty with ambulatory care experience, and academic leaders from 61/67, or 91.0%, of such programs reported having faculty with primary care experience specifically. Almost half of these programs — 29/67, or 43.3% — reported that more than 25% of their faculty had professional practice or teaching experience in primary care. In addition, such faculty were employed in comparable numbers across all levels of RN pre-licensure programs, with 45.5% teaching in ADN programs, 56.3% in BSN programs, and 50.0% in ELM programs.

Nursing Student Interest

Nursing schools were asked to estimate the percentage of students that indicate interest in primary care practice, based on their experience working with RN pre-licensure students over the most recent two years. Findings from 61/68 schools suggest student interest to be fairly well distributed:

- **35.8%** reported that more than 25% of their nursing students indicate interest in primary care.
- **22.4%** reported that between 11% and 25% of their nursing students indicate interest in primary care.
- **32.8%** reported that less than 10% of nursing students indicate interest in primary care.

Nursing schools reported whether their programs and/or faculty either encouraged or discouraged RN students to consider a career in primary care. A majority of programs (64.2%) indicated a neutral position overall, while 34.3% reported encouraging a career in primary care, and only 1.5% reported discouraging students from primary care practice. Comments submitted from academic leaders provide examples of how or why students may be encouraged or discouraged from considering careers in primary care, including considerations of further education and/or experience.

"Many of our students plan to achieve an advanced practice role, most of which are in primary care (PNP, FNP, midwife, mental health NP)."

"Our curriculum emphasizes the ability of students to work in all areas. Course content includes a community health thread with some (limited) experience in clinics; however, the majority of application is in acute care."

"Primary care clinical education rotations are provided."

"Our program encourages students to explore diverse roles and settings."

"Program is encouraging primary care as a good career option due to changing health care trends."

"Primary care settings seem to prefer medical assistants or LVNs to perform tasks at less salary cost."

"Faculty believe ambulatory care practice is not as significant as acute care."

"We encourage students to obtain their BSN to be better equipped for primary care practice."

Structure, Content, and Learning Experiences

RN pre-licensure programs prepare students to begin practice as a newly licensed nurse in a variety of clinical areas and practice settings. Areas of practice required by the BRN to be included in all RN pre-licensure programs include medical-surgical, obstetrics, pediatrics, and mental or behavioral health, with public health required to be provided in BSN and ELM programs. While curricular content and a minimum number of hours of clinical experience are required for each of these areas, the types of settings and levels of care

in which each of these specialties are taught are not specified, and can vary between programs.

Background regarding the extent to which RN pre-licensure programs include curricular components carried out through didactic course content as well as clinical experience across various specialties and practice settings was explored to inform the readiness of newly licensed RNs for licensure and entry into practice. In addition to the standard broad specialties required to be included in RN pre-licensure programs, survey questions were designed to include ambulatory and primary care course content and clinical experience as an indication of current practice in nursing programs to more directly inform this project, with findings reported in Table 11.

Table 11. Course Content and Clinical Experiences Provided by RN Pre-licensure Programs

	NOT INCLUDED	OPTIONAL/ VARIABLE	MINIMALLY INCLUDED	REGULARLY INCLUDED	EMPHASIZED
Course Content					
Medical-Surgical	6.2%	3.1%	10.8%	43.1%	36.9%
Obstetrics	3.1%	0%	12.3%	53.8%	30.8%
Pediatrics	3.2%	0%	3.2%	60.3%	33.3%
Mental Health or Behavioral Health	1.5%	1.5%	6.2%	56.9%	33.8%
Community Health	9.4%	6.3%	17.2%	45.3%	21.9%
Public Health*	27.0%	1.6%	28.6%	25.4%	17.5%
Ambulatory Care	4.8%	9.5%	39.7%	36.5%	9.5%
Primary Care	**9.2%**	**6.2%**	**29.2%**	**41.5%**	**13.8%**
Clinical Experience					
Medical-Surgical	6.2%	6.2%	10.8%	40.0%	36.9%
Obstetrics	3.1%	3.1%	18.5%	50.8%	24.6%
Pediatrics	0%	4.6%	13.8%	55.4%	26.2%
Mental Health or Behavioral Health	4.6%	0%	7.7%	58.5%	29.2%
Community Health	7.9%	12.7%	23.8%	42.9%	12.7%
Public Health*	31.3%	14.1%	17.2%	26.6%	10.9%
Ambulatory Care (outpatient surgical or procedural setting)	6.2%	18.5%	35.4%	33.8%	6.2%
Ambulatory Care (specialty clinic or office)	13.8%	12.3%	38.5%	27.7%	7.7%
Primary Care (office or clinic)	**25.4%**	**17.5%**	**36.5%**	**14.3%**	**6.3%**
Optional Clinical Preceptorship — Ambulatory Care (outpatient surgical or procedural setting)	36.9%	15.4%	24.6%	16.9%	6.2%
Optional Clinical Preceptorship — Ambulatory Care (specialty clinic or office)	41.5%	15.4%	18.5%	18.5%	6.2%
Optional Clinical Preceptorship — Primary Care (office or clinic)	**53.8%**	**10.8%**	**15.4%**	**13.8%**	**6.2%**

*Public health is provided in BSN and ELM programs; it is not included in ADN programs.

Note: 65/68 nursing schools with RN pre-licensure programs responded.

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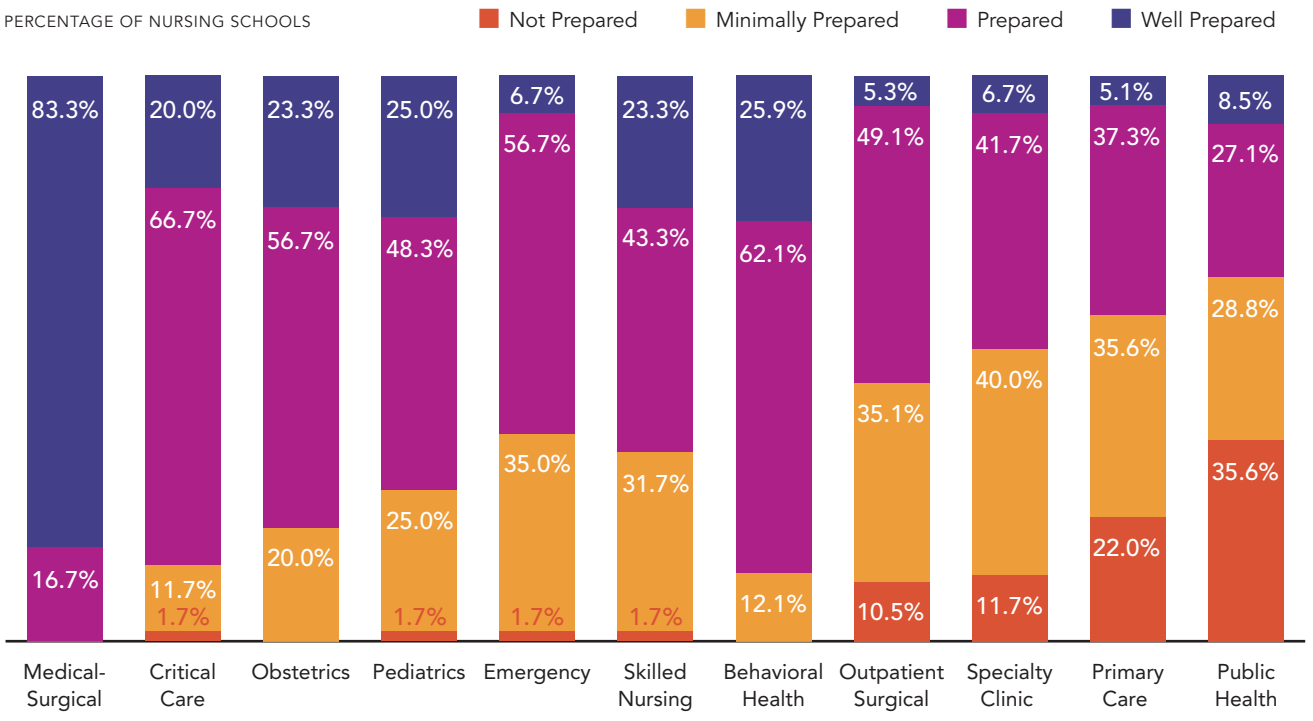
Comments submitted by respondents clarify that the BRN does not require RN pre-licensure course content to meet a specific percentage of overall content, and a few programs reported not having clinical preceptorships as an option for senior students during their last semester prior to program completion. The ability to place students with an experienced RN functioning as a preceptor in either an ambulatory care setting or a primary care site specifically was reported to be challenging. Sourcing primary care sites that have the ability and capacity to provide the needed learning environment, including RN supervision of key functions to guide student role development, for an RN pre-licensure student to be assigned there was cited as a limiting factor.

RN pre-licensure programs prepare students to begin practice as newly licensed nurses in various specialties and settings upon completion of the nursing program and passing the NCLEX examination to become licensed as an RN. RNs beginning practice in their first RN role demonstrate novice- to beginner-level competencies in core knowledge, skills, and attributes with a range of patient populations, in various practice settings, and within specific nursing roles, consistent with the type of nursing program, curricular components, and learning experiences provided.

Nursing program leaders report some variation in the level of student preparation in different practice settings upon program completion and graduation, as displayed in Figure 8. Findings suggest areas where further support, education, development, and/or experience may be indicated for newly licensed RNs to successfully transition to practice in specific specialty settings and roles. In general, RN pre-licensure programs collectively report that students are more prepared for practice in traditional acute care settings than in ambulatory and community settings, including primary care.

Figure 8. Readiness of Newly Licensed RNs to Begin Practice, by Area



Notes: 60/68 nursing schools with RN pre-licensure programs responded. Public health readiness is influenced in part by the type of RN pre-licensure program. Public health content is included in BSN and ELM programs, but not in ADN programs.

Considering this variation in the level of preparation and readiness for practice reported across types of settings and patient populations, schools were then asked about the extent to which their RN pre-licensure programs prepare students with the knowledge, skills, and attributes (KSAs) needed to practice in a primary care setting specifically, based on the knowledge and experience of their program curriculum, learning experiences provided, and student population. Academic leaders reviewed the same list of KSAs the primary care RNs used when rating the importance of specific KSAs to their primary care practice, as reported earlier in Table 10. Nursing schools used a five-point scale to rate the extent to which their programs prepared nursing students to practice in primary care: 5, Emphasizes Preparation; 4, Prepares Students; 3, Minimally Prepares Students; 2, Does Not Prepare Students; and 1, Unknown or Uncertain. The responses are displayed in Table 12.

While nursing schools reported their RN pre-licensure programs prepared nursing students in each of the KSAs listed, areas where student knowledge and skill preparation were not as strong or less evident (when compared with key functions reported to be most important by primary care RNs) were reviewed. Most of these differences were found in specific skill-based functions, typically learned through experience and

Table 12. RN Pre-licensure Program Preparation of Students with the Knowledge, Skills, and Attributes to Practice in Primary Care

	LEVEL OF PREPAREDNESS*				
	5	4	3	2	1
Knowledge of:					
Symptoms, causes, complications, treatment, and prevention of chronic conditions commonly managed in primary care settings (e.g., diabetes, hypertension, asthma)	41.7%	50.0%	5.0%	3.3%	0%
Indications and results of common laboratory tests for diagnosis and management of conditions commonly managed in primary care settings	32.2%	57.6%	6.8%	3.4%	0%
Indications, usage, risks, and side effects of medications used for conditions commonly managed in primary care settings	40.0%	48.3%	6.7%	5.0%	0%
Behavior change theory to assist patients and families with lifestyle change, medication adherence, and goal setting	23.3%	56.7%	13.3%	6.7%	0%
Social determinants of health that have the potential to impact families' and patients' self-care management (e.g., race, ethnicity, income, gender, education, housing, and access to food and resources)	31.7%	53.3%	5.0%	8.3%	1.7%
Principles of continuous quality improvement for practice improvement	25.9%	56.9%	8.6%	6.9%	1.7%
Care coordination models, methods, and systems	11.7%	43.3%	33.3%	8.3%	3.3%
Community resources and services	18.3%	53.3%	20.0%	3.3%	5.0%
Attributes — Ability to:					
Be nonjudgmental and accepting, and demonstrate supportive attitudes when interacting with patients and families of all types, including those suffering from addiction, mental health issues, or homelessness	38.3%	50.0%	10.0%	0%	1.7%
Exhibit confidence in the capability of patients and their families to take action to effectively manage their health	30.0%	56.7%	11.7%	0%	1.7%

*5 is emphasizes preparation, 4 is prepares students, 3 is minimally prepares students, 2 is does not prepare students, and 1 is unknown or uncertain.

Notes: 60/68 RN pre-licensure programs responded.

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Table 12. RN Pre-licensure Program Preparation of Students with the Knowledge, Skills, and Attributes to Practice in Primary Care, *continued*

	LEVEL OF PREPAREDNESS*				
	5	4	3	2	1
Skills — Ability to:					
Effectively use the electronic health record and registries to communicate with the health care team and document patient care management	26.7%	65.0%	5.0%	0%	3.3%
Effectively select appropriate immunizations and administration intervals for patient age levels	16.7%	68.3%	10.0%	1.7%	3.3%
Ensure that patients receive US Preventive Services Task Force (USPSTF) age- and gender-appropriate health screenings and vaccines	6.8%	44.1%	32.2%	10.2%	6.8%
Effectively and accurately triage patients either telephonically or in person	1.7%	30.0%	46.7%	13.3%	8.3%
Independently conduct nursing patient visits within scope of RN practice or using clinical or patient-specific standardized procedures and protocols	1.7%	28.8%	40.7%	22.0%	6.8%
Conduct joint co-visits with primary care providers by initiating visit histories, determining potential patient needs, and effectively communicating a plan of care	5.0%	35.0%	30.0%	21.7%	8.3%
Assess patient and family knowledge and provide education to patients and their families about prevention and management of their conditions	25.0%	48.3%	21.7%	0%	5.0%
Use motivational interviewing and patient-centered goal setting to help patients and families attain the skills, knowledge, and confidence they need to improve their health	11.7%	50.0%	23.3%	8.3%	6.7%
Conduct medication reconciliation and promote medication adherence by assisting patients and families in identifying and overcoming adherence barriers	18.6%	52.5%	15.3%	8.5%	5.1%
Collaborate with external health care professionals and community-based organizations to coordinate care, manage care transitions to and from health care settings, provide resources, and help patients navigate the health care system	8.3%	40.0%	36.7%	6.7%	8.3%
Collaboratively manage complex patients having multiple conditions of homelessness, mental health, and/or substance abuse issues	15.0%	33.3%	33.3%	13.3%	5.0%
Function effectively in an interdisciplinary team using collaborative communication, such as one-on-one communication, huddles, and team meeting facilitation	22.0%	59.3%	13.6%	1.7%	3.4%
Interact with team members as colleagues	35.6%	55.9%	5.1%	0%	3.4%
Identify contributions to patient care that different disciplines can offer to strengthen cooperation and coordination	28.8%	49.2%	17.0%	1.7%	3.4%
Exhibit leadership by training, supervising, and mentoring team members	11.9%	57.6%	18.6%	6.8%	5.1%
Work collaboratively with team members on quality improvement processes and change projects to address system issues	22.0%	45.8%	20.3%	6.8%	5.1%

**5* is emphasizes preparation, *4* is prepares students, *3* is minimally prepares students, *2* is does not prepare students, and *1* is unknown or uncertain.

Notes: 60/68 RN pre-licensure programs responded.

application of knowledge to practice, with some of these also unique to primary care settings. Examples include the following:

- *Knowledge of:*
  - Care coordination models and methods
  - Community resources and services
- *Skills related to:*
  - Preventive health screening services and vaccines
  - Triaging patients
  - Conducting independent nursing visits within RN scope using standardized procedures
  - Conducting joint co-visits with primary care providers
  - Assessing patient and family knowledge about prevention and self-care management
  - Use of motivational interviewing and patient-centered goal setting
  - Medication reconciliation
  - Collaboration with external health care professionals and community-based organizations to coordinate care
  - Collaboratively managing complex patients with multiple conditions
  - Functioning effectively in an interdisciplinary team using collaborative communication
  - Exhibiting leadership in training, supervising, and mentoring team members
  - Working collaboratively with team members on quality improvement processes and change projects to address system issues

Respondents from nursing schools commented on the strengths, gaps, and limitations of their RN pre-licensure programs considering the preparation of nursing students and the skills needed for them to be effective in primary care practice.

Areas of program *strengths* reported include the following:

- Public health (provided in BSN and ELM programs), community health
- Opportunities for students to experience care in the community, including primary care, as part of their pediatric and obstetrics courses and clinical education rotations
- Knowledge and experience with a wide range of conditions and levels of care
- Critical thinking considering priorities of care and primary, secondary, and tertiary health needs
- Communication with the interprofessional team
- Assessment skills, including diverse patient populations
- Knowledge of chronic diseases and clinical experience with these conditions
- Diverse patient needs with at-risk populations and underserved communities

Areas of program *limitations* or *gaps* reported include the following:

- Predominance of acute care experience with application of skills in acute care practice settings
- Limitations in accessing primary care practice sites or providing students with sufficient supervision, guidance, and mentoring when in these settings
- Lack of available primary care positions, particularly for newly licensed RNs
- Faculty limitations related to lack of practice experience specific to primary care settings and the unique roles of primary care RNs
- Lack of experience and/or exposure of students in applying core knowledge base to ambulatory and community-based populations seen in primary care settings

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Academic Challenges, Strategies, and Recommendations: Preparing Students and Developing RNs for Practice in Primary Care

Nursing schools reported their RN pre-licensure programs experienced key challenges and barriers involved in teaching and preparing students for practice in ambulatory care settings overall and primary care specifically. Issues commonly reported in the literature were used as the basis for the survey question, and nursing schools also had the option to provide feedback through write-in comments. Ratings used a five-point scale, with 5 indicating issues with the *greatest* challenge or barrier, to a low of 1 for issues presenting *no* challenge or barrier. Challenges reported by nursing programs were sorted by the frequency of ratings of 5 (greatest) and 4 (significant) combined and are listed in Table 13.

Findings indicate that the issues presenting the greatest challenges in preparing nursing students for practice in primary care settings can be grouped into four areas. First, difficulties involved in scheduling clinical education for cohort groups with faculty and the lack of clinical sites were reported to be the greatest barrier. Second, the BRN's educational focus on acute care and the NCLEX licensing exam's similar focus each influence how RN pre-licensure programs are developed and carried out. Third, the lack of primary care RNs with sufficient education and experience presents

Table 13. Challenges and Barriers Teaching and Preparing RN Students for Practice in Ambulatory Care and Primary Care

	LEVEL OF CHALLENGE OR BARRIER*				
	5	4	3	2	1
Difficulties scheduling student cohort groups requiring faculty supervision in one location	44.1%	23.7%	16.9%	15.3%	0%
Limited ambulatory care sites for clinical placement	30.5%	30.5%	22.0%	13.6%	3.4%
Limited primary care sites for clinical education placement	32.2%	23.7%	23.7%	16.9%	3.4%
BRN expectation that the curriculum focus be on acute care content	34.5%	20.7%	22.4%	15.5%	6.9%
Predominant focus of the RN licensing exam (NCLEX) on acute care knowledge, skills, and experience	30.5%	23.7%	28.8%	10.2%	6.8%
BRN expectation that clinical hours be conducted in an acute care setting	32.2%	20.3%	23.7%	16.9%	6.8%
Lack or shortage of RNs with sufficient education or experience in ambulatory care to provide supervision of students or function as a preceptor	27.1%	20.3%	32.2%	13.6%	6.8%
Lack or shortage of RNs with sufficient education or experience in primary care to provide supervision of students or function as a preceptor	23.7%	22.0%	28.8%	15.3%	10.2%
Academic leadership and/or faculty support for clinical hours focused in acute care	13.6%	28.8%	28.8%	23.7%	5.1%
Lack of faculty with sufficient knowledge or experience in ambulatory care	6.9%	24.1%	36.2%	19.0%	13.8%
Academic leadership and/or faculty support for curriculum content and coursework focused in acute care	1.7%	27.1%	35.6%	28.8%	6.8%
Lack of faculty with sufficient knowledge or experience in primary care	8.5%	20.3%	35.6%	22.0%	13.6%

**5* is greatest, *4* is significant, *3* is some, *2* is minimal, and *1* is none.

Note: 59/68 RN pre-licensure programs responded.

limitations for nurses in these settings to effectively mentor and develop nursing students. Fourth, issues within the academic nursing programs themselves involving leadership and faculty support for curriculum and clinical education experiences, including faculty knowledge and experience, pose further challenges. These findings reveal priorities for change that would benefit from academic practice dialogue and identification of shared strategies to broaden nursing student preparation and learning opportunities inclusive of primary care practice.

Strategies and Recommendations for Academic Preparation

Academic nursing leaders, primary care sites, and primary care RNs completing the survey were asked the same open-ended question: "*Based on your knowledge and experience, what recommendations for change would you have for RN pre-licensure programs that would improve the preparation of RNs to practice in primary care?*" Comments were received from 62/112 primary care site leaders, 116/199 primary care RNs, and 53/68 academic nursing schools that provide RN pre-licensure programs. While the feedback encompassed several topical areas, there was significant overlap among respondents within and between the three different stakeholder groups. Comments were focused predominantly in two areas: clinical education and curriculum. Recommendations for change received from survey respondents were reviewed and synthesized, with eight broad topical areas identified, and a brief description of each formed based on the comments received. These areas are listed in order of frequency, along with the number of individual comments received.

- *Clinical Education (92).* Expand clinical education experiences provided through student cohort rotations and dedicated clinical preceptorships to include opportunities for community-based care, including primary care sites specifically.
- *Curriculum (88).* Integrate and extend coursework and didactic content with further focus on health promotion, social determinants, diverse communities, and chronic disease management.
- *Qualifications (14).* RNs should have a baseline of RN experience, preferably at least one year in acute care, prior to transitioning to a primary care role.
- *Transition to Practice (12).* Provide training programs to support the development and success of RNs beginning practice in primary care, and of those RNs with other experience who are transitioning into primary care.
- *Administrative Issues (4).* Address issues related to needed program structure/restructure, including regulatory changes that may be needed to support the preparation of RNs in community-based roles.
- *Education Methods (3).* Use various education methods, including clinical simulation, to extend student learning experiences and development with application of skills and roles specific to community health care settings.
- *Primary Care Sites (2).* Develop and support the preparation and readiness of primary care sites to provide and extend clinical education options for nursing students.
- *Faculty (1).* Broaden faculty composition to strengthen expert practice base of experience in diverse community settings.

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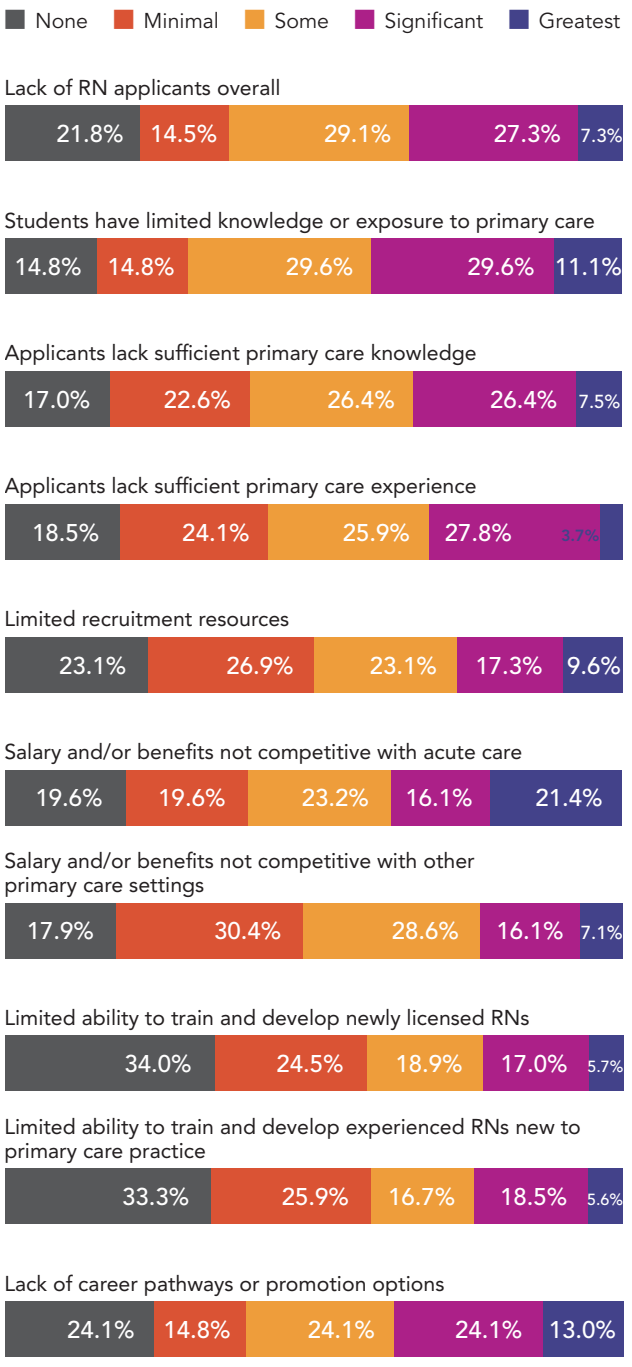
Hiring and Employment of RNs in Primary Care

Challenges

Primary care employers and RNs working in these settings provided information related to the recruitment, hiring, and onboarding processes, including challenges they experience, to inform issues related to the preparation of nursing students and hiring of RNs for practice in primary care. Primary care sites indicated identifying and addressing RN learning needs related to lack of knowledge and/or experience working with community-based resources, health screening and health maintenance activities, and coordinating care involving long-term maintenance of patients with complex chronic conditions. Newly hired nurses need and benefit from guidance and mentoring by an experienced RN to support their professional role development. This is done through coaching, guiding the application of theory to practice, and carrying out supervisory and coordination functions involving delegating activities to other members of the health care team. Some clinics do not have other RNs in the setting to train or guide new nurses, and supervisors may not always be RNs or have a clinical background. While comments submitted by primary care leaders predominantly addressed challenges in meeting primary care RN learning needs, employers also rated issues concerning noncompetitive salaries and the lack of progressive career pathways to be of significant or greatest concern, as shown in Figure 9.

Considering the challenges in hiring RNs with a lack of relevant experience, primary care employers reported the approaches they used to train, guide, and support newly licensed RNs, as well as RNs experienced in other areas that were changing practice areas and beginning to work in primary care. A list of common processes typically used to orient and develop RNs upon hire and those reported to be effective practices in the literature was provided. Primary care site leaders selected as many processes as were applicable, and were also invited to submit other practices or

Figure 9. Challenges and Barriers Related to Recruitment and Hiring of Primary Care RNs



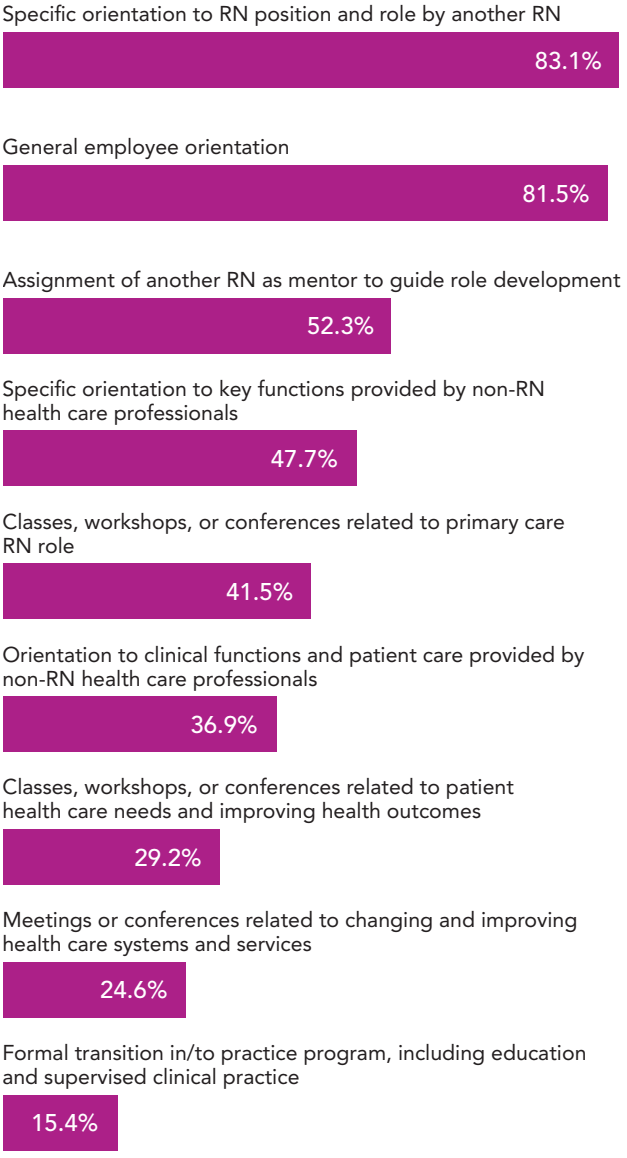
Note: 58/112 primary care site leaders responded.

comments. Figure 10 displays the strategies and processes reported to be used by primary care employers who responded to this question. While 83.1% of primary care sites reported that specific orientation to the position and role is provided by another RN, identification and assignment of an RN mentor to guide role development is less evident, as reported by 52.3% sites, and formal transition to practice programs, including both education and supervised clinical practice, is provided by only 15.4% of primary care sites.

Considering the challenges in recruiting RNs with sufficient knowledge and experience to practice in primary care as reported earlier (see Figure 9) by 33.9% and 31.5% of primary care site leaders, respectively, adopting strategies and identifying resources to support the preparation and development of RNs new to primary care practice are strategically important to strengthening and expanding the primary care nursing workforce.

Primary care employers were asked to report the minimum education and experience RN candidates should have to be considered qualified for hire in their settings. Primary care employers most often indicated an ADN to be the minimum education required, as reported by 47.0% of employers, with a BSN reported by 30.3%, and 1.5% indicating a master's degree (see Figure 11, page 29). A minimum level of education was not required by 25.8% of sites, with another 7.6% stating that a minimum level of education was either not known or not established by the employer. Primary care sites that have either not considered or not established a minimum level of education for specific RN positions, and those where a minimum level of education was not known, have further opportunity to review and assess the specific RN roles and scope of functions needed within their setting and to consider the competencies and learning outcomes associated with various levels of nursing education programs to guide recruitment of and/or support RNs they employ in areas where further development may be needed. Establishing clear RN roles and expectations aligned with core competencies will support and guide the effective utilization of RNs.

Figure 10. Training, Guidance, and Support Provided to RNs by Primary Care Employers Upon Hire



Note: 65/112 primary care site leaders responded.

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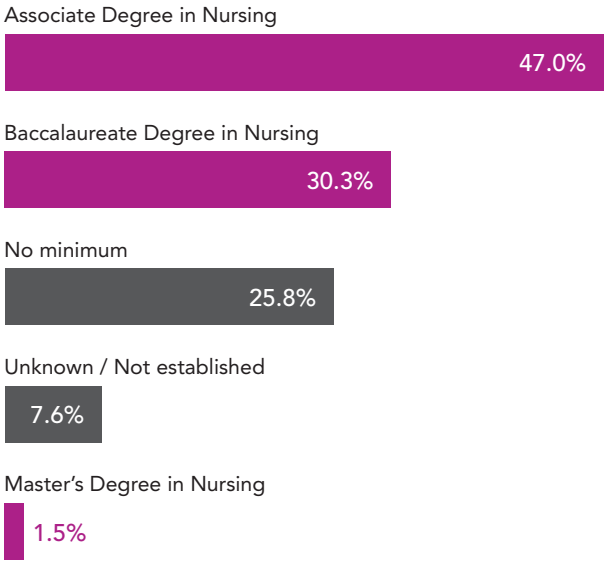
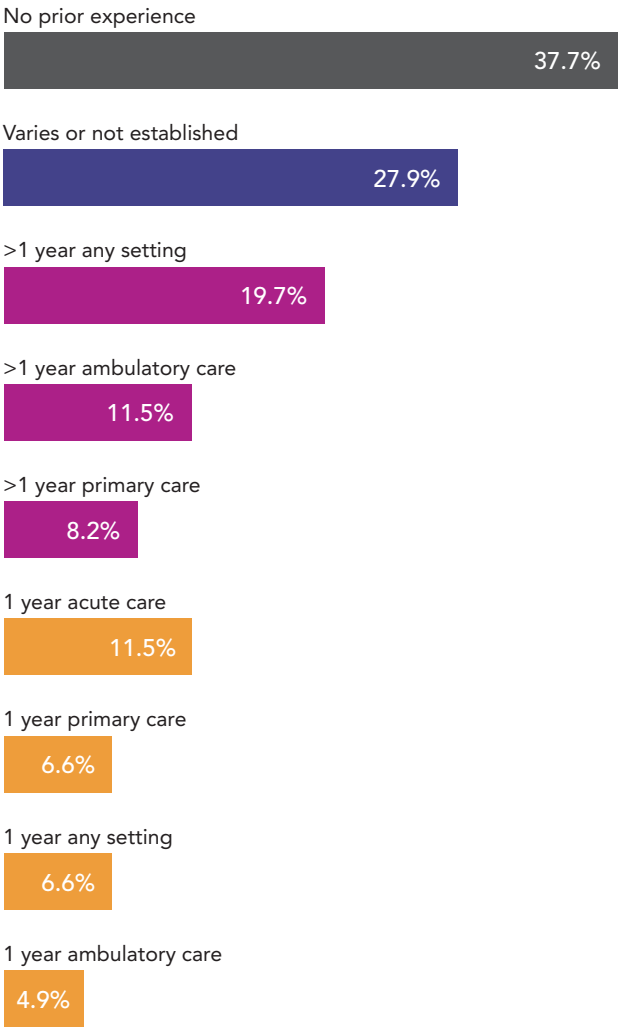
Figure 11. Minimum Nursing Education Required by Employers Hiring Primary Care RNs



Notes: 66/112 primary care site leaders responded. Survey respondents were able to select more than one response category as applicable. Six respondents selected both *no minimum* as well as *unknown or not established* categories.

Primary care employers reported varied requirements for the amount and type of RN experience candidates should have to qualify for an RN position and be considered for hire (see Figure 12). Responses from just over a third of primary care site leaders indicated that they did not require RNs to have any prior experience upon hire, as reported by 37.7%. While almost a third of employers (29.8%) indicated RNs must have a minimum of one year of experience prior to hire the type of experience could be in various settings, acute care experience was specified most often, and39.4% of employers indicated more than one year RN experience to be required. It was noted that primary care experience specifically was not necessarily required by employers, indicating that having a base of RN practice experience was sufficient for RNs desiring a change in career to be considered for hire in primary care.

Figure 12. Minimum Nursing Experience Required by Employers Hiring Primary Care RNs



Notes: 61/112 primary care site leaders responded. Survey respondents were able to select more than one response category as applicable.

Employer requirements for hiring RNs in primary care with one to two years of prior experience in various settings, and some preference for RNs with acute care experience specifically, helps inform options and strategies for developing and expanding the primary care RN workforce with a particular focus on supporting the interest, education, and development of current RNs transitioning to primary care.

Primary care employers were asked how long it took on average to fill open RN positions, as an overall indicator of supply and demand of RN candidates interested in and qualified to work in primary care settings. Data indicate that while most employers (41.6%) report filling vacant RN positions in one to three months, 15.4% of employers indicate taking an average of six months, and another 15.4% of employers report taking longer than six months. Reducing the time to fill vacant positions and support expansion of the primary care RN workforce will involve changes to address challenges and mitigate barriers, while adopting strategies to strengthen the transition of RNs entering or moving into primary care practice, along with processes to support continued professional development of RNs in meeting the emerging health care needs within changing health care systems.

Utilization and Expansion of RN Roles in Primary Care Settings

Challenges and Barriers

Organizations that provide primary care services report various challenges to increasing the number of RNs in their setting or expanding RN functions to the fullest scope of practice allowed by California law. Responses encompass a combination of practice model preferences, limitations related to lack of knowledge or experience, and related issues involving effective and efficient delegation of functions within key areas carried out within health care teams (see Figure 13, page 31).

Overarching these challenges are financial concerns, some of which may be mitigated by addressing specific practice, process, and workflow issues contributing to them. While approximately 15%–31% of respondents indicated having no challenges or minimal barriers with some of these issues related to expansion of RNs in their settings, sites that did rate these concerns to be either significant challenges limiting change or the greatest barrier sufficient to prevent change were combined and listed in order of frequency reported, as follows:

- Current reimbursement limits adding RNs or expanding RN functions in their practice setting (39.6%).
- Current provider-based practice model does not include options for the full utilization of RN roles (34.6%).
- Lack of knowledge or processes to more fully utilize RN roles (30.6%).
- Lack of knowledge or experience regarding the types of billable services that can be provided by RNs to generate revenue (30.0%).
- Functions currently performed by RNs are or can be done by other, less expensive personnel (22.1%).

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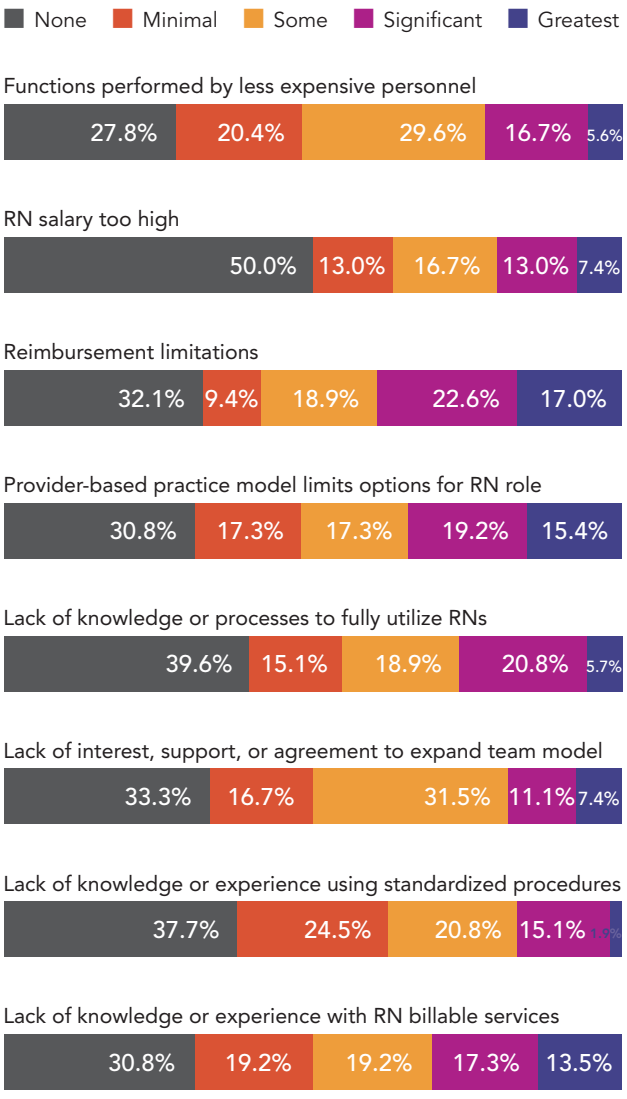
- RN salary felt to be too high (20.4%).
- Lack of interest, support, or agreement to explore or expand team-based interprofessional practice models that would more fully utilize RN roles (18.5%).
- Lack of knowledge, experience, or process developing and using standardized procedures that would authorize delegation of specific clinical functions to more fully utilize RN roles (16.0%).

Figure 13. Challenges and Barriers Related to Full Utilization and Expansion of RN Roles in Primary Care



Note: 56/112 primary care site leaders responded.

Influencing factors include: the type of primary care practice model, RN knowledge or experience needed, and delegation of key functions carried out within health care teams.

Strategies and Recommendations for Development and Expansion of RN Roles in Primary Care

While primary care site leaders, primary care RNs, and RN pre-licensure programs completed separate surveys designed with questions specific to each stakeholder group, the final open-ended question was posed to all three groups: *"Based on your experience, what strategies and recommendations would you suggest to support the professional development, expansion, and/or more effective utilization of RNs in primary care?"* Comments received from 47/112 primary care site leaders, 91/199 RNs practicing in primary care, and 51/68 nursing schools were sorted by topic and grouped into similar categories. Individual comments were then synthesized and summarized, establishing recommendations regarding primary care sites, RN practice in primary care, and RN pre-licensure programs provided by academic institutions. Central themes emerging from this process informed further exploration of these issues within the overall scope of work in this primary care project by engaging dialogue with academic practice leaders, RNs in primary care practice, and other diverse stakeholders through structured focus group sessions conducted after the surveys, in fall 2018.

Recommendations from Survey Participants Regarding Primary Care Practices

Education and development of current primary care RN workforce. Provide opportunities for RN professional development to obtain, maintain, and advance nursing knowledge, progression of competencies, and integration of functions within RN scope of practice. Establish mechanisms for RNs at all levels of practice to be mentored by more experienced RNs within the organization, or through collegial relationships in the community.

Clarification and expansion of RN roles. Understand and clarify the purpose, scope, and functions provided by RNs in various roles, and their interface and collaboration within the health care team. Consider the level of academic preparation and/or professional development needed to effectively carry out various roles requiring specialized preparation within the overall RN scope of practice, including care coordination, health management of complex populations, and leadership.

Utilization of RNs within full scope of practice. Review functions currently being carried out by RNs, determining the extent to which they are underutilized (i.e., conducting activities and tasks that could be delegated and performed by other personnel). Identify and support full utilization of RN independent functions allowed by California law and consistent with levels of education, experience, and demonstrated competencies. Identify areas of professional practice that could be delegated to RNs with oversight by providers and carried out through formal standardized procedures.

Primary care leaders. Assess and support the leadership capabilities of RNs within the health care team, and provide opportunities for further development and integration. Establish relationships with nursing programs providing access for student clinical learning experiences in primary care, strengthening interest, readiness, and pathways to future employment. Collaborate with primary care nursing experts, including faculty experts, to advise, develop, and advance primary care nursing practice.

Primary care providers. Explore, support, and develop collaborative options for team-based models that utilize health professionals, including RNs, in diverse roles to maximize access to care while effectively meeting comprehensive health care needs. Identify and implement formalized standardized procedures to more fully utilize RN practice capabilities, carrying out RN-dependent functions with formal provider oversight.

Primary care sites. Assess evolving scope of services needed, evaluate the extent of services currently provided, and identify strengths and barriers to change. Consider options for the most effective utilization of providers, health care professionals, and support personnel to support efficiency and workflow, while effectively achieving health outcomes for the unique population served. Explore and adopt emerging team-based practice models, or strengthen and extend existing capabilities of current interprofessional teams.

Financial strategies. Determine key functions RNs can provide that are reimbursable, revenue generating, or value-added to provide sustainable resources, demonstrate cost benefits, and strengthen clinical services provided. Explore and adopt or strengthen and expand systems and processes needed to identify and obtain revenue generated from full utilization of RN roles.

Recruitment and hiring / salary and benefits. Evaluate and provide equitable salary and benefit packages, comparable to similar types of organizations and settings. Consider, define, and provide nonfinancial benefits to augment paid employment options. Develop and support relationships with nursing programs as pathways to employment for newly licensed RNs.

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Recommendations from Survey Participants Regarding Academic Nursing Programs

Academic nursing programs. Establish, strengthen, or extend course content and student clinical education experiences in RN pre-licensure programs with community-based populations, including clinical rotations, preceptorships, or observations in primary care settings specifically. Establish relationships with ambulatory care sites, primary care clinic leaders, and RNs through faculty experts to advise, develop, and advance primary care nursing practice. Explore options to share educational resources or collaborate in developing primary care preceptors, or providing professional education to primary care RNs in current practice.

Education and development of newly licensed RNs and RNs new to primary care. Establish and provide transition programs for newly licensed RNs entering practice in primary care, and for other RNs hired into primary care from different practice settings. Develop, support, and use a range of teaching/learning methods, assigning an experienced RN as mentor and coach to guide the application of new knowledge to practice. Consider options for primary care employers and academic nursing programs to provide collaborative solutions for nursing development and education in this area.

Conclusions

This statewide survey conducted between July and October 2018 informed a series of focus group sessions held throughout the state in November and December 2018. Findings from both the survey and the focus groups informed preparation of the final project report, addressing key strategies and recommendations for improving the capacity for team-based care in primary care through effective development, utilization, and expansion of the RN workforce.

Appendix A. Survey Invitation Letters

TO: HEALTHCARE LEADERS IN ORGANIZATIONS PROVIDING PRIMARY CARE

Re: Invitation to Participate in Statewide Primary Care Survey

A project is underway to determine how Registered Nurses (all RN roles, not Nurse Practitioners, NPs) are currently being utilized in primary care settings across California. As a first phase of this initiative, we are requesting your assistance disseminating a survey to primary care sites within your organization, health system, or network.

The project aims to identify key functions related to RN practice and professional role development in primary care settings, and make recommendations on how RN pre-licensure education, transition-to-practice, certification, and continuing education programs can better prepare RNs for roles in primary care. HealthImpact, California's Nursing Workforce Center, is leading this 18-month project, with support from The California Health Care Foundation (CHCF).

About the Survey

The survey is comprised of two independent questionnaires: one for primary care site leaders and a different questionnaire for RNs who work in primary care settings. Each questionnaire will take approximately 25–30 minutes to complete. The names of organizations, leader(s) and RNs completing the survey will not be identified, and information collected will only be reported in aggregate. A copy of the survey findings will be shared with individuals who complete it and provide contact information. *Please forward this survey invitation to the appropriate site leaders within your organization.*

Survey Respondents

The **primary care site leader** should complete the *Primary Care Organization Survey*. The site leader may be an administrator, physician, nursing leader, or health care professional. This survey will take approximately 25 minutes to complete. (Click on this link to access the online questionnaire.)

Please forward this survey invitation to RNs (all roles, not Nurse Practitioners) working in your primary care site to complete the separate RN survey. **RNs in each primary care setting** should complete the *Primary Care RN Survey*. All RNs working in various roles who are not Nurse Practitioners are encouraged to participate. This survey will take approximately 30 minutes to complete. (Click on this link to access the online questionnaire.)

The project supports the National Quality Strategy aims of better care, healthy communities, and affordable care. Experienced primary care RNs can strengthen primary care teams, extend system capacity, and support value-driven health outcomes. Thank you for being an important part of this process.

Regards,

Judith G. Berg, MS, RN, FACHE
Chief Executive Officer
HealthImpact

Kathryn E. Phillips, MPH
Senior Program Officer, Improving Access
California Health Care Foundation

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TO: DEANS AND DIRECTORS OF CALIFORNIA RN PRE-LICENSURE PROGRAMS

Re: Invitation to Participate in Statewide Survey Regarding Preparing RNs for Practice in Primary Care

A statewide project is underway to determine how Registered Nurses are currently being utilized in primary care settings across California. As a first phase of this initiative, we are requesting RN pre-licensure programs participate in a survey regarding preparing RNs (not NPs) for practice in primary care.

The project aims to identify key functions related to RN practice and professional role development in primary care settings, and make recommendations on how RN pre-licensure education, transition-to-practice, certification, and continuing education programs can better prepare RNs for roles in primary care. HealthImpact, California's Nursing Workforce Center, is leading this 18-month project, with support from The California Health Care Foundation (CHCF).

About the Survey

The survey questionnaire should be completed by the Dean or Director of Nursing, or delegated to a nursing faculty member experienced with your RN pre-licensure program and, if possible, also familiar with RN roles in primary care settings. The names of your academic program, Dean, Director or faculty completing the survey will not be identified, and information collected will only be reported in aggregate. A copy of the survey findings will be shared with individuals who complete it and provide contact information. *Please complete the survey or forward this survey invitation to* **one faculty member** *to submit on behalf of your nursing program. Only one survey should be completed per school.*

Survey Respondents

The *RN Pre-Licensure Survey* should be completed online and is estimated to take approximately 20 minutes.
(Click on this link to access the online questionnaire.)

The project supports the National Quality Strategy aims of better care, healthy communities, and affordable care. Experienced primary care RNs can strengthen primary care teams, extend system capacity, and support value-driven health outcomes. Thank you for being an important part of this process.

Regards,

Judith G. Berg, MS, RN, FACHE
Chief Executive Officer
HealthImpact

Kathryn E. Phillips, MPH
Senior Program Officer, Improving Access
California Health Care Foundation

Appendix B. Lists of Tables and Figures

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Appendix C. Advisory Team

This report was prepared by HealthImpact with the support of the California Health Care Foundation and consultative assistance of an advisory team comprising academic and practice leaders across California. We thank them for their commitment to supporting the development of the nursing workforce in primary care, and for their valued contribution to this project.

Laurie Bauer, MPH, PhD(c), RN
UC San Francisco School of Nursing

Judith G. Berg, MS, RN, FACHE
Former President and Chief Executive Officer
HealthImpact

Garrett Chan, PhD, RN, APRN, FAAN
President and Chief Executive Officer
HealthImpact

Jason Cunningham, DO
Chief Medical Officer
West County Health Centers

Mary Dickow, MPA, FAAN
Program Director
HealthImpact

Giovanna Giuliani, MBA, MPH
Executive Director
California Health Care Safety Net Institute

Phil Greiner, DNSc, RN
Past President, CACN
Professor and Director, School of Nursing
San Diego State University

Sandra Melton, PhD, RN, ACNS-BC, CNE
President, COADN, South Region
Director, School of Nursing and Allied Health
Ventura College

Aileen Oh, MA, RN
Director, Ambulatory Clinical Services, SCPMP
Kaiser Permanente

Carolyn Orlowski, MSN, RN
Program Director
HealthImpact

Kathryn Phillips, MPH
Senior Program Officer, Improving Access
California Health Care Foundation

Stephanie Robinson, PhD, RN
President, COADN, North Region
Director of Nursing, Fresno City College

Nenick Vu
Associate Director of Managed Care
California Primary Care Association

Marla Weiss, DNP, FNP, BC
Deputy Associate Director for Patient Care
Services and Chief Nurse Executive
Tibor Rubin VA Medical Center

Heather Young, PhD, RN, FAAN
Dignity Health Dean's Chair for Nursing Leadership
Associate Vice Chancellor for Nursing
Dean and Professor
Betty Irene Moore School of Nursing
UC Davis

Primary Care Focus Groups: Synthesis of Findings

Introduction

A series of focus groups was conducted in four different California geographical regions. Participants were leaders in organizations providing primary care, registered nurses (RNs) working in primary care settings, and RN pre-licensure nursing program faculty. A synthesis of findings from discussions held in October and November 2018 is highlighted in this report. The focus groups were designed to build on the data obtained through a survey conducted between July and October 2018 to obtain information about the current primary care RN workforce and its utilization in various types of organizations, and to identify strategies and recommendations for preparing the future workforce in this setting.

Purpose and Objectives

The focus groups were part of an 18-month, grant-funded project conducted by HealthImpact with the support of the California Health Care Foundation (CHCF). The aim of the overall project was to identify the knowledge, skills, and attributes needed by RNs working in primary care settings, determine gaps in existing professional role development as perceived by RNs and their employers, and make recommendations regarding how pre-licensure education, transition-to-practice programs, certification programs, and continuing education can better prepare RNs for enhanced roles in primary care settings.

Key findings from the focus groups and survey will inform the overall project in its efforts to understand nursing workforce needs and challenges related to the preparation and utilization of RNs in primary care practice. Providing a base of evidence from which to form strategies and recommendations supporting future development of the nursing workforce will be important to improving and expanding primary care capacity in California.

Focus Group Structure

Each focus group discussion lasted 2.5–3 hours and was conducted in person in local conference rooms, with lunch provided. Participants were informed that the sessions would be recorded, though individuals participating in the focus group session would not be identified, nor would the names of the organizations or employers they represent be disclosed outside of the session. The purpose of the recording was to allow HealthImpact staff to review the discussion before preparing the synthesis of input gained from the focus groups. All participants signed a consent form indicating their agreement to being recorded and the confidentiality they should expect in return. Focus group participants included representation from academia, primary care and community clinics, and public health departments. The roles of the participants ranged from deans, directors, faculty and clinical instructors from nursing programs, primary care providers (nurse practitioners and MDs), RNs (office managers, advice nurses, program managers, and care coordinators), nurse managers, and public health nurses and directors.

Each focus group was structured with the following framework:

- An agenda for the meeting was distributed.
- The HealthImpact team and participants introduced themselves.
- A moderated discussion took place in which participants were asked to share stories of making a significant impact in the primary care setting, and to share a story of when the experience did not go as well.
- Participants shared how prepared they felt for their role in primary care, and where they identified gaps in their education or training.
- Participants were asked to mentally design a system in which the preparation and utilization of RNs in the primary care setting would be

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most effective, and to identify how hopeful they were that their model would become a reality.

- In closing, HealthImpact staff gave a high-level summary of the discussion and asked participants if there was anything additional they wished to share.
- Following each focus group, the recorded discussion was transcribed and used to prepare the synthesis of findings for this project.

Findings

Findings can generally be categorized into the following areas, though there was considerable blending of these concepts in the actual discussion: lack of role clarity, important skills needed for primary care, lack of organizational structure, and education.

Lack of Role Clarity

The lack of role clarity for RNs working in primary care settings came up repeatedly in discussion. One participant put it this way: "Are nurses too flexible? … Our discipline sometimes is the most nebulous when you look at this is medicine, this is pharmacy, this is dentistry, and then nursing is caring for people. What does that mean?" The wide variability in the roles RNs hold in primary care settings was identified as the result of multiple factors, including reimbursement mechanisms, leadership preferences, trust levels between members of the team, and the skill and confidence level of the RN. One physician said, "I have no knowledge whatsoever about what nursing training is like, and a group of constituents that need to be educated to what nurses can do in this role are our physician colleagues." Another participant commented, "Even in a prestigious organization … the role of the RN has been very unclear. Because of that, it's being interpreted by some in ways that I think is damaging nursing, and it's very discouraging to me to see this happening." One participant summed it up: "We had a job description with nothing to do with what we really did, and that was a big problem. Confusion … and because we didn't know what we were supposed to do, clearly the physicians and medical assistants didn't know what we did or what we should be doing. As we were gaining more and more responsibility in the clinics, the medical assistants were not always happy about that, and that's been one of the challenges."

Another aspect of role clarity that came up in the conversations was related to trust, and the impact of its presence or absence. A provider colleague described it this way: "We actually help give [RNs] protocols to work off and expect them to just kind of make things up, and then we don't like the way they do it. But that is kind of a scary thing in terms of being a provider and the idea of implementing these and moving forward with that is just that you have to trust somebody else like you trust yourself, and that's not always an easy thing to do." The same provider also noted, "So I think that there's a trust issue probably on the other side of that as well, from nursing staff that maybe providers are not very trustworthy." The importance of trust among team members and its subsequent impact on patients was summed up through the following statement: "So if one of us messes up, it impairs the patient's trust in the whole system." Some of the challenges to building trust among team members were identified as high levels of staff turnover, team members working in silos, lack of knowledge about various professional scopes of practice, and lack of confidence on the part of RNs in the primary care setting.

Several participants spoke about the importance of working to the top of their RN licensure and the barriers to making that a reality for RNs. As noted above, some of the scope-of-practice barriers arose from the lack of clarity the RNs themselves, as well as other members of the team, experienced in the role. One participant stated, "We were able to differentiate the practice of a registered nurse, as opposed to an LVN, as opposed to a medical assistant, because they were blurring what the roles were, and we were really able to define that for the position, so that they understand."

However, in some clinics, RNs have been in roles distant from direct patient care and are somewhat nervous about having high levels of autonomy in practice. One clinic manager said, "Nurses in my health center are a little bit timid to expand their scope because they tend to be very limited and not really doing a lot of

direct patient care." The level of confidence and leadership skills needed in order to practice autonomously in settings where the RN may be the only nurse on the team was noted as an important attribute in primary care settings, and may also be getting in the way. RNs are requesting additional training in basic nursing skills and also expressing reluctance to share their knowledge with others. As one manager said, "I'm pushing out standing orders and things, and they're saying, 'Train us.' How do I reteach you pediatrics that you haven't done in 10 years? I have to bring outside people in to do the lectures because the nurses are too scared to share their expertise with each other."

Important Skills

One primary care skill that frequently came up in discussion was care coordination. Many of the examples shared the unique capacity of RNs to successfully coordinate care for vulnerable individuals because they work in the nexus of medical and social drivers of health. One participant stated, "In many of the stories being shared, it's the convergence of medical problems with social problems, and nurses stepped in to deal with all of that, knowing you can't separate them." Many participants spoke to the importance of communication in coordinating care, and the importance of one person being the main contact for care:

> *It's just been amazing to watch how this one person just pulled it all together, and having the security of someone you know you can call with any question. Even if she wasn't going to solve the problem, she knows who would, so we could have that ease of entry to the system.*

There were numerous references to the ability to recognize needs that may be indirectly related to the medical condition being treated, but that require attention in order to prevent recovery or a recurrence of the problem. As participants described it, this ability requires the establishment of trusting relationships and the flexibility to move seamlessly in multiple environments, such as mental health, education, housing, and food availability.

One story of a young man who had been injured in a motorcycle accident demonstrates the high level of care coordination RNs can bring to primary care:

> *So actually it really wasn't very much about pain management, although that's a really important thing because this could be a turning point for him; this could be the end of his sort of normal productive life and the beginning of a life of substance abuse, and so he's actually, with the kind of support that he's gotten and a lot of motivation on his own part, off of pain meds. I was the first one that saw him after he and his dad came out of the hospital. They didn't really have primary care.*
>
> *He knows he's got a brachial plexus injury and his arm isn't working. He was supposed to focus on doing something with that, but he can't hear well. That's because he had a baseline fracture all the way across the base of his skull that impacted both ear canals, and somebody was supposed to see him about that. But he wasn't sure who, and then there was a neurologist, and the neurologist called about his neck, which turns out to have been a vertebral artery dissection. But the piece he got out of it was that he had this rib fracture from the scan, and he wasn't quite sure what to do with that. Now there's like seven specialists that somebody told him he was supposed to follow up with, and maybe they were going to call or maybe he was supposed to call them, and he wasn't sure.*
>
> *And his dad was there with him and had brought him into the office, and you could just see them almost frantically distraught over this: "I have no idea what to do to help my child, and I know he needs all these things and it's scary, but it's all scary when you don't know what to do." I said, "That's a lot to deal with. The good news is you actually only have to call one person. Every time you have a question about those things, just call and he will help you figure it out, because that's complicated. Even I don't know the answers to those questions, and this is what I do all day long, so all you have to do is call that one person, and he'll help you figure out who to talk to or what to do."*

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Other stories regarding the unique skills of the RN in primary care settings were related to care for individuals with multiple, complex, or chronic health problems. The difference between deterioration and last-resort interventions through costly settings such as emergency departments and successful management of those conditions in the community was a nurse who was able to establish a relationship with the client and then connect that person to community resources in a way they could be accepted.

This narrative describes how an RN's ability to develop a meaningful relationship with a patient with complex and chronic care needs resulted in improved outcomes:

> *So this was a new relationship with this patient. There were a lot of trust issues, a lot of health problems and poorly managed diabetes, and she had this diabetic foot ulcer that she was getting taken care of for two years at the wound care center. Wasn't really going one way or the other; it was just staying the same. One day I was accompanying her to a visit because that's what we do with some of our patients—we go to doctor's visits with them so that we can help them understand what's going on and just be the bridge between them and their provider—and they took her dressing off, her toe was basically necrotic, and they were ready to take her into surgery that week; and a couple days went by—the dust settled a little bit—and they said, "Let's do some daily wound care." We couldn't get home health to do that because the woman is a highly functioning person. She works every day even though she's got a walker, but couldn't get home health to go in and take care of her. So I said, "Let's just do it."*
>
> *We started going in, our team, and doing the daily wound care on her, and in a way, this near loss of her toe created this relationship with me and with other people on our team that built a wider support network for her, and she's doing phenomenal. She's still got ups and downs, but her toe wound is almost closed. She feels like she has the support of her care team. We've been able to communicate with her therapist, which these things are like unheard of. She's had her Pap [smear] done and her colorectal cancer screening done. She's one of those people that people have given up on [as] a lost cause. We've gotten to know her and see this beautiful person behind the shell that was created from all this trauma.*
>
> *This is a person who previously just knew her counselor, and then through developing layers of trust, we've been able to expand that team. She lets us into her life with her.*

Another example of helping a patient with complex needs:

> *I have this elderly couple. They're in their 80s. He has a lot of stuff going on. He has some kidney failure, he's had back surgery that went wrong, he's had multiple back surgeries, and he has horrible veins, and the lab we sent him to was really bad at drawing his blood. I found a resource where he could do it from home with a finger stick. The wife was so grateful because just for him to get out and about was a lot, but then to be there and go through all kinds of what she said was tortuous—it was a huge burden to lift from them. And they could still be on top of his care.*

A third example describes how an ongoing relationship with an RN, and the RN's discernment, affected the medical care of a chronically homeless woman in her 60s:

> *I think that I have a unique role in that I work with folks who often have nobody else in their lives. I'm a nurse, often being my client's [support] person when they're interacting with different health care systems.*
>
> *Someone wheeled her over to my office on the little walkers that have the feet on [them]. She just didn't feel good. She was worried that maybe she had a stroke the night before. So, kind of talking to her about her symptoms. I didn't really think she had a stroke, but I sat her down, got her some coffee, some food, some water, and I took her vital signs.*

I told her, "I'm really concerned about you, and I think that you should go to the emergency room." I called our local paramedics, who have a low-key relationship with our homeless community and there's some attitude. The paramedics initially resisted transporting her to the emergency room, but the I insisted: "She needs to go. She can't walk."

They get her into the stretcher, and as they're helping her on the stretcher, one of the paramedics says, like, "Gosh, your leg is really swollen here." They take her to the ER, and she's septic. She ends up getting intubated and has kidney failure and liver failure, this huge thing. They said that her femur was completely broke in half. There's a huge infection.

After this client's hospitalization, the nurse continued to track her through one of the transport van drivers, and found that she had been transferred to multiple skilled nursing facilities and hospitals. After making numerous phone calls, the RN realized the client had missed a critical follow-up appointment at the nearest tertiary care hospital. The nurse called the same driver and asked him to transport her to the hospital three hours away.

If I had not called and checked up on her, what would have happened to this poor lady? So, would she have died earlier? It's just really very pervasive and reflects the different silos that we work in, even in outpatient care, and such poor communication.

This narrative demonstrates the power of an RN's personal relationship with a patient, which allowed her to know when something wasn't right. She tracked the patient through multiple health systems, and was able to find resources and advocate for her both during and after her hospitalization. The RN stated "[when] people are marginalized, especially with mental illness, things get attributed. [Issues] always get attributed to their main problem as opposed to really looking at them holistically to see if there's actually something else going on." We heard multiple stories of nurses' critical interventions using skills of observation, active listening, and discernment to ensure appropriate care was provided.

One aspect that came up in each of the four focus groups was the sense of trust RNs built with the patients they saw in the clinics. The value of that ability to serve as an advocate and have a direct impact on the health outcome was palpable during the discussions.

I walked in to teach [a patient] how to use the glucometer and the pen, and she was very angry and a little bit short and a little mean. She was a woman in her mid-50s, married with one child. Had a lot of chronic comorbidities that go along with diabetes. And she had already been known as kind of a difficult patient. I went in, and she was difficult with me, and I just put the stuff aside and said, "You're probably really mad right now at what the doctor just told you." And she just dropped all her defenses and all that she said was, "Yeah." And we just sat there for 10 minutes just talking about how she's feeling. And she wasn't insulting or mad anymore. And to this day she will call me when she's having a hard time. But in working with her, she would eventually try it and be okay with it and adapt to it.

Like I said, she's doing really well now. But that's definitely when I go, "Yeah, I totally made a difference. She sees me as on her side. I feel like she's a better patient now. She's healthier, she's doing better."

The complexity of patient care situations, the ability to tap into community resources, and the autonomy required to function in a primary care setting all add to the importance of having well-prepared nurses who are able to function successfully in this role.

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Lack of Organizational Structure

The organizational structure of the primary care setting was also frequently cited as having a significant impact on how nurses functioned in their role and their ability to add value to the team's functioning and improve patient outcomes. As noted in the above section, both role clarity and policies/procedures are needed at the employer level in order for RNs to function at the top of their scope of practice. While many participants expressed a belief that the RN role added value to the clients and communities served, they also expressed frustration that the infrastructure didn't always support full functioning in the role. One participant shared a story to illustrate the impact of the lack of protocols and role clarity:

> *The nurse called with the patient's lab results and advised him about changing his medication dose. He changed his medication dose as advised, and his white blood cell count dropped to critically low levels. When he became ill and they looped back to the medical provider, the medical provider said he had gotten bad advice that what he had been advised is not what the provider would have done. So this was a nurse who no doubt was 100% well intended in good faith, doing what she felt was the right thing, without an adequate infrastructure. No written protocol, just if you feel comfortable with the advice you're giving, go ahead and give it.*

Participants also described the system barriers that primary care nurses must navigate to get their clients the care they need. These barriers range from transportation issues to insurance authorizations, and addressing them requires persistence, creativity, clinical reasoning, and communication skills because of an absence of systems and consistency. One participant described the transportation dilemma in a rural area:

> *Clients don't want to go to the emergency department because they're stuck there. I had a guy yesterday who received a bus pass from the social worker at the end of his ED visit, but there's no bus. There's one bus that comes at 5 PM. If they miss that bus or they are discharged at 6 AM, they have to wait all day. So, these patients who go to the ED or get discharged from the hospital either hitchhike or walk the 16 miles back.*

Another participant described a situation involving a test that was needed but denied by the insurance carrier, and the steps the nurse needed to take to finally obtain authorization for the test, which turned out to be critically important for the client:

> *RNs in ambulatory care support patients, and they also support providers. It's actually a really critical support because you're trying to do so much in a 20-minute appointment. So, to have an RN who's a partner with you is really important. I have a story about a young woman with a genetic disorder who came in for a routine exam, and we noticed her abdomen was just a bit distended. An ultrasound was ordered, which came back abnormal with some fluid in the abdomen. A CT scan was ordered and Medi-Cal denied it. The RN called the approving physician and registered a complaint. She took the clinical information and persisted, and we finally did get the CT scan done, and the patient had ovarian cancer. Now this is a patient with a very severe disability. She's blind. It took someone with good clinical sense and communication skills to make the argument to get the test done.*

Other participants described structural barriers that led to ineffective use of their time. One repeated theme was the amount of time nurses spent getting information from various providers in order to coordinate and expedite care:

> *It's just incredible how many hoops there are to jump through to get access to records. How do you get what the orthopedist said at this hospital, and get the ED records from that hospital, and just trying to do care coordination. So much time is spent on records requesting and very antiquated paper fax systems. Trying to get access to the electronic health record is a huge problem. If the hospital wants us to take our patients out of the hospital, they have to let us know what they're in the hospital for. I think everyone's so scared of HIPAA [the Health Insurance Portability and Accountability Act,*

which provides data privacy and security provisions for safeguarding medical information] that people really get locked down, and you can't get access to things. It's so time-consuming.

Another participant described an RN role that had been developed to round routinely on all their patients who were hospitalized, in order to stay on top of care issues and ensure robust discharge planning and care transition management. They had found that role to be extremely valuable in successfully transitioning clients back into the community.

As discussion around the impact of infrastructure issues on RN functioning progressed, it became clear there is an opportunity to improve the contributions of nurses in primary care settings through implementing some changes in how the role is supported at the point of care delivery. As one RN noted, "It's clear that it's bigger than just preparing nurses, that there are other pieces that need to be in place. The infrastructure piece is big; the support mechanisms are really important."

Educational Preparation

The fourth area of discussion centered on the educational preparation of nurses to work in primary care settings. Not surprisingly, a theme that emerged was the lack of exposure to primary care settings in pre-licensure clinical education. There was general acknowledgement that community settings were not seen as attractive learning environments in comparison with acute care hospital settings; however, there was an overwhelming consensus that increased exposure to primary care settings could change those perceptions. One clinic manager put it this way:

Whereas hospital nurses usually tend to be a little bit more excited to go for the gusto because I think that's the sort of thing you see on television or the typical idea of a nurse. I'm sure you get asked, when you say you're a nurse, "What hospital do you work at?" Because that's where most nursing has been practiced in the past 30 years. So the idea we sort of came up with was, How can nursing education help build up the idea a little bit more that community health is a place you can work and primary care is an option for nurses?

A nursing faculty participant addressed another issue in exposing pre-licensure nursing students to primary care settings, having to do with the inconsistent RN role functioning in these care environments:

A clinic nurse is not a clinic nurse. This clinic and that clinic all use their nurses in different ways. And so, to prepare a nurse for the role, you've got to know what the role is, and it's very different from setting to setting. At some level I think we're discussing what the nurse's role should be, but that's not what it is in many clinics. So it's pretty difficult to figure out. If I'm the educator in a nursing program, how do I prepare the nurse when I don't even know what nurses do beyond basic skills that every registered nurse should have?

Faculty also pointed out that the licensing examination (NCLEX) is heavily focused on acute care, and the California Board of Registered Nursing program regulations have an acute care bias that tends to influence student clinical experience opportunities.

Still another challenge is the perception students themselves hold about primary care settings. One faculty member put it this way:

[The student] didn't show up because she didn't think that it was going to be a worthwhile experience. It wasn't the excitement of a hospital. But it was their attitude, which is the challenge—to get them to see the use of their critical thinking skills and functioning more independently than in a hospital—that was a real shocker.

And while student perceptions can be an issue, faculty perceptions and experience can also influence clinical experiences for students. When faculty experience is largely in acute care settings, they can be reluctant to place students in a setting where they do not feel comfortable or competent. One faculty participant put it this way: "So it's pretty difficult to figure out. If I'm the educator in a nursing program, how do I

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prepare the nurse [for primary care] when I don't even know what nurses do beyond basic skills that every registered nurse should have?" A further stumbling point is the traditional placement of a cohort of 10–11 students in one clinical setting, allowing the instructor to supervise multiple students in one geographical location, which isn't possible in a smaller clinic setting. Another aspect of education mentioned was related to post-licensure onboarding of newly licensed and/or inexperienced nurses in the primary care setting. Residency programs are infrequently available, and most training occurs on the job.

A fair amount of discussion took place regarding how loaded the nursing school curriculum is already, making the thought of adding courses or competencies overwhelming. One focus group came up with an idea:

> *Nurses get educated to, for instance, the chronic care model, motivational interviewing, and all that stuff. But it happens mostly at graduate level.*
>
> *And, I don't mean to disregard associate degree education. But, you know, these programs are so impacted. And everybody adds another thing on, but nobody picks a single thing off.*
>
> *What about using like a shopping cart approach for that and having them … make a certification module? And so it would be a way to go and pull the information instead of trying to massively overwhelm training programs with all of these new topics, which is either going to extend the program or cut something that you are already doing or make everything so rushed it's not beneficial. That you could sort of purchase that from a shopping cart at the end of the session, if you will, or add them on, post-degree, now that I'm working in an office setting where I need to know more about this piece, about that piece. And then you could have a package curriculum around the diagnosis of hypertension and how that might look in a primary care setting.*

Ongoing education was also perceived as important to the effective functioning of RNs in primary care. One participant stated:

> *There's a lot that goes on in the background to have a nurse function to the top of their license with training and then ongoing training, and then having the support behind to mentor and model and do all those things to get that nurse feeling confident to have higher-level interactions with patients.*

Suggestions for Improvement

Throughout the sessions, participants offered suggestions about various ways to improve the preparation of nurses for working in primary care settings. Ideas ranged from those that would increase the confidence level of individual nurses to some that would improve the functioning of nurses in a particular clinic or setting. A list of suggestions for improvement arising from the participants during the discussions follows.

- Chronic disease management, care coordination, transitional care management, motivational interviewing, and the importance of social determinants of health on patients' health should be major educational components of both pre-licensure nursing education programs and ongoing clinical training.
- Use simulation strategies to learn basic skills, so that when the RN is in the clinical environment, she or he is able to more fully focus on the unique aspects of the encounter. Simulation could also be used as a strategy to strengthen the effectiveness of teams by supporting purposeful learning of each team member's role, responsibilities, competencies, and contribution to effective outcomes.
- Purposely develop training models that are interdisciplinary for all phases of education, from pre-licensure to onboarding of new employees to on-the-job education. This may require the development of models that can be replicated at local levels.

- Templates for protocols/standardized procedures need to be developed that would support RNs working at the top of their license. These protocols could be available through a centralized source, and each clinic would revise them as necessary to meet their unique circumstances. The template concept should also be extended to other tools, strategies, and structures, such as job descriptions, reference materials, orientation plans, and residency programs.
- Establish mentoring programs for RNs new to leadership roles in primary care. This concept may require different kinds of partnerships between primary care clinics/sites, as well as the establishment of new levels of trust and relationship.
- Residency programs should be available for nurses beginning employment in a primary care setting. Part of the residency could be integrated into a preceptorship during the senior year of the nursing program.
- While it is important for effective role functioning to have clarity around role definition and structures supporting role implementation, training should have the flexibility to incorporate local clinic needs and priorities. Job descriptions and reporting relationships in clinic settings may be revised as teams develop, roles evolve, and clinic needs change.
- Because RNs in primary care function both autonomously and in teams, current protocols/standardized procedures, ongoing training, and mutual team member trust/respect are all important components of effective RN functioning.
- Pre-licensure nursing education could/should expand clinical practice opportunities into ambulatory care settings, including primary care. This may require altered faculty roles and new models of student supervision to be developed. In addition, current staff will need to be prepared to function in the preceptor role with students.
- Pre-licensure nursing education programs need to incorporate scope of RN practice into the curricula. Many RNs enter practice without an understanding of their practice scope, which hampers their functioning in primary care.

Conclusions

The focus group participants added greatly to the process of understanding how to best prepare RNs to work in primary care settings. While education and training play an important role, we also learned that role clarity and organizational support structures must be in place as critical foundation elements for effective preparation of RNs working in primary care settings. The moderated discussions highlighted the value that nurses brought to each situation and patient story. Participants agreed that nursing is essential to providing optimal outcomes in primary care settings. We are grateful to the focus group participants for generously sharing their experiences, ideas, and time.

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