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Agenda Item 9:

Primary Care Workforce Supply and Demand Modeling and Strategy

Presenters:
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Jaclyn Moriel, Workforce Research Data Center Lead, Health Workforce Development, HCAI

Agenda

- Strategic intent and vision for the Primary Care Model
- Definition of Primary Care and key assumptions
- Proposed care team composition
- Overview of supply and demand methodology and proposed outputs
- Project timeline

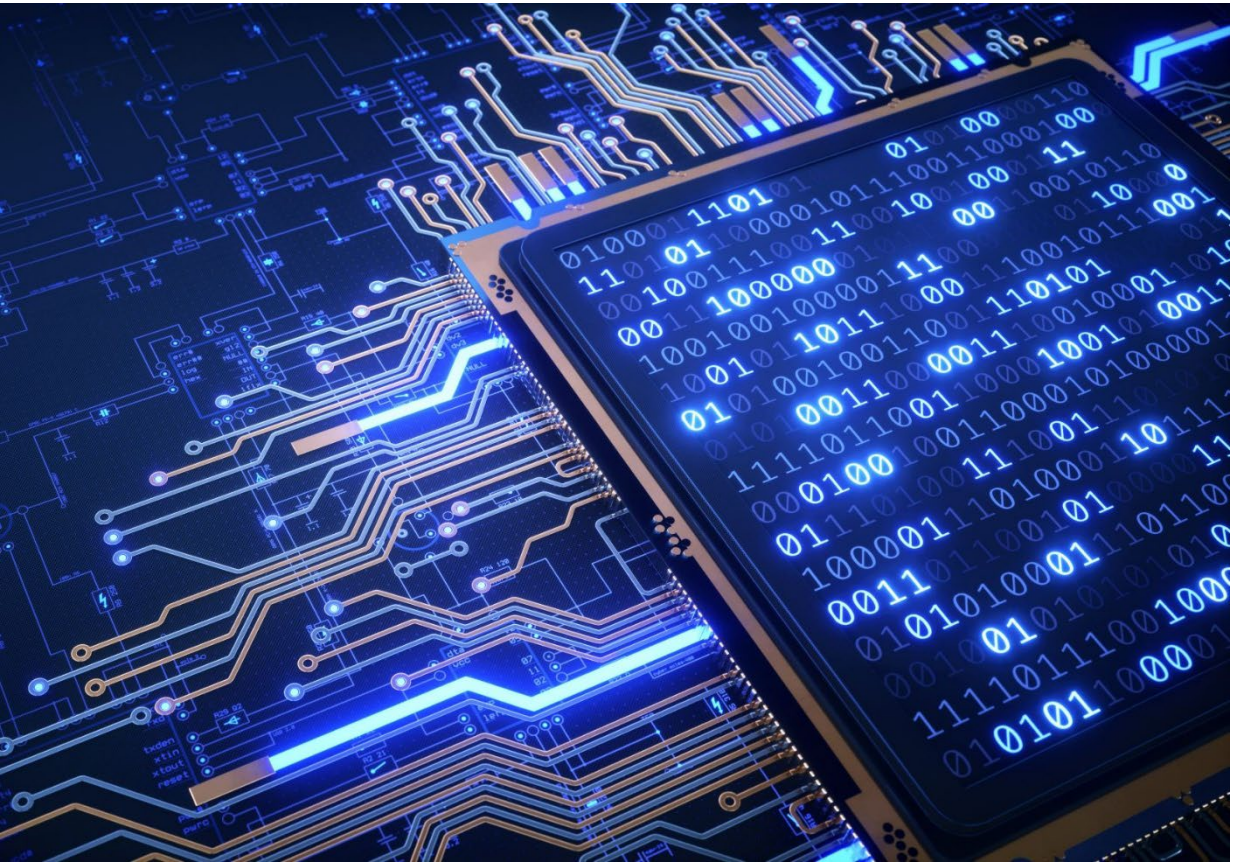




Intent and Vision for the Primary Care Model

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Strategic Intent for the Model



- **Goal**: To equip policy leaders and decision makers with a granular, equity-focused predictive tool that identifies statewide primary care workforce gaps and pinpoints subcounty-level access issues using a team-based care approach.
- **Output:** A comprehensive tool that HCAI and other partners can use to inform policy decisions and resource allocation, as well as a public-facing interactive dashboard and downloadable dataset for external use, with methodology documentation on HCAI's Open Data Portal.

Strategic Vision for the Model

Sub-County Granularity

- Detect primary care shortages with greater detail by looking beyond county or regional data, which often conceal neighborhood-level access problems and disparities between urban and rural areas.

Multifaceted Access

- Go beyond basic supply and demand shortages to incorporate real-world obstacles like travel distance, insurance types, and other factors.
- Integrate indicators of access to concordant care, including race & ethnicity and language.

Team-Based Care

- Assess the ideal combination of core primary care team members needed to deliver care to a patient panel.
- Determine which additional extended care team members should be incorporated in upcoming efforts.

Scenario Modeling

- Model various scenarios such as:
- +/- certain provider supply
- Shifting provider demand
- Alternative care team compositions
- +/- Medi-Cal acceptance rates



Definition of Primary Care and Key Assumptions

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What is Primary Care?

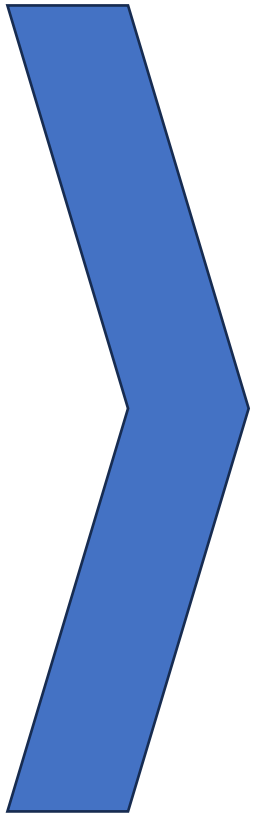
- High-quality primary care is the provision of whole-person, integrated, accessible, and equitable health care by interprofessional teams who are accountable for addressing the majority of an individual's health and wellness needs across settings and through sustained relationships with patients, families, and communities.[1]



[1] National Academies of Sciences, Engineering, and Medicine (NASEM), 2021.

Care team configuration as a central model input

- We are developing **a single staffing configuration** that HCAI can use in the supply and demand modeling efforts that can be adjusted to certain populations. This staffing configuration includes:
  - The **care team roles** and respective credential for each role
  - **Full-Time Equivalent (FTE) estimates** for each type of staff in the configurations to meet the primary care needs of a set population panel
  - **Main functions** of each role



- This core care team configuration is:
  - Informed by, and aims to build on, published literature and ongoing work.
  - Designed to inform workforce planning by defining a primary care team that collectively can address most patient needs in most communities, most of the time.
  - Recognizes that primary care is a broad area and includes many edge cases and special populations.



Proposed Care Team Composition

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Evolution of Primary Care Team Staffing for CA

The Primary Care Model for HCAI's workforce modeling effort is informed by previous national and CA-specific research and refined with input from leaders and stakeholders today.

A National Primary Care Workforce Model

"Workforce Configurations"
Meyers et al. 2018

- Presents primary care team-based staffing model and key functions of high performing primary care
- Four models based on patient population: index, high geriatric, high social need, rural
- Based on 73 exemplar primary care practices

Updating and Adapting for CA

"Strengthening California's Primary Care Team Workforce"
Rittenhouse et al. 2026

- Tests endorsement of primary care functions among 18 diverse CA primary care practices
- Explores primary care core team staffing across index and high social patient populations
- Incorporates lessons from other CA-based work, including Kaiser Permanente's Population Health Management Initiative

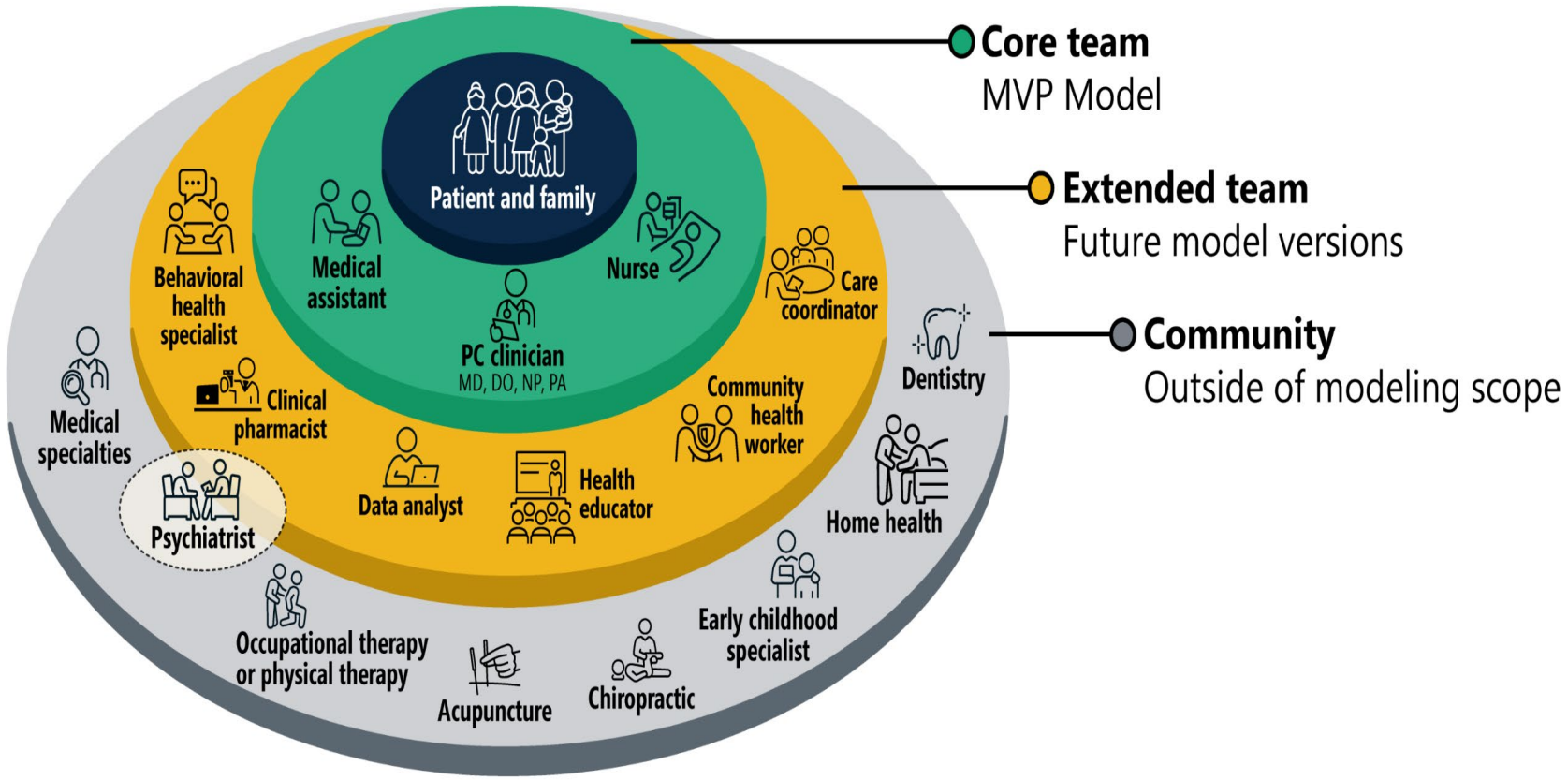
Understanding CA Supply and Demand Today

HCAI, 2026

- Leverages previous literature plus new contributions from Harvard and Oregon Health Sciences University
- Further refines with input from key informant interviews and stakeholder advisory groups
- Aligns with other state-based efforts including OHCA scorecard and DHCS primary care value-based payment strategy

Primary Care core team for HCAI workforce modeling

Proposed Care Team Configuration



This care team configuration is:

- Informed by, and aims to build on, published literature and ongoing work.
- Designed to inform workforce planning by defining a primary care team that collectively can address most patient needs in most communities, most of the time.
- Recognizes that primary care is a broad area and includes many edge cases and special populations.

Adapted from: National Academies of Sciences, Engineering, and Medicine. 2021. Implementing High-Quality Primary Care: Rebuilding the Foundation of Health Care. Washington, DC: The National Academies Press.

Proposed Care Team Configuration – Detail

Core Team Role	Credential	FTE	Functions
Clinician[1]	MD/DO/NP /PA	1.0	Proactive, organized, evidence based primary care including primary and secondary prevention
Medical Assistant[1,2,3]	MA	1.2	Vitals, rooming, patient education, proactive outreach
Nurse[1]	RN	0.5	Care management, clinical oversight of MA and nursing staff, access/triage, care transitions

Proposed Panel Size = 1,250 people[4]

1. Population Health Management Initiative. Jeanene Smith, Catherine Knox, Katie Coleman, and Elise Pomerance. **Care Teams Implementation Guide**. In: Coleman K and Singer A, editors. Building the Foundation Implementation Guide Series. 1st ed. Oakland, CA: Kaiser Permanente, Health Management Associates, and Pyramid Communications; 2023.
2. Meyers D, LeRoy L, Bailit M, Schaefer J, Wagner E, Zhan C. Workforce Configurations to Provide High-Quality, Comprehensive Primary Care: a Mixed-Method Exploration of Staffing for Four Types of Primary Care Practices. J Gen Intern Med. 2018;33(10):1774-9.
3. Cohen DJ. Workforce Configurations A comparative analysis of staffing models and PMPM targets. NASEM Presentation. May 2026.
4. SAG/KII recommendation.





Overview of the Supply and Demand Methodology and Proposed Outputs

Primary Care Supply & Demand Model Framework

⚙ SCENARIO "WHAT-IF" DIALS

Change an input → watch the outputs shift

DATA INPUTS & CALCULATION

① SUPPLY INPUTS *Who provides care*

- Roles: MD · DO · PA · NP · RN · MA (Claims PC Taxonomy + Licensure Area of Practice + Setting)
- Access: Provider & member address
- Concordance: Provider race/ethnicity & language (HCAI)

② DEMAND INPUTS *Who needs care*

- CA adaptation of Meyers Needs-Based Care Team Model
- Evidence-based staffing ratios (per 1,250)
- CA Population estimates & projections (Census & Department of Finance)
- Population race/ethnicity & language

③ MODEL ENGINE *How and what we calculate*

- Convert licenses → FTEs
- De-duplicate to include only top-of-license
- Geocode to Region / County / MSSA
- Forecast using Machine Learning methods
- **Supply FTE – Demand FTE = GAP**

RESULTS & MEANING

④ OUTPUTS *What we find*

- Historical & current FTE supply vs. demand
- Projected FTE supply vs. demand
- Provider shortages / gaps by role

⑤ ACCESS & EQUITY ISSUE FLAGS *What it means*

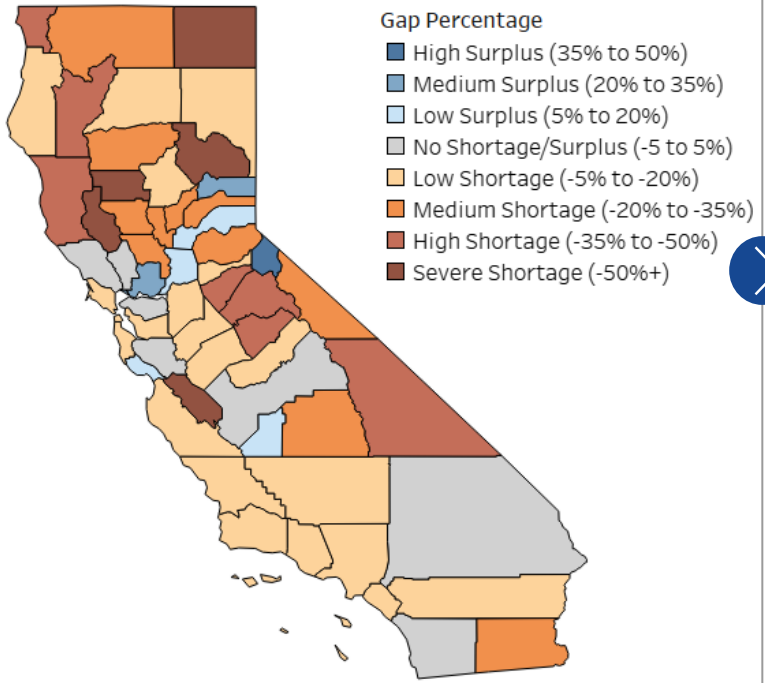
- ⚑ Drive time >15 min / 30 min (rurality-adjusted)
- ⚑ Patient to Provider ratios
- ⚑ Concordance between patient and provider

Statewide · Regional· County · Sub-County (MSSA)

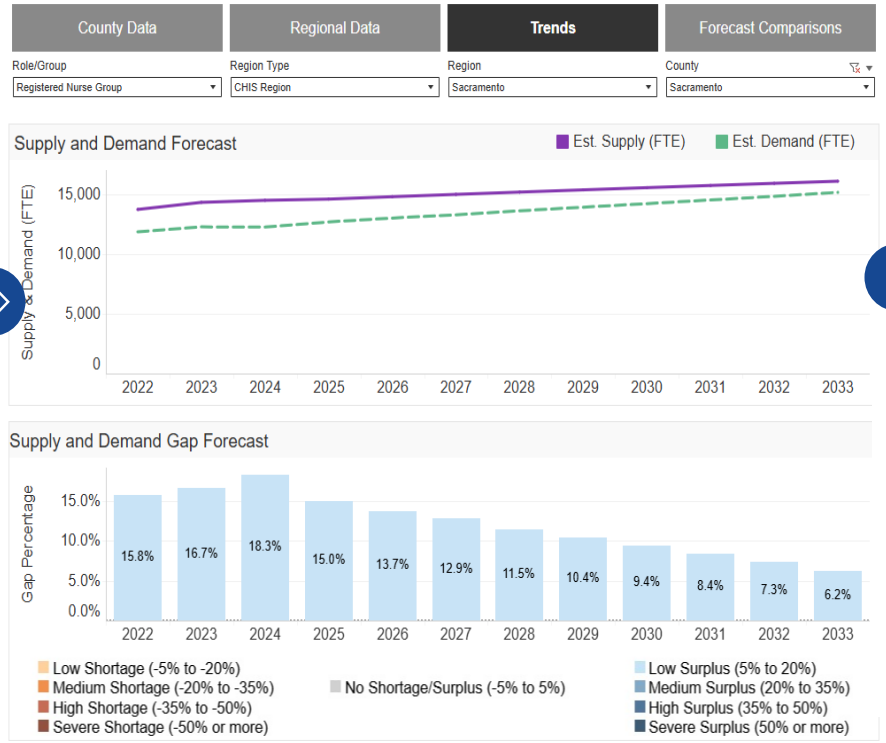
Model Outputs – Public Dashboard, Dataset & Methodology

Sub-County, County and regional level shortages for all role types and years

Gap Percentages



For each role and geography level, shows **supply and demand trends and gap forecasts across all projection years**



All model results and methodology documentation are publicly available on the Open Data Portal

All results and analyses have been made publicly available through interactive dashboards, public data files and comprehensive methodology documentation.

These models will continue to be refined and updated, ensuring the information remains accurate and relevant over time.

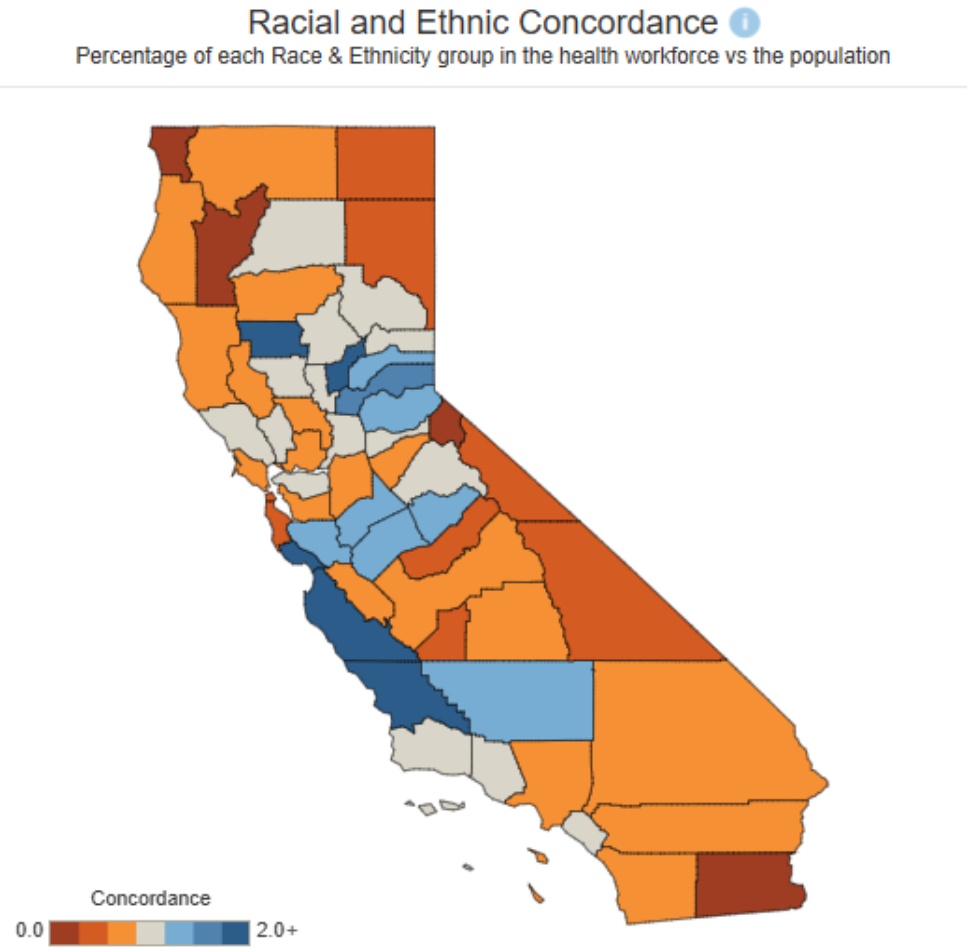
Each core assumption is supported by rationale and sources (I/II)

Assumption	Rationale	Supporting sources
Supply-driven demand	Focusing on facilities as sites of care enables high geographic granularity; additional data collection suggested for physician-owned clinics	Supply-driven approach taken by UCSF
Provider location is based on their license record	Best available data for provider location is licensing data; will use practice address when sample sizes are large enough	DCA License Registration System; HCAI Licensure Renewal Survey
Use of care settings & ratios	Enables calculation of bottoms-up demand based on facility utilization; primary research of staffing in non-hospital settings recommended to enhance assumption fidelity	HRSA leverages both care settings and staffing ratios; UCSF leverages care settings
Group sets of roles	Group roles with highly overlapping scopes of care to reflect fungibility and avoid false precision	
Group RNs: RN, CNS, PHN, and PMHN	All count toward ratio when providing direct patient care, and: only ~6% of PHN work in a public health setting, CNS provide direct care and expertise (akin to what a RN unit educator or manager might do), and majority of psych staffing needs are met by RNs given low PMHN count	CA BRN 2022 Survey of RNs (Chu & Spetz, 2024); CA BRN 2010 Survey of CNS (Spetz et al., 2010); Dr. Joanne Spetz; expert interviews
Group non-prescribing licensed clinicians: LCSW, LMFT, LPCC, psychologist	These roles all have a shared emphasis on psychotherapy and are largely fungible in statute and current staffing patterns	Board of Behavioral Sciences; Board of Psychology; California's Current and Future Behavioral Health Workforce (Coffman et al., 2018); Cal Code Regs. Tit. 22 Section 77061; expert interviews
License de-duplication	Enables conversion from total license count to total provider count	2017 Survey of NPs and CNMs (Spetz et al., 2018); expert interviews
Static care team staffing	Forecast is based on today's staffing model, which is often dependent on statute (e.g., Title 22 staffing ratios)	Neither HRSA nor UCSF model care team shifts

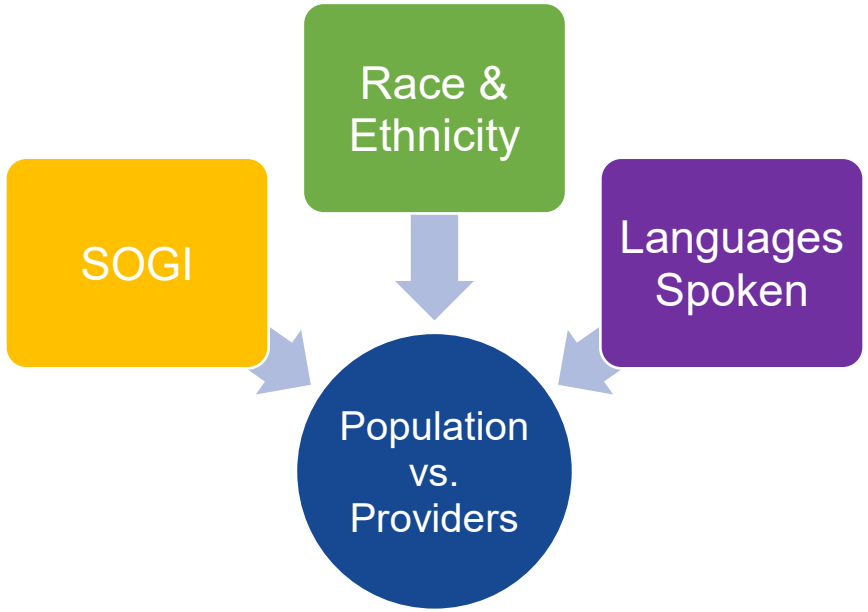
ILLUSTRATIVE ONLY

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Model Outputs – Concordance Measures



Concordance is a measure of how closely healthcare providers match the population they serve. Values at or near one indicate equal representation between providers and the population they serve. The further away the index is from one, the greater the disparity is between them.



Model Outputs – Scenario Modeling

A “Scenario” feature allows testing various supply and demand metrics, such as the impact on outputs when:

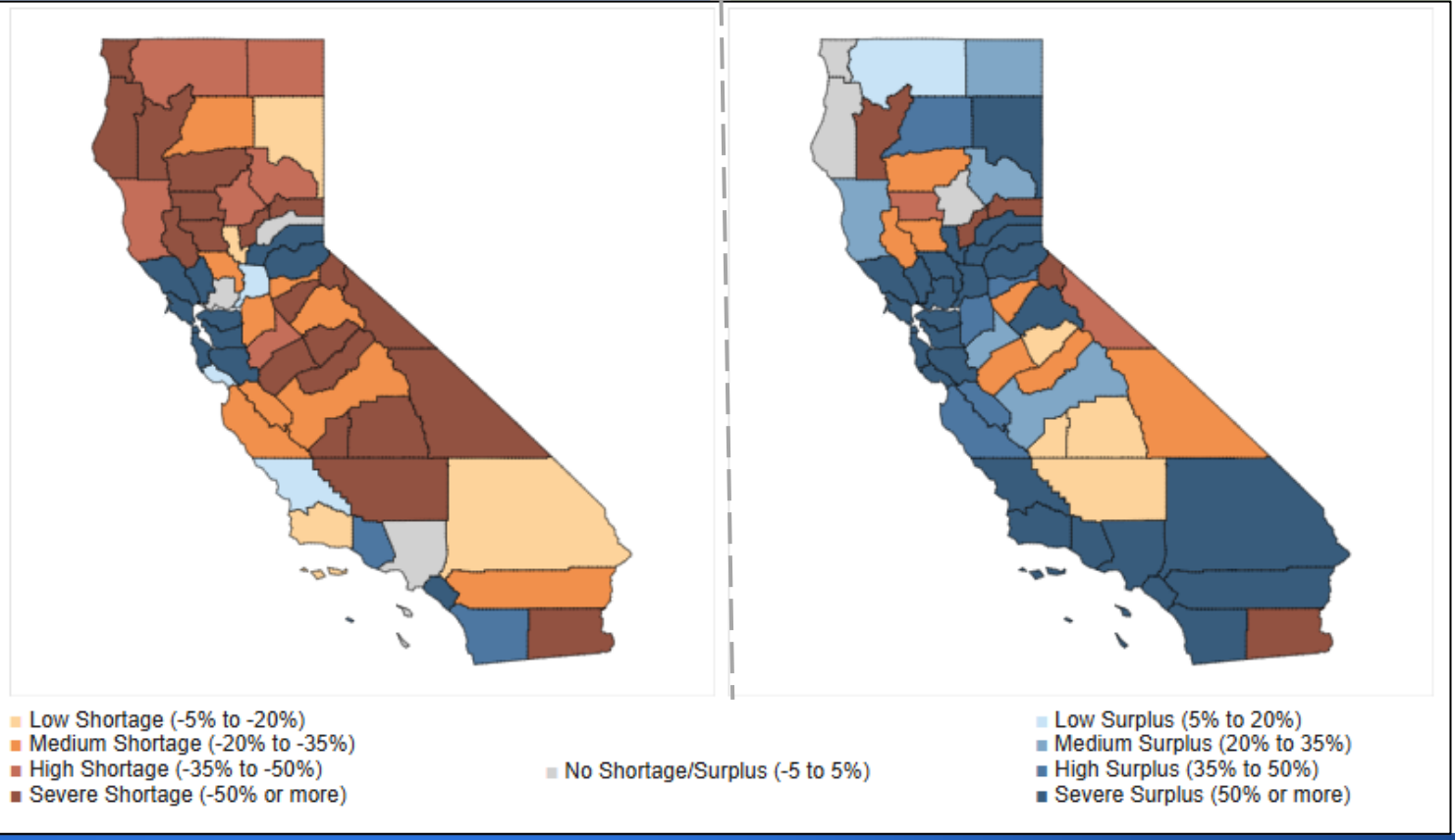
- The supply of a specific provider type is increased
- Demand shifts from one role to another
- Care team composition or panel size is adjusted
- The percentage of providers accepting Medi-Cal is raised or lowered

Scenario A:

Medi-Cal qualified population – 15% of providers accept Medi-Cal

Scenario B:

Medi-Cal qualified population – 30% of providers accept Medi-Cal



Project Timeline

We are here

Pre-Work Phase (Now – Sep.)
Research synthesis, data mapping, and SME assumptions gathering

Core Build (Oct.)
Technical model build begins with technical teams (HCAI and Mathematica)

Validation (Nov.)
Iterative vetting sessions and SME reviews

Updates to Council (Nov.)
We will provide updates at the Nov. Council meeting

Final Delivery
Results memo and strategic recommendations (Dec.), Public dashboard, methodology and data posted (Q1/Q2)

Questions?

- What would you like to see in a public-facing tool?
- Are there specific views (role types, geography levels, trends, etc.) that would help teams make better decisions?
- How can you see this tool being used, both by public and government-level sources?
- Are there other data sources you know of we could incorporate in future iterations to better capture primary care?